



Benton County Health Department

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Person-Centered Behavioral & Physical Health Care Public Health & Prevention Regulatory and Population Health Health Management Services

Biennial Implementation Plan 2013-2015

AMH developed the following guidelines in consultation with key county representatives and stakeholder advisory groups. The guidelines are designed to keep counties and AMH in compliance with statutes, block grants and other federal requirements. While flexible funding gives each county the freedom to spend local resources in the way that will best achieve health outcomes in its community, the biennial implementation plans will show how counties will meet those outcomes. To support success, AMH will provide resources and technical assistance to help develop plans that will meet each community's needs.

General Guidelines:

- Local Mental Health Authorities (LMHAs) will use information from their community needs assessment (Section 2) to describe the overall system, strengths and areas for improvement in the system, and a budget plan for the biennium.
- This information will be submitted in the form of a Biennial Implementation Plan (BIP) to AMH by March 1, 2013.
- AMH is available to provide technical assistance in the development of the BIP.
- AMH will conduct a review and approval process upon receipt of the plans.

- General review criteria can be found following each section, to help clarify the required information.
- AMH will notify each LMHA of any areas needing additional information, and when plans have been approved.
- Plans requiring additional information must be completed and approved prior to the effective date of the contract for the 2013-2015 biennia.

Part I: System Narrative:

This includes an overview of the current system; description of the community needs assessment process; and an analysis of the LMHAs strengths and areas for improvement.

1. System Overview

a) Provide an **overview of the County's current addictions and mental health services and supports system**, including:

Benton County, like most other counties blends many of our services and funding streams in order to provide a seamless array of services to clients. In each of the overview sections below the services we currently provide are described with an understanding that parts of these services are funded with Oregon Health Plan, County, or grant dollars in addition to the State service element funds. It should be noted that it is not uncommon for our clients to move from insured to uninsured or to private and uninsured and back again. But more importantly it is anticipated that some of our most innovative programming is at risk with the implementation of the CCO structure. These risks will be called out in the narrative.

- **Mental Health Promotion**

From 2009-2012 Benton County implemented a comprehensive suicide prevention program that included multiple strategies. First, we engaged local school districts in the implementation of district-wide gatekeeping trainings. This resulted in two staff members at each of our Benton County schools becoming certified in Applied Suicide Intervention Skills Training (ASIST). They also learned how to provide RESPONSE suicide prevention curriculum to students, as well as how to implement district policies on how to prevent and provide crisis management around suicide. Second, we hosted gatekeeping trainings in the community to help people recognize suicide risk and learn what to say and do to prevent the immediate risk of suicide. Lastly, we conducted outreach campaigns related to suicide prevention, specifically targeting at-risk populations. Over the last three years, 154 students received the RESPONSE curriculum, 182 people were trained as community gatekeepers, and 721+ people received outreach information about suicide prevention.

Substance Abuse and Problem Gambling Prevention

The substance abuse prevention program focuses on community mobilization and reducing underage drinking. The Prevention Coordinator provides technical assistance to the community in the forms of grant writing, evaluation assistance, program development, and community planning processes. The Prevention Coordinator also provides technical assistance to community partners working in alcohol, tobacco, and other drug (ATOD) prevention through regular attendance at meetings. Underage drinking prevention strategies are implemented via collaborations with law enforcement, through increasing community partnerships, by providing educational outreach and prevention education, providing merchant recognition, and by providing community awareness regarding underage drinking as a community health issue. The substance abuse prevention program is also guided by the Strategic Prevention Framework, which was utilized to conduct a needs assessment in 2011 to guide future planning and implementation.

The problem gambling prevention program focuses on community awareness/outreach and Latino outreach.

Community awareness and outreach are achieved through implementation of problem gambling awareness week media and outreach activities, presentations to community agencies/coalitions, implementation of annual problem gambling prevention awareness art contest, and on-going integration with substance abuse prevention program. Latino outreach is conducted through providing presentations and outreach/awareness materials at annual soccer tournament and family weekend, which is attended by over 500 Latino families.

- **Mental Illness, Substance Abuse and Problem Gambling Prevention**

Crisis

Benton County provides 24-hour, 7-day a week crisis services for both adults and children as well as to the patients being seen in our primary care clinic that come from across the region to our Federally Qualified Health Center. Crisis telephone services can be accessed by calling the Benton County Public Services Building or a specific published crisis number that appears on our outreach crisis cards, 24-hours a day. Benton County contracts with a local provider, “Protocall,” that utilizes highly skilled clinicians to manage most crisis phone calls independently. For higher needs consumers “Protocall” pages the Benton County Crisis team and the team responds within 5 minutes with a return call and follow-up.

Counselor of the Day & Other Collaborations

During daytime hours the “Counselor of the Day” responds to walk-in, hospital, jail and community crisis. From the community the crisis team is contacted via pager; they respond to most pages within 5 minutes and not later than 15 minutes. The team responds in person to the emergency room, jail and other community locations as needed within 45 minutes 24 hours a day. Benton County also provides a liaison to Good Samaritan Regional Hospital to assist with facilitation of transition to the community. We provide emergency room crisis evaluations, Pre-Commitment services and occasionally assist law enforcement with consultation and support in the community for individuals with mental illness who are having a real time encounter with law enforcement. For individuals diverted from inpatient admission, walk-in follow up services are available by accessing the Counselor of the Day at BCMH during business hours. Individuals with major mental illness are enrolled and served regardless of insurance status.

Jail Diversion

Benton County provides a Jail Liaison who visits the jail 3 times a week to provide evaluations, skills training and discharge support as part of our jail diversion efforts. Regular meetings with law enforcement also occur with the goal of ensuring that every effort is made to provide resources to mentally ill individuals so that they can avoid incarceration and continue in or get into treatment. Currently a probation officer works with our Assertive Community Treatment Team as part of our effort to increase motivation for consumers who are on probation to more actively participate in treatment. Benton County is exploring other options as well and efforts are being made to develop memorandums of understand and other agreements with law enforcement that will facilitate an increase in our ability to work together in the future.

Concerns

The above three sections are all parts of how Benton County manages crisis during the daytime, evening, at the jail and in the community. While Benton County has different strategies to meet the need of individuals in crisis, nonetheless each of these services falls under the over-arching category of Crisis. Crisis funding is currently a blend of SE37 funding, Oregon Health Plan funds, and County funds. It is still unclear how funding mechanisms under our Coordinated Care Organization will impact crisis services for Benton County clients. Planning is not far enough along.

ADULT SERVICES-Outpatient

Benton County provides an array of outpatient mental health services that include both long and short term therapy, case management, housing, ACT services, peer wellness services, psychiatric services and a number of groups, including Illness Management and Recovery and DBT. Many of our services are provided in the community. The majority of our clients are seriously mentally ill and our focus is on recovery oriented activities that seek to reduce stigma in the community as well as for the individual. One of our most popular groups is the Social Group which provides an opportunity for consumers to go into the community as a group with a goal of reducing isolation, practicing social skills and reducing anxiety within a guided set of activities. The group also focuses on goals that include healthy physical activities and nutritional food.

Concerns

Outpatient services are a key feature of both adult and children's behavioral health and are also supported with a blend of service element, OHP, and County funds. It is still unclear how funding mechanisms under our Coordinated Care Organization will impact our ability to provide the broad array of rehabilitative services for Benton County clients. Planning is not far enough along.

Access

Access is a key value for Benton County. In order to reflect that value, assessments are conducted on a walk-in basis Monday through Friday from 1pm to 5pm; no appointments are needed. We have identified a goal of having the first follow up appointment within 7 days of assessment and 2 more follow up appointments within 30 days. Since the implementation of our walk in process for assessment we have also implemented a policy of collaborative documentation that invites the consumer into the evaluation process in a completely transparent manner.

Level of Care & Utilization

Benton County utilizes a level of care system that reflects our recovery oriented service framework and conceptualizes our belief that individuals benefit from varying levels of support ranging from very supportive to least supportive. A key part of our plan is to ensure that all of our clients are actively receiving medical services as well as mental health services. Reflective of this vision, many referrals are facilitated by the providers in our FQHC for uninsured individuals being seen in our primary care clinic. Opportunities for coordination of care which are facilitated by our electronic health record are optimal and our utilization process ensures the best use of our therapy services. This year the addition of a Spanish speaker that works with both the adult and children's teams has provided an opportunity to better meet the needs of our Spanish speakers.

Case Management

Case management is one of the cornerstones of our program and much of our therapeutic case management is provided in the community and in the homes of our clients. Our QMHA's are community experts who have knowledge of a large number of resources available to assist individuals with food, clothing, rental assistance and access to apply for public benefits. The Assertive Community Treatment Team provides very intensive services

including outreach, medication support, community psychiatry, skills training and stabilization services. This year Benton County was able to add a primary care nurse to the ACT team in order to support those individuals with co-morbid conditions and limited skills to manage their physical symptoms. A large number of individuals, through these services, are able to remain in the community, in their own homes. An added element to our ACT team is the participation of a probation officer and Benton County hopes to implement a FACT (Forensic Assertive Community Treatment) team in the future in order to provide more robust jail diversion options to individuals that become involved with law enforcement due to their mental illness.

Concerns

As it has already been pointed out, services that are provided to an individual in the community are paramount to that individual's success. As such, case management is another area where blended service element, OHP, and County funds are necessary and Benton County has concerns about the adequacy of that funding. It should be noted that Benton County particularly has been assigned one of the lowest capitation payment rates in the state for their ACT services, in spite of the fact that we have been designated as meeting fidelity in every area. As the funding for ACT moves into the CCO it is not clear that the benefit of an ACT program is fully understood nor what the funding mechanism will be.

Currently a portion of Benton County's ACT team FTE is funded by AMHI funding and it is unclear if it will be available in the future – again a planning/funding decision yet to be made with the CCO. In truth there has never been an incentive to develop an ACT team and Benton County's ACT team grew out of a rather organic process, to provide an evidence base practice, which included a string of small grants out of AMHI funds to support positions and services. Benton County is a small community so the numbers are not large but at this time there are 25 individuals being served in the community who would otherwise likely be in the hospital. In addition, some of those individuals have Medicare and are profoundly mentally ill. Medicare, of course, does not pay for any case management so these services will be funded by this flexible funding as well. On a daily basis the Benton ACT team, through service coordination, is able to provide much lower cost and higher quality support to very ill individuals, stabilizing them and helping them stay in the community.

Peer Wellness Specialists

Our Peer Wellness Specialists, who work within both Public Health and Mental Health, are an essential part of our mental health treatment team. There is a dedicated “Peer” on the ACT team and as part of our respite program, and our peers provide emergency room diversion/respite in our Benton County Newlife Housing project. Peer Specialists attend treatment team meetings, conduct groups and individual services, and are an important element of our recovery oriented services. Recently our “Peers” have implemented the “Hearing Voices” Group, giving individuals who experience extreme states an opportunity to feel accepted and heard in an environment that is non-judgmental and welcoming.

Concern

Funding for Peer Wellness Specialists is another area of concern. There are no designated dollars for peer services beyond some grant funding that is ending. Thus those services will have to be paid for out of SE 37. It is our understanding that state grant opportunities would be available early this year but there has not been any announcement yet. This is a resource/service that Benton County created with the aid of grants and County funds. The end result is that Benton County has one of the most established and vibrant peer programs but the future is unclear. It remains a priority for us to continue funding to this program.

Supported Employment

Benton County Peer Specialists are certified in the “Project Open” peer facilitated employment program. A key feature of this Peer supported service is that it “gives consumers hope that they can work.” In addition to the traditional services around referrals to vocational rehabilitation services, resume building and job searching, our peers serve as role models who embody and demonstrate the skills needed to obtain and maintain employment while managing a major mental illness.

Benton County has also met with a state representative and reviewed the fidelity scale for a more traditional type of supported employment program and we are in the process of identifying the resources needed to launch it within the next few weeks.

AMHI & Commitment

Benton County serves a number of AMHI clients and 4-5 PSRB clients. Our recidivism rate for both of these populations is near zero. Many of our AMHI clients that were initially stepped down from Blue Mountain or OSH

have moved from RTF's and RTH's to supportive housing, and further to their own homes. Many of them received medication support, training and stabilization and through participation in outpatient services have been able to reduce their contacts with professional services and have begun to practice their own recovery in the community. The first segment of the AMHI program Benton County and ABHA were credited with the second highest number of qualifying events in the state and at present there are only 2 AMHI patients at the state hospital.

Concern

Benton County has major concerns about AMHI and how the CCO will manage this process and the funding. It is unclear who will get or disperse referrals as well as manage a number of other processes. A key concern is with regard to co-management. If the County is unable to place a patient who is ready to transition, who will pay the co-management fee? Many AMHI are patients are uninsured and again it is through the blending of resources, including AMHI grants that many are served. We are currently planning with the CCO for the mental health system transitions and plan to have this completed by July 2013.

HOUSING & RESPITE

Benton County has a small supported housing program (5 slots) that supports some of our SMI clients. For individuals who live in these slots a key part of their treatment revolves around skills training and Habilitative services that will increase their opportunities to eventually live in their own homes. Benton County has 2 licensed mental health AFH's, 1 RTH and one RTF. The RTF has one respite slot that allows us to divert individuals from inpatient services on a regular basis. Benton County also has a small housing project (Newlife House) that provides extended respite/transitional housing for indigent individuals that are symptomatic, vulnerable and homeless and in need of a more extended respite stay. Our peer specialists provide ER diversion at our Newlife Housing Project. Lastly, Benton County is able to utilize limited slots in two local DD homes. Jackson Street Youth Shelter provides respite for our youth.

Concern

As we approach July 1st and the CCO's take over management of housing there are a number of concerns. It is not uncommon that individuals who are indigent are moved into AFH or even RTH level of care. In that

circumstance we submit a contract amendment request to support the individual. Housing and payments have always been difficult to manage and it is unclear as we go forward how that process will be managed.

In addition one of our most useful and important projects is the Newlife Housing Project which is completely grant funded and supported. This resource is for indigent clients and is part of the continuum of services that helps keep individuals out of the hospital and in the community.

Senior Peer Specialists:

Benton County continues to support a small Senior Peer Consulting program that provides outreach to seniors in the community with needs that a paraprofessional can assist with. Benton County has a contract with PsychMed Associates to obtain PASSAR evaluations and we use a psychiatric nurse to communicate with the psychiatric hospital and the doctor directly to facilitate a client's admission.

The current service capacity designed to meet the needs of older adults is limited. We provide standard screenings and assessments as requested by individuals, family, or most frequently, institutions seeking these services. Our staff has provided outreach services to area rehabilitation facilities, assisted living residences, the local hospital, and other medical facilities. We have recently assigned our mental health nurses to provide blood pressure checks at the local senior center. This health promotion activity allows us to provide information and referrals to seniors who may present with emotional concerns during these checks.

The Senior Peer Counseling program continues to be our most successful service for older adults. Currently, five trained senior peer counselors meet 1-6 times on average with a person who has been screened by a Qualified Mental Health Professional (QMHP). The screening is an opportunity to identify any medical or emotional issues (including substance abuse), that should be addressed by a professional and which goals might be best served by a Senior Peer Counselor. Goals that the older adult and the peer counselor address are short term ones, most often related to grief or loss, decision making around current and future living situations, finances and changing medical needs. The peer counselors meet weekly with the supervisor, provided by Benton County mental health, to review active clients, and build skills. The number of referrals is small, but the group of peer counselors is close knit. These respected members of our community also use their skills informally, outside of the program with peers at church, the Senior Center and other social settings.

CHILDREN'S BEHAVIORAL HEALTH

Benton County works closely with our community partner Old Mill Center to provide behavioral health services to youth and is currently conducting assessments for many youth in order to ensure rapid access to local service providers. In addition Benton County supports behavioral health and substance abuse services in all the schools in the area, (15) including Alsea and Monroe. Benton County youth providers focus on ensuring that a systems approach is taken when evaluating the child and the family is included in the process to ensure that environmental considerations and barriers are identified in any plan of support. ACIST (A Community Integrated Service Team) also provides Wrap Services for a number of children and youth. In the coming year more attention will be focused on integrating the children's team with the public health visiting nurses and the pediatric medical providers. It is our hope to be able to provide more children's behavioral health outreach services to new mothers and to individuals, children and families being seen in our Patient Centered Primary Care Health home. The ACIST team also conducts assessments for children in substitute care.

Concerns

Little planning has occurred yet on the children's behavioral health system and the many different kinds of services provided through multiple agencies. We are participating in planning with the CCO for this complex system of services and do have concerns with regard to how the CCO's will manage the children's system and how they will support such services as WRAP.

Substance Abuse:

There are a number of community entities in Benton County that provide substance abuse services. Yes House provides both outpatient and residential services for youth and our Benton County youth substance abuse counselor works closely with Yes House to ensure that youth are able to access service quickly when it is needed. Milestones Family Recovery provides detox, outpatient and inpatient services to women, and Community Outreach Inc. provides AOD services as part of their shelter program. As part of our safety net programming, Benton County New Beginnings provides outpatient substance abuse treatment with special emphasis on priority populations, such as IV drug users and pregnant women. Benton County has a close collaborative relationship

with Child Welfare DHS and New Beginnings staff work closely with Child Welfare to ensure that ITRS eligible parents are ensured timely access to treatment.

New Beginnings has also invited the recovery community into the treatment center and they provide a venue for a Narcotics Anonymous meeting and a Dual Diagnosis Anonymous meeting on a weekly basis. In the coming year Benton County plans to bring the AOD program back into the health department and re-focus on providing robust co-occurring AOD services in collaboration with both our mental health services and our primary care providers. The primary care providers are being trained to conduct the SBIRT services and a substance abuse counselor is being added to the primary care controlled substance committee. The controlled substance committee is a group that meets regularly to review prescribing practices to determine if individuals are at risk of addiction and should be referred to AOD services.

For the past several years Benton County has had a Drug Treatment Court that has been recognized nationally as a Mentor Court. There has also been a robust Community Corrections program that has served many offenders over the years. As part of Benton County's compliance programming there is also a small DUII program that focuses on those individuals who are already participating in treatment and need to clear a previous DUII. It is a value of Benton County not to compete with local providers of DUII so we restrict our services to those already in treatment in another program.

Detox

While Benton County lacks a stand- alone detox facility, Good Samaritan Hospital has agreed to provide medical detox for individuals with co-occurring conditions and OHP. Benton County Addictions Services assists the hospital to transition individuals to residential treatment, outpatient treatment, or clean and sober living options for continuity of services as needed. Because there are limited local residential beds, individuals can be referred to New Beginnings treatment, a division of Benton County mental health, where counselors conduct an assessment and provide case management to assist the individual to obtain a bed in a neighboring community. Counselors at New Beginnings strive to have relationships with treatment facilities that enhance their

opportunities for speedy placement of Benton County residents. Periodically uninsured individuals will participate in intensive outpatient services while they wait for a state bed at a residential facility. After placement, counselors typically provide case management to individuals completing inpatient treatment to support their transition to their home community. Individuals may return to participate in outpatient services or to live in our local Oxford House. New Beginnings also provides after care groups for individuals returning from treatment.

For youth, detox can be managed in the home under close supervision, working with the primary care or ED provider to include either a transition to residential treatment or intensive outpatient program, as determined by ASAM criteria. Residential treatment providers include YES House. If medical supervision is necessary, youth are admitted/referred to the local hospital, as there are no adolescent –specific medical detox facilities in OR. A&D counselors on the Children’s Mental Health team provide outpatient treatment. Counselors see clients on an individual basis, as well as working closely with the family to provide optimal support for recovery.

Homeless Collaborations

Benton County has close relations with local shelters and with the Homeless Coalition, the members of whom shepherd many of our most vulnerable community members right to our door. Together we ensure they establish with primary care and often enroll in mental health services. In addition, Community Outreach Inc. is a valuable partner that completes, along with Pastoral Counseling, a continuum of services that allow us to step down individuals that no longer meet the level of medical necessity to be served by Benton County as per a priority status but who continue to desire some sort of support.

Gambling

Benton County administers the South Oaks Screen for gambling to each individual who seeks mental health or substance abuse treatment. We collaborate with Linn County who provides a gambling addiction specialist one day a week at the Benton Health services location. Groups are available at the Linn County site and provisions are made for transportation to Linn County.

Early Intervention

Benton County does not have an EASA program at this time. Currently our process is to collaborate with Oregon State University to ensure that students that are identified as needing EASA type services are enrolled in whatever services might be most appropriate. As we go forward talks are underway with OSU and a local prescriber to try to formalize a collaborative process that will begin to create an EASA program. A meeting with Tamara Sales and ABHA is being scheduled and it is envisioned that OSU might serve as the “doorway” to EASA and a conceivable collaboration with a prescriber and Linn County might occur in order to make these services available to the Benton Community.

As part of children’s behavioral health and the connection to Farm Home and Old Mill there is a collaborative process to ensure that children, identified as Youth in Transition, who are in need of mental health services, are shepherded into services. The division between children’s behavioral health and adult behavioral health is blurred to ensure that the best fit is considered when serving young adults in need of services.

Concern

There is a great deal of interest in EASA services at this time but no extra funding. It is a concern that good ideas receive a great deal of exposure but no financial support.

Integrated Behavioral Health Services

Benton County has embraced the triple aim concept enthusiastically and is working hard to reduce and remove the barriers to care such that better health, better care and lower cost can truly become a reality. To that end we have embarked on a collaborative process with our primary care center and whenever possible we attempt to bridge our standard mental health package of services across the primary care divide and utilize our primary care providers as prescribers for our mentally ill clients. Our goal is two-fold and includes saving our psychiatrist services for those most ill individuals that require the skills of a specialist and also normalizing collaboration between primary care and specialty care. Our hope is that we can create an environment for consumers wherein they feel confident about managing their recovery in a less restrictive environment, and at the same time, know that specialists are available if they are needed. (See Level of Care Matrix –Appendix A)

Benton County Subcontractors

- **Old Mill Center** provides a combination of services for youth including individual and group therapy, prescribing and next day crisis appointment
- **MidValley Behavioral Care Network** provides administrative and fiscal support for a region of counties of which Benton is a member. It manages the crisis funding and monitors utilization.
- **Janus House** is a 12 bed Residential Treatment Facility. It also has 1 respite bed that is funded out of crisis funds and paid at a monthly slot rate.
- **Local Foster Care Providers** –Benton County has 2 licensed mental health adult foster care homes with a total of 7 beds. 4 mental health patients are living in DD facilities and 2 clients are living in relative foster care.
- **Psychmed Associates** conducts PASSARS for seniors' when there is a need to determine if a decline in mental status warrants and increase in services.
- **Various Local AOD Prevention Coalitions such as the Partnership Coalition which works to reduce excessive and underage drinking**
- **Jackson St. Youth Shelter** provides respite options for teens and a housing slot that is paid for with crisis funds.
- **Oregon Family Support Network** provides peer support to youth and families in collaboration with the Children's Behavioral Health team
- **Various services and supports for youth – flexible funds** – Children's Behavioral health has been allocated

funds that can be spent in a variety of ways to support children and families.

- **Children’s Farm Home Skills Training Agreement** – Farm home provides access to skills trainers to assist children and families in the community.
- **Shangri-La Sequoia Creek Residential Treatment Home** is a 5 bed facility that provides housing and skills training for Seriously Mentally Ill individuals
- **Renew Lewisburg House** is a 3 bed Residential Treatment Home for very high need individuals stepping down from Oregon State Hospital.

Review Criteria:

- **Plan addresses each area.**
- **Specific services and supports are described.**
- **Plan prioritizes populations and addresses specialty populations, giving specific examples.**
- **Plan incorporates the Strategic Prevention Framework to guide local prevention planning and program implementation.**

Review Criteria:

- **List includes all services provided by the LMHA and all sub-contractors of the LMHA.**

c) Describe how the LMHA is collaborating with the CCOs serving the county.

Benton County Health Department is an active partner in the development and operation of the Intercommunity Health Network CCO serving Linn, Benton, and Lincoln counties. County, CCO, and community stakeholders developed a Regional Planning Council to guide development of the CCO and advise the CCO governing board.

This Regional Planning Council has been meeting now for over two years.

During the first year of operation the CCO, upon advice from the LMHA, agreed to continue the mental health carve out to Mid Valley Behavioral Care Network (for Linn Co.) and to Accountable Behavioral Health Alliance (for Benton and Lincoln). This was done to assure that during the initial establishment of the CCO, critical mental health services were not lost. Currently a work group is designing the next phase in CCO organization and funding flow for behavioral health services with the following objectives:

- Enhances access from a MH perspective to include other community providers as appropriate.
- Data Management (1) Reporting (2) Encounter Data (3) Claims
- Supports a regional system of care (consistency across all three counties)
- Supports opening the panel to qualified providers, in a productive and sustainable way
- Supports the integration and delivery of services in the Primary care Home, as appropriate
- Manages the risk throughout the delivery system to support the vision of the IHNCCO as a Community Plan
- Supports IHN's abilities to fulfill its contractual requirements.

This group is making recommendations to the CCO with the intent of moving to a new structure by July 1, 2013.

A County Commissioner or County Operations Officer from each of the 3 counties sits on the governing board of the CCO insuring county voice in the operation of the CCO.

Review Criteria:

- **Description includes current collaboration and plans for future collaboration as the new system is developed.**

- **Collaboration efforts include the community needs assessment.**

d) List the Mental Health Advisory Council and the Local Alcohol and Drug Planning Committee (LADPC) Members, including their stakeholder representation.

Benton County has a merged Mental Health Advisory Committee and Local Alcohol and Drug Planning Committee. The committee is called the Mental Health, Addictions, and Developmental Disabilities Advisory Committee (MHADDAC). The Committee meets on a monthly basis and has 15 seats. Members are as follows:

<u>Position</u>	<u>Name</u>
1. Lay Citizen	Vacant
2. Consumer	Lisa Pierson
3. Consumer	Amy Harding
4. Medical Professional	Steve Gallon
5. Lay Citizen/Medical Professional	Vacant
6. Consumer/Student	Dawn Marie Oakes
7. Consumer	Jon Tripp
8. Lay Citizen	Vacant
9. Consumer	Vacant
10. Consumer	Chris Foulke
11. Allied Agency	Hilary Harrison, Vice Chair
12. Allied Agency	Dennis Epstein, Chair
13. Undesignated	Sebastian de Assis

<p>14. Undesignated 15. Undesignated</p>	<p>John Wolcott Amy Baird</p>
<p>Review Criteria:</p> <ul style="list-style-type: none"> • Complete list included with stakeholder representation. • Representation required by statute is met, or plan included addressing any gaps in representation. 	
<p>2. Community Needs Assessment</p>	
<p>a) Describe the community needs assessment process, including the role of peers and family members in the design and implementation of the process.</p> <p>See Community Health Assessment – Attachment B</p>	
<p>Review Criteria:</p> <ul style="list-style-type: none"> • Process is clear. • The role of peers and family is described and is meaningful. • Reference to supporting documents is included where applicable. 	
<p>b) Describe how data from the community needs assessment is used to evaluate prevalence, needs and strengths in the local service system.</p>	

Review Criteria:

- **Data used is relevant and includes priority and specialty populations**
- **Evaluation is informed by and shows connection of data to other community service systems**
- **Prevalence, needs and strengths are all addressed and the use of data in each area is described.**

c) How does the community needs assessment process include feedback from advisory and quality improvement groups? Please identify the specific groups.

Review Criteria:

- **What groups did feedback come from?**
- **How is the feedback obtained?**
- **How is the feedback used?**

3. Strengths and Areas for Improvement:

Based on the Community Needs Assessment, please indicate where there are strengths or areas for improvement in each of the areas below.

Review Criteria:

- **Reflects Community Needs Assessment.**
- **Identified strengths and areas for improvement match data and other information referenced in the community needs assessment.**
- **Plans to maintain and develop strengths are addressed in each area.**
- **Strategies to make improvements are described and match performance goal strategies where**

applicable.

Area	Strength or Area for Improvement	Plan to Maintain Strength or Address Areas Needing Improvement
a) Mental Health Promotion	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Collaborative relationship between the M/H and H/P Programs. <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Community Health Improvement Goals 	<p><u>Maintenance of Strengths:</u></p> <ul style="list-style-type: none"> • Continue focus on the collaborations that resulted in the CHIP. <p><u>Improvement Plans</u></p> <ul style="list-style-type: none"> • Increase funding allocation to Health Promotion Program • Implement early maternal depression screening and referral for M/H services via collaboration between M/H and P/H Maternal Case Management Program
b) Mental Illness Prevention	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • ACIST (Children’s Behavioral Health) early M/H intervention & referrals in area schools <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Increase focus on school based 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to be guided by the Strategic Prevention Framework • Continue current programming providing education and early intervention in area schools <p><u>Improvement Plans</u></p> <ul style="list-style-type: none"> • Dependent upon funding add EASA

	services	(Early Assessment and Screening Alliance) program <ul style="list-style-type: none"> • Increase overall presence of Children’s team in schools to provide education and referrals
c) Substance Abuse Prevention	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Substance Abuse Program is guided by the Strategic Prevention Framework • Collaboration with law enforcement and local merchants to reduce underage drinking <p><u>Area for Improvement</u></p> <ul style="list-style-type: none"> • Increase AOD prevention in schools • Increase prevention efforts related to social availability of substances and community norms 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to be guided by the Strategic Prevention Framework • Continue with current efforts <p><u>Improvement Plans</u></p> <ul style="list-style-type: none"> • Provide substance abuse education and training to teachers in local schools • Provide community prevention forums at schools providing information and referral resources • Work with community partners such as criminal justice to reduce availability of substances and change community norms related to substance use
d) Problem Gambling	<p><u>Strength</u></p> <ul style="list-style-type: none"> • Benton County continue to 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue current program

Prevention	<p>collaborate with Linn County to provide regional Gambling Treatment Services for the Linn-Benton Region</p> <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Increase community gambling prevention awareness/outreach 	<p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Integrate problem gambling prevention into the substance abuse prevention work • Increase community capacity to address problem gambling prevention
e) Suicide Prevention	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Provided Applied Suicide Intervention Skills Training (ASIST) in area schools • Provided RESPONSE Suicide Prevention Program to 182 <p><u>Area for Improvement</u></p> <ul style="list-style-type: none"> • Focus on CHIP goal to reduce suicide in Benton County 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to collaborate with schools and community partners to identify at risk youth <p><u>Improvement Plans</u></p> <ul style="list-style-type: none"> • Increase funding allocation for suicide prevention in schools
f) Treatment: <ul style="list-style-type: none"> • Mental Health • Addictions 	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Assertive Community Treatment Team • Integrated AOD and M/H 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to provide current program services • High number of individuals moving from

<ul style="list-style-type: none"> • Problem Gambling 	<p>treatment team & Co-Occurring Programming</p> <ul style="list-style-type: none"> • Illness Management and Recovery Programming <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Increase adherence to fidelity for ACT team • Increase focus on Patient Centered Primary Care Home model 	<p>RTH, RTF and AFH into less supportive levels of care in the community</p> <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Identify training resource and allocate resources to achieve higher level of fidelity to ACT model • Insure that the mental health needs of the FQHC patients (uninsured within the medical clinic) are met by systematizing the referral process for mental health, children’s behavioral health and AOD referrals from the medical clinic
<p>g) Maintenance/Recovery Support (Include specifics pertaining to mental health, addictions and problem gambling treatment)</p>	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Well established Peer Specialist Program <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • AOD Recovery Specialist Support • Explore options around peer supported ER AOD diversion resource • Increase service options related to healthy activities 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to allocate resources to further strengthen Peer Specialist Program <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Increase provision of habilitative services • Identify resources to provide nutritional support to clients • Provide swimming and Social Group to Increase healthy physical activities and reduce isolation for SMI individuals • Engage specialist from CCO to work with

		community partners to divert individuals with AOD problems from the ER
h) The LMHA's Quality Improvement process and procedure	See Performance Management and Quality Improvement Framework: Attachment C	
i) Service coordination and collaboration with corrections, social services, housing, education, employment and other community service agencies	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Strong community collaborations established • Housing Specialist Position is established <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Continue to enhance collaborations with law enforcement, DHS/Child Welfare, Vocational Rehab, local housing agencies and landlords 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Jail liaison • Forensic ACT team • Bi monthly meetings with law enforcement <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Increase jail diversion services • Further develop Adult Services Team in collaboration with Homeless Coalition • Enhance collaboration with local housing authority • Create supported employment program in cooperation with Voc Rehab • Create DHS liaison resource
j) Behavioral health equity in service delivery	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Services provided under scope of an FQHC • Use of integrated electronic health record 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Regular communication with primary care providers • Access to options for coordinated care planning between mental and physical

	<p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Continue focus on integrative approach to health care services 	<p>health as well as AOD and children's services</p> <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Implement depression and anxiety screening (PhQ9 and GAD7) within the medical clinic and access to follow up services within the mental health programs. • Increase Behaviorist resources within medical clinic • Implement SBIRT within the clinic with f/u with AOD services as needed
k) Meaningful peer and family involvement in service delivery and system development	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Strong collaborative relationship with NAMI • Active Mental Health Advisory committee <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Continue to increase family involvement 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to subcontract with Oregon Family Support Network <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Develop Family Psychoeducation Group to support EASA program
l) Trauma-informed service delivery	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Well trained clinicians <p><u>Areas for Improvement</u></p>	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to provide Seeking Safety and DBT programming <p><u>Improvement Plan</u></p>

	<ul style="list-style-type: none"> • Working with Veterans 	<ul style="list-style-type: none"> • Arrange training for working with Vets with trauma
m) Stigma reduction	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Integrated lobby and waiting room • Use of paid consumer Peer Specialists <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Increase use of Person First Language • Supported Employment 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Person first language • Continue with current efforts <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Provide “Hearing voices” Group • Provide “No Exclusions” supported employment program
n) Peer-delivered services, drop-in centers and paid peer support	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • 6 part time paid Peer Specialists that provide groups and individual services to mental health clients and individuals served within the medical clinic <p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Expand Peer ER services 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Continue to provide Mindfulness Group, Hearing Voices Group etc. • Continue with current efforts <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Work with advisor to increase peer presence in the ER for both mental health and AOD diversion/support
o) Crisis and Respite Services	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Well established 7 day a week 24 hour per day crisis program 	<p><u>Maintenance of Strengths</u></p> <ul style="list-style-type: none"> • Phone-in, walk-in and mobile crisis response

	<p><u>Areas for Improvement</u></p> <ul style="list-style-type: none"> • Collaboration with Law Enforcement • Respite resources 	<ul style="list-style-type: none"> • County managed “Newlife Respite and Transitional Housing” program <p><u>Improvement Plan</u></p> <ul style="list-style-type: none"> • Identify Peer Support Specialist to work with crisis team to provide peer respite services at Newlife House
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Part II: Performance Measures

AMH will identify performance measures and provide baseline data for several of the measures as it becomes available. LMHAs are required to describe findings from any current data they have available in applicable areas, as well as describe a plan for addressing the performance measures in planning, development and delivery of services and supports.

1) Current Data Available		
Performance Measure	Data Currently Available	Current Measures (If available)
a) Access/Number of individuals served	CPMS DATA 2011	1859 total served
b) Initiation of treatment services – Timely follow up after assessments	ABHA/MHO DATA 3rd Quarter 2012	14% of clients served within two weeks of first appointment

c) Treatment service engagement – Minimum frequency of contact within 30 days of initiation	ABHA/MHO DATA 3rd Quarter 2012	10% of clients served 3 times within one month of first appointment
d) Facility-based care follow up - % of individuals with follow up visit within 7 days after (1) Hospitalization for mental illness; or (2) any facility-based service defined as residential	Benton County Records	100%
e) Readmission rates 30 and 180 day: (1) Hospitalization for mental illness; or (2) any facility-based service defined as residential	Not Available	
f) Percent of participants in ITRS reunited with child in DHS custody	Not Available	
a) Percent of individuals who	Not Available	

report the same or better housing status than 1 year ago.		
b) Percent of individuals who report the same or better employment status than 1 year ago.	Not Available	
c) Percent of individuals who report the same or better school performance status than 1 year ago.	Not Available	
d) Percent of individuals who report decrease in criminal justice involvement.	Not Available	
e) Stay at or below a target ADP of individuals for which the county is responsible in the state hospital psychiatric recovery program.	Current Data	At target
f) Maintain an average length of stay on the OSH	Current Data	At target

ready to transition list at or below a pre-determined target		
g) Each LMHA will complete a minimum of 80% of approved prevention goals and objectives.	Not Available	
2) Plans to Incorporate Performance Measures		
<p>a) Describe the LMHA plan to actively incorporate the performance measures into planning, development and administration of services and supports:</p> <p>We have met with Ben Kahn from AMH and our EHR vendor, OCHIN regarding seamlessly integrating COMPASS data into our EHR. We plan to continue work on this so we are able to provide a full set of data for the State and for our own performance monitoring. We are already certified as a tier 3 patient-centered primary care home and are meeting the reporting requirements for that certification as well as meaningful use standards.</p>		

Part III: Budget Information

Budget information includes planned use of all flexible funding included in the contract and planned use of beer and wine tax funds and funds specifically allocated for problem gambling services and prevention and substance abuse prevention.

1) General Budget Information

a) Planned expenditures for services subject to the contract:

Note: The following chart shows annualized State funding amounts based on the completed 2011-12 fiscal year as an estimate of funds available in annually in each year of the 2013-15 biennium. The first columns of the chart show how funding was used in FY 11-12 and the last 2 columns show proposed changes for annual expenditures in the 2013-15 biennium. These are estimates and are subject to change as the final planning is accomplished through completion of our Community Health Improvement Plan and based on any changes in allocations in the approved State budget. Revisions to this plan that will be submitted by July, 2013.

Service Element Name	11-12 Fiscal Year Amount	11-12 Fiscal Year Actual Spent by Service Type	13-15 Estimated Annual Amount by Service Element	Amount Allocated to Service by Type
Mental Health Services				
SE 1 – Local Administration	\$236,494.80	Health Dept. (HD) - \$236,494.80	\$236,494.80	Health Dept. (HD) - \$236,494.80
SE 20 – Non-Residential Adult MH Services	\$511,397.23	HD: \$511,397.23– Adult OP and ACT	Moves to flex fund	See SE 37
SE 22 – Child & Adolescent MH Services	\$124,166.99	HD: \$56,418.99 – Child/Youth OP/Wrap \$47,748 – Flex Svcs Old Mill: \$20,000 - Child/Youth OP	Moves to flex fund	See SE 37
SE 24 – Regional	\$1,451,995.68	MVBCN:	Moves to flex fund	See SE 37

Acute Psych Inpatient		\$1,451,995.68 - Regional Acute Care		
SE 25 – Community Crisis – Adult & Child	\$235,718.75	HD: \$175,680.75 - 24/7 Crisis Outreach Old Mill: \$10,000 – Crisis Next Day Appts. Jackson St: \$34,260 – Respite OFSN: \$15,778 – Family Support	Moves to flex fund	See SE 37
SE 26 – Non-Residential Youth Designated	\$570.00	Transport: \$570.00	Client Specific by need request	Client Specific by need request
SE 28 – Residential TX Services	\$1,195,053.10	Janus House, Renew and other Residential: \$1,195,053.10 - Res Care	\$1,195,053.10	Janus House, Renew and other Residential: \$1,195,053.10
SE 30 - PSRB TX and Supervision	\$25,030.57	HD: \$25,030.57 - PSRB TX and Supervision	Moves to flex fund	See SE 37
SE 34 – Adult Foster Care	\$384,962.70	Local Foster Care Providers: \$384,962.70	\$384,962.70 or as awarded	Local Foster Care Providers: \$384,962.70
SE 36 - PASARR	\$10,035.60	Psychmed Associates: \$10,035.60	\$10,035.60	Psychmed Associates: \$10,035.60
SE 37 – Special Projects	\$39,624.00	Shangri-La: \$39,624.00 – Residential home development	\$2,648,595.22	HD: \$511,397.23– Adult OP and ACT \$56,418.99 – Child/Youth OP/Wrap \$47,748 – Flex Svcs \$175,680.75 - 24/7 Crisis Outreach \$25,030.57 - PSRB TX and Supervision \$207,678.78 - Adult Addictions

				\$ 92,607.22 Youth Addictions \$30,000.00 – Mental Health Promotion MVBCN: \$1,451,995.68 - Regional Acute Care Jackson St: \$34,260 – Respite OFSN: \$15,778 – Family Support
SE 201 – Non-Residential Designated Services	\$43,213.43	Misc. individual supports: \$43,213.43	Client Specific by need request	Client Specific by need request
Addictions Services				
SE 66 – Continuum of Care Outpatient Addictions TX	\$300,286.00	HD: \$207,678.78 - Adult Addictions \$ 92,607.22 Youth Addictions	Moves to flex fund	See SE 37
Prevention Services				
SE 80 – Problem Gambling Prevention	\$29,230.00	HD: \$29,230.00 – Gambling prevention materials	?	?
SE 60 – A&D Special Projects	\$180,000.00	HD: \$180,000.00 – Health Promotion	?	?
SE 70 – Prevention Services	\$73,500.00	HD: \$73,500.00	\$73,500.00	HD: \$73,500.00

Review Criteria:

- Allocation matches goals for increased performance in areas needing improvement.
- Allocation reflects community needs assessment.

2) Special Funding Allocation

Area	Allocation/Comments	Review	
		Yes	No
a) Maintenance of Effort attestation for Beer and Wine Tax funding of addictions prevention and treatment services.	\$74,099 from Beer and Wine Taxes		
b) Use of lottery funds allocated for Problem Gambling prevention and treatment.	Gambling treatment funds for Benton Co. have been assigned to Linn Co. They provide our gambling addictions services. We have had some prevention funds in this area but it is not clear whether there will be any in the next biennium		
c) Use of funds allocated for alcohol and other drug use prevention.	\$73,500.00		

Additional Information (Optional)
a) What are the current/upcoming training and technical assistance needs of the LMHA related to system changes and future development?
*No review criteria

Definitions:

“Early Intervention” means clinical or preventive services for a person of any age that begin prior to or in the early stages of a mental health problem. Intervening with young children is included in this definition.

“Family” means a support person of any age identified as important to the person receiving services.

“Health Equity” means the attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to rectify historical and contemporary socially patterned injustices and the elimination of health disparities.

“Mental Health Promotion” means efforts to enhance individuals’ ability to achieve developmentally appropriate tasks (developmental competence) and a positive sense of self-esteem, mastery, well-being, and social inclusion

and to strengthen their ability to cope with adversity. There can be overlap between promotion and prevention efforts, depending on the population served and the target of the prevention activity.

“Mental Illness prevention” means intervening to minimize mental health problems by addressing determinants of mental health problems before a specific mental health problem has been identified in the individual, group, or population of focus, with the ultimate goal of reducing the number of future mental health problems in the population.

“Peer” means an individual who self-identifies as a consumer, survivor, ex-patient, recipient of services or person in recovery.

“Required Populations,” as defined in the Federal Block Grant, means:

- Children with Serious Emotional Disorders (SED)
- Adults with Serious Mental Illness (SMI)
- Persons who are intravenous drug users
- Women who are pregnant and have substance use and/or mental health disorders
- Parents with substance use and/or mental health disorders who have dependent children
- Persons with tuberculosis
- Persons with or at risk for HIV/AIDS and who are in addiction treatment

“Specialty Populations,” as defined in the Federal Block Grant, means:

- Adolescents with substance use and/or mental health disorders
- Children and youth who are at risk for mental, emotional and behavioral disorders, including, but not

limited to addiction, conduct disorder and depression

- Military personnel (active, guard, reserve and veteran) and their families
- American Indians/Alaskan Natives
- Persons with mental health and/or substance use disorders who are homeless or involved in the criminal or juvenile justice system
- Persons with mental health and/or substance use disorders who live in rural areas
- Underserved racial and ethnic minority and Lesbian, Gay, Bi-sexual Transgender or Questioning (LGBTQ) populations
- Persons with disabilities
- Community populations for environmental prevention activities, including policy changing activities, and behavior change activities to change community, school, family and business norms through laws, policy and guidelines for enforcement
- Community settings for universal, selective and indicated prevention interventions, including hard-to-reach communities and “late” adopters of prevention strategies

“Trauma-informed Services” means services that are reflective of the consideration and evaluation of the role that trauma plays in the lives of people seeking mental health and addictions services, including recognition of the traumatic effect of misdiagnosis and coercive treatment. Services are responsive to the vulnerabilities of trauma survivors and are delivered in a way that avoids inadvertent re-traumatization and facilitates individual direction of services.

The Health of Benton County

2012 Community Health Assessment

Introduction and Overview	1
A Framework for Assessing Health	3
Benton County: People and Place	7
Population Overview	7
Demographics: Population by Age and Sex	9
Immigration and Growing Diversity	10
Physical Environment	16
Environmental Hazards	17
Waste Management	20
Opportunities for Health	21
Education and Employment	21
Income and Poverty	24
Housing and Home Ownership	29
Outdoor and Indoor Environments	30
Community and Personal Safety	36
Access to Medical Care	38
Healthy Living Indicators	41
A Healthy Start for Children	41
Childhood and Youth Experience	45
Mental and Emotional Health	48
Physical Activity and Nutrition	49
Alcohol, Tobacco, and Prescription Drug Abuse	52
Preventing and Managing Chronic Disease	58
Disease Prevention	60
Disease and Injury	63
Leading Causes of Death in Benton County	63
Chronic Disease and Conditions	64
Heart Disease and Stroke	68
Obesity	72
Alzheimer’s disease	73
Arthritis	73
Asthma	73
Mental Health Conditions	76
Infectious Diseases	77
Injury and Violence	81
Suicide	85
Preventing Falls	86
Abuse among Vulnerable Adults	87

Conclusion: Meeting Challenges with Strengths	89
Appendices.....	91
Benton County Community Assessment Partnerships and Acknowledgements	119
Endnotes	123

Introduction and Overview

Benton County's 2012 Community Health Assessment (CHA), the first of its kind in over 10 years, provides an overview of the current health of Benton County.

The CHA synthesizes nine months of assessment and data collection conducted by Benton County Health Department in collaboration with numerous community leaders and other agency and organizational partners during 2012.

The World Health Organization defines health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”¹ Health is not just about individuals, but includes families, communities, and systems, and is a result of the interaction of complex networks of conditions and factors. Health starts long before illness occurs and is impacted by where and how we live, learn, work and play.

The CHA incorporates this definition of health by describing a wide array of information about the conditions and factors affecting people's health in Benton County as well as indicators of health status.

Assessment Goals and Objectives

Benton County's Community Health Assessment (CHA):

- Describes the health status of Benton County.
- Defines areas for health improvement, with a focus on identifying health inequities; and
- Identifies organizational and community assets that can be mobilized to improve health for the entire county.

In turn, CHA data informs:

- Community and organizational decision making.
- Prioritization of health problems.
- Development, implementation, and evaluation of a Community Health Improvement Plan.

This process has included:

- Engaging communities and partners within the county including those facing significant barriers to better health in the process of issue identification, data collection, interpretation of data, and dissemination of results.
- Synthesizing existing smaller assessments; identifying areas in which more information is needed; and conducting additional targeted assessments to address gaps.
- Identifying health needs and assets that will inform processes underway, including the Public Health Improvement Plan, Health Services' strategic planning, United Way needs assessment, public health accreditation application, and health care transformation initiatives, among others.

Report Organization

The CHA is presented in five chapters:

Chapter 1: Introduction and Overview of Methodology

Chapter 2: Benton County: People and Place, who we are and our natural environment; the people of the county; and the air, water and land that surrounds us

Chapter 3: Opportunities for Health in Benton County, the social, economic, and community factors that have influence health

Chapter 4: Healthy Living in Benton County, the ways in which individuals and communities act to protect and improve health

Chapter 5: Chronic Disease and health outcomes related to disease and injury

Collaboration and Partnerships

Benton County has a strong history of promoting collaborative approaches to gathering and interpreting health data. Benton County's Community Health Assessment (CHA) process has engaged a diverse array of community leaders and other agency and organizational partners, community coalitions, advisory groups, and grassroots consumer initiatives, with a strong focus on engaging community members facing significant barriers to better health.

Limitations

While the CHA identifies many critical issues pertaining to community health, it is not inclusive of all health-related issues. As a result, it should not be considered a formal study or research document investigating the causes of each issue raised or providing a detailed analysis of the data. In many cases, data are not available at the county level, or data are not stratified by race/ethnicity, income, education level, zip code, etc.

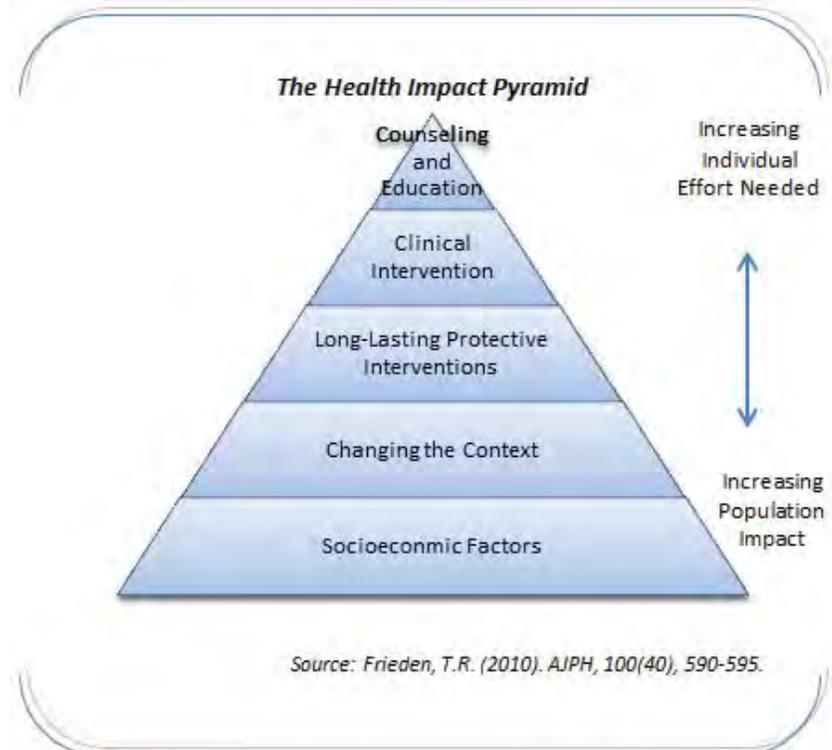
When race/ethnicity data are gathered, analysis may be further limited due to a lack of data stratification by more specific racial categories, such as U.S-born vs. Foreign-born for the Latino population, or the many ethnicities and cultures represented in the category of Asian-Pacific Islander. In other cases, especially when it comes to understanding the interactions of the many factors that contribute to health, data are lacking in part because the theoretical models are still being developed.

The need for more detailed local data is one outcome of this assessment. As local partners continue to gather information to inform their practices and services, it is important to collect demographic data (i.e. zip codes, level of education, etc.) so that more accurate information can be used to inform future community health improvement planning and other public health initiatives.

A Framework for Assessing Health

Health is a product of many conditions and factors. Nationally and internationally, a growing body of research reveals how conditions and social and economic opportunity determine health outcomes.²

The Health Impact Pyramid.³ serves as a framework for Benton County's CHA process. This model provides guidance for a comprehensive public health approach to community assessment and program development across multiple domains of behavioral influence. In this 5-tier pyramid, efforts to address socioeconomic determinants are at the base, followed by public health interventions that change the context for health (e.g., smoke-free laws, safe parks, bike lanes), protective interventions with long-term benefits (e.g., immunization, smoking cessation), direct clinical care, and at the top, counseling and education. In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact.⁴ A similar model, called the ecological or social ecology model, is used in a variety of practice fields in order to better understand the larger forces that impact individuals.⁵



The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of *Healthy People*, the national agenda for health developed by the U.S. Department of Health and Human Services.

This framework aligns with the factors that the U.S. Department of Health and Human Services cite as influencing the development of healthy communities:

“A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, and play within their borders- where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.”

The factors described above inform the selection of indicators Benton County used to describe the health of Benton County residents, the neighborhoods in which they live and the factors that most impact their well-being. Finally, Benton County consulted the following state and national resources for guidance in the development of this community health assessment, including: Oregon Health Authority technical reports (e.g. health equity⁶, asthma⁷, chronic disease⁸); the Centers for Disease Control and Prevention’s data set directory of social determinants of health at the local level⁹; King County’s Equity and Social Justice Annual Report¹⁰; and the Statewide Health Assessment of Minnesota¹¹.

Healthy People 2020 Overarching Goals

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all
- Promote quality of life, healthy development, and healthy behaviors across all life stages

Source: U.S. Department of Health and Human Services, Healthy People 2020 Framework

Methodology

One of only four counties in Oregon with a public health epidemiologist and only one of three that maintains a comprehensive Population Health Unit, Benton County maintains a robust, publicly available county-wide health status report and regularly conducts targeted assessments that explore unmet needs of diverse priority populations.

Benton County's 2012 Community Health Assessment incorporates data from four major data sources, which combined provides a comprehensive picture of the health of Benton County.

1. Benton County Health Status Report

Updated annually, this publically accessible, web-based report synthesizes currently available health data specific to Benton County as well as other measures of community health. See http://www.co.benton.or.us/health/health_status/index.php to access the most current report. It is important to note that the Health Status Report (HSR) and the 2012 Community Health Assessment (CHA) are two, distinct resources. The CHA is not exhaustive and more detail is available by looking at source data available through the HSR.

2. Targeted Needs Assessments

Benton's County's 2012 Community Health Assessment summaries over 20 key qualitative and quantitative county-wide and targeted assessments conducted by Benton County Health Department in collaboration with other key community partners over the last five years. These targeted assessments help to better describe the health issues that affect uninsured/low-income, minority, and other priority populations that often are not captured through other standard data collection efforts.

3. Community Opinion Survey

To ensure input by the broader public, Benton County conducted an online, electronic survey to gather input on the highest priority health needs in the county. The survey was made available in both English and Spanish and disseminated widely. Hard copy, paper versions were also distributed for those without access to the internet access or who preferred a written format. Some participants also responded to the survey via electronic voting clickers at community meetings, group presentations, and town halls (see below). In total, 453 surveys were completed.

4. Community Meetings, Group Presentations, and Town Halls

Over the course of the assessment process, Benton County shared an informational PowerPoint presentation with over 30 community groups and citizen coalitions. These presentations covered information about county health status, priority populations, and existing assets and challenges. Benton County solicited additional feedback through electronic voting clicker surveys and group discussions, further engaging participants in the CHA process, and setting the stage for future work on Community Health Improvement Planning (CHIP).

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Chapter 2

Benton County: People and Place

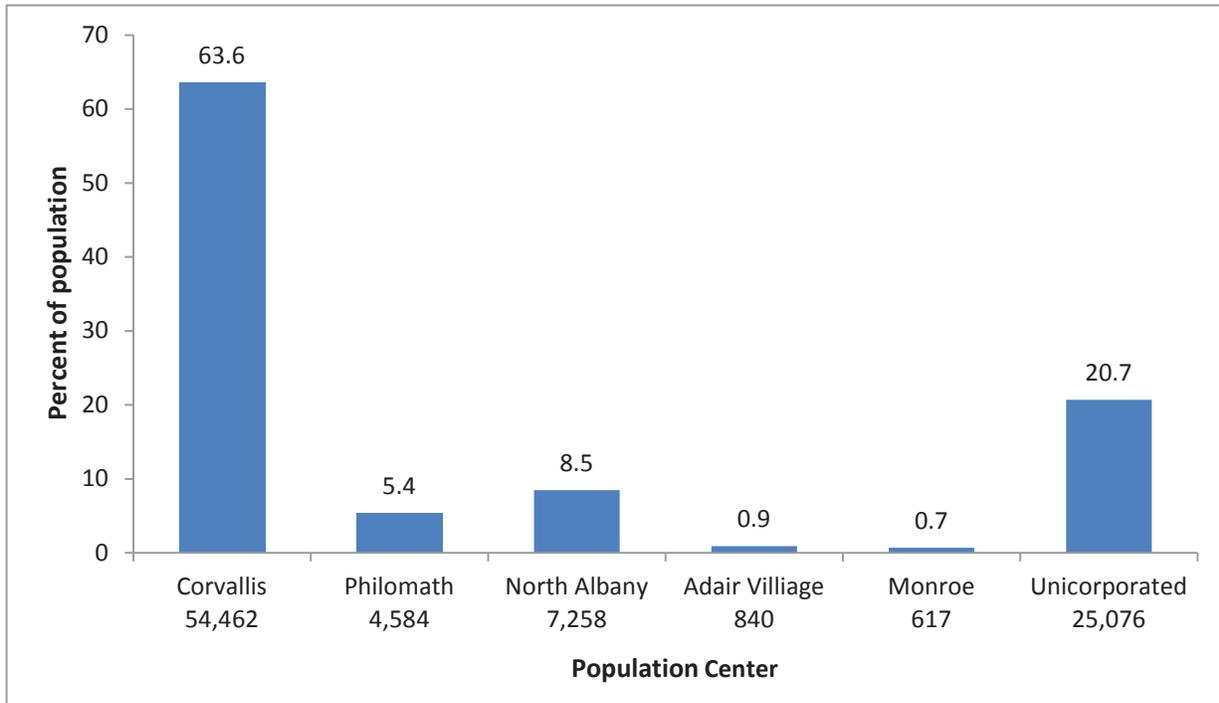
Benton County's rich agricultural and forest land, mountains, valleys, rivers and wetlands are highly prized economically, culturally, recreationally, environmentally and aesthetically. The residents of Benton County value the rural amenities that characterize much of the county. The county's clean air, water and healthy natural systems are important assets, sustaining a high quality of life for current residents, visitors and future generations.

Population Overview



Benton County is home to 85,579 residents. Population centers are Corvallis (pop. 54,462), North Albany (pop. 7,258), Philomath (pop. 4,584), and the small incorporated townships of Monroe (pop. 617) and Adair Village (pop. 840). Another 25,076 people live in unincorporated communities, farms and rural residences throughout the county. Nearly two-thirds (63.6 percent) of Benton County residents live in Corvallis and one-fifth (20.7 percent) live in unincorporated areas.

Benton County population by population center, 2010



Source: Benton County Health Status Report, 2012

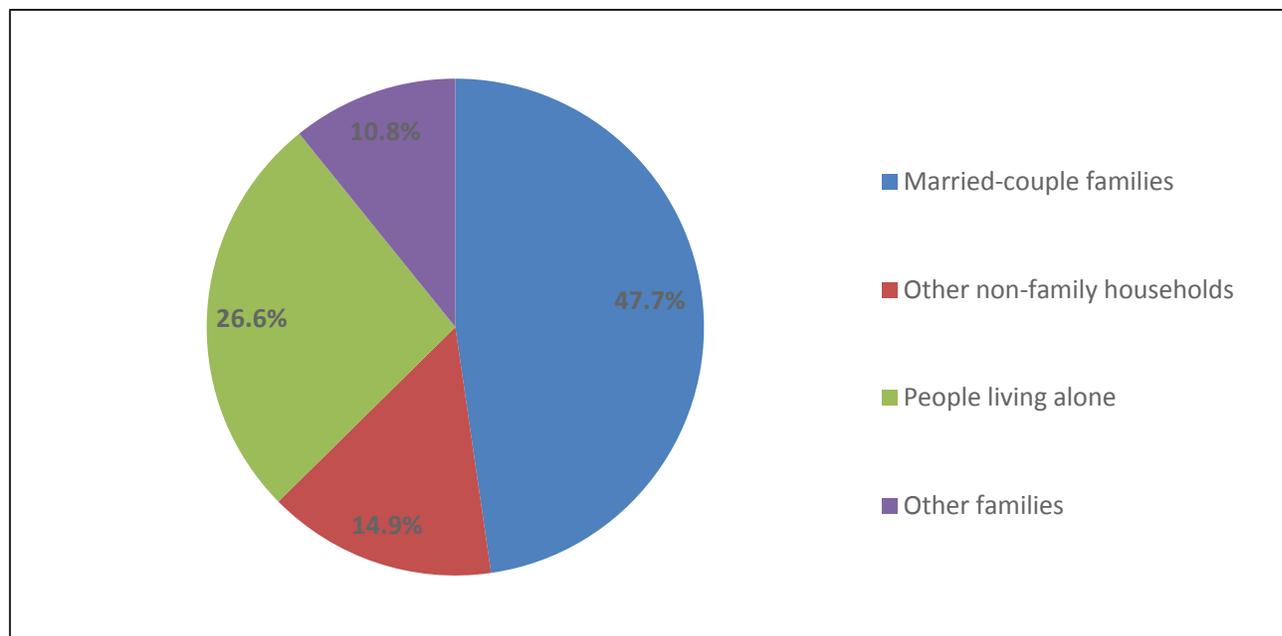
There are 33,000 households in Benton County, Oregon. The average household size is 2.5 people.

Families make up 59 percent of the households. This figure includes both married-couple families (48 percent) and other families (11 percent). Among other families, 6 percent are female-headed including children under 18 years of age, with no husband present.

Nonfamily households make up 42 percent of all homes in Benton County. Most nonfamily households are composed of people living alone, but some are people living in households in which no one is related to the head of household.

In Benton County, 26 percent of all households have one or more people under the age of 18; 23 percent of all households have one or more people 65 years and over.

Types of households in Benton County, 2011



Source: American Community Survey, 2011

Among persons 15 years of age and older, 44 percent of males and 46 percent of females are currently married.

Marriage status in Benton County, 2011

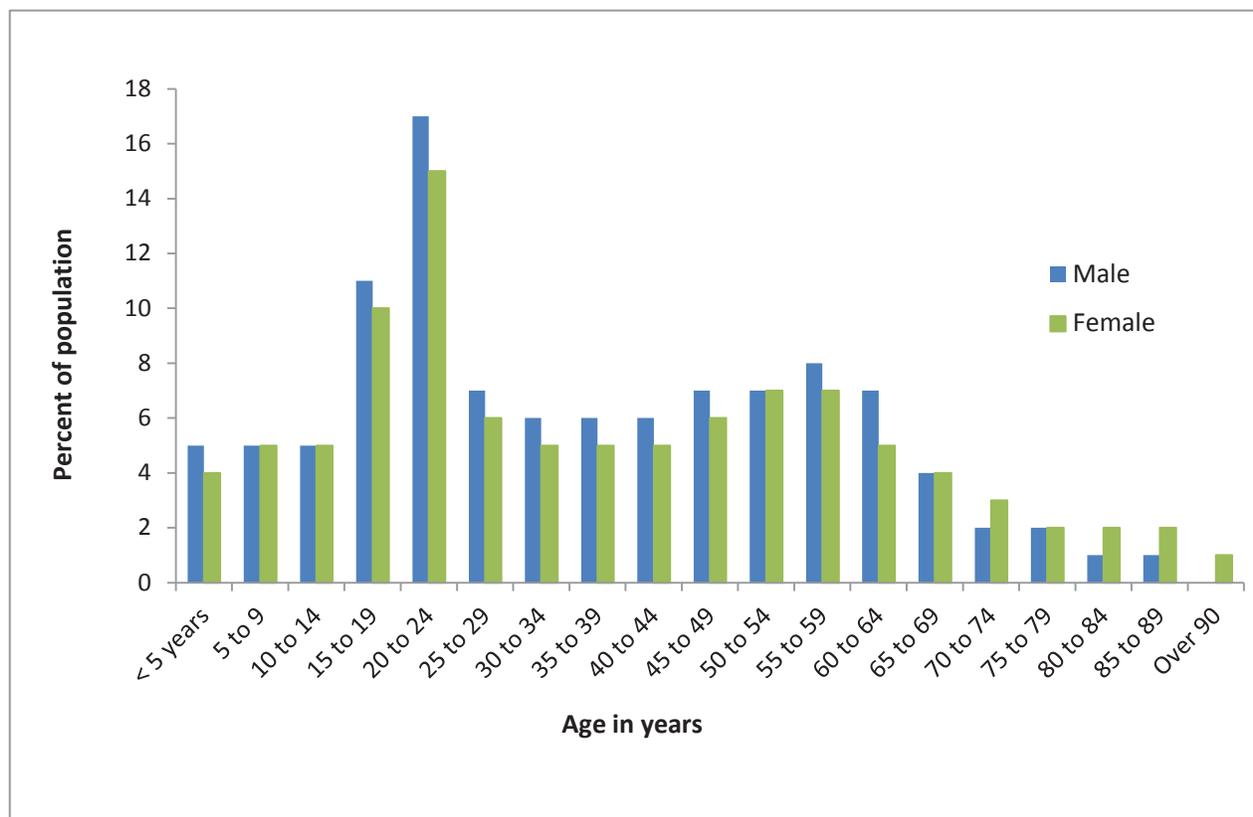
Population 15 years and over	Males	Females
Never married	45.7	37.0
Married but separated	43.7	46.2
Separated	1.3	1.5
Widowed	1.4	5.1
Divorced	7.9	10.2

Source: American Community Survey, 2011

Demographics: Population by age and sex

Based on 2010 U.S. Census data, the percentage of males and females is about the same in most age groups. The 15-19 and 20-24 year age groups are among the largest. This may be due to students attending post-secondary institutions in our region (such as, Oregon State University, Linn-Benton Community College, and Western Oregon University) Overall, from 2000 to 2010, the Benton County population has grown 9.5 percent from 78,153 to 85,579.

Benton County age composition, 2008-2010



Source: Benton County Health Status Report, 2012

Immigration and Growing Diversity

Native and Foreign Born

Ninety percent of the people living in Benton County are native residents of the United States. Forty-three percent of these residents are living in the state in which they were born.

Ten percent of the people living in Benton County are foreign born. Of the foreign born population, 28 percent are naturalized U.S. citizens, and 42 percent have entered the country before the year 2000. Fifty-eight percent of the foreign born entered the country in 2000 or later.¹²

The largest racial minority group in Benton County is Asian and Pacific Islanders (5.4 percent). Benton County's Asian population increased 37.2 percent since 2000. The largest population by ethnicity in Benton County is Hispanic/Latino (6.4 percent). In 2010, the Latino population increased 50 percent from 2000. Oregon's population is slightly more diverse than Benton County's.

Population by race/ethnicity, 2008-2010

Race/Ethnicity	Benton County		Oregon	
	Total population	Percent	Total Population	Percent
White	74,506	87.1%	3,204,614	83.6%
Asian and Pacific Islander	4,642	5.4%	186,281	4.0%
Two or more races	3,060	3.6%	144,759	3.8%
Other	1,985	2.7%	204,625	5.3%
Black	759	0.9%	69,206	1.8%
American Indian	627	0.7%	53,203	1.4%
Hispanic	5,467	6.4%	450,062	11.7%

Source: U.S. Census, 2012

K-12 population

Benton County has four K-12 public School Districts. In 2011, Alsea School District had a total of 134 students with a minority population of 5.2 percent; Corvallis School District had a total of 6,364 students with a minority population of 28.1 percent; Monroe School District had a total of 479 students with a minority population 19.4 percent; and Philomath School District had a total population of 1,631 and a minority population of 11.0 percent.

It is notable that minority school enrollment exceeds overall population percentages in all districts. The percentage of ethnic or racial populations varies greatly among Corvallis School Districts' elementary schools.

Corvallis School District elementary school student population by race/ethnicity, 2010

Elementary School	White	Black	Hispanic	Asian Pacific Islander	American Indian/Alaskan Native	Multi Ethnic	Total Minority
Adams	81.3%	0.6%	4.4%	7.7%	0.0%	6.1%	18.7%
Franklin	68.0%	0.6%	9.3%	12.5%	0.0%	9.6%	32.0%
Garfield	40.7%	1.6%	47.6%	2.1%	1.6%	6.4%	59.3%
Hoover	67.4%	0.5%	4.4%	19.1%	0.0%	8.7%	32.6%
Jefferson	81.8%	0.0%	6.1%	5.4%	1.0%	5.8%	18.2%
Lincoln	55.8%	0.9%	37.1%	0.9%	0.9%	4.6%	44.3%
Mt View	79.9%	1.9%	7.0%	1.6%	2.6%	7.0%	20.1%
Muddy Creek	92.6%	0.0%	1.2%	0.0%	2.5%	3.7%	7.4%
Wilson	74.5%	1.2%	11.6%	4.9%	0.3%	7.5%	25.5%

Source: Oregon Department of Education

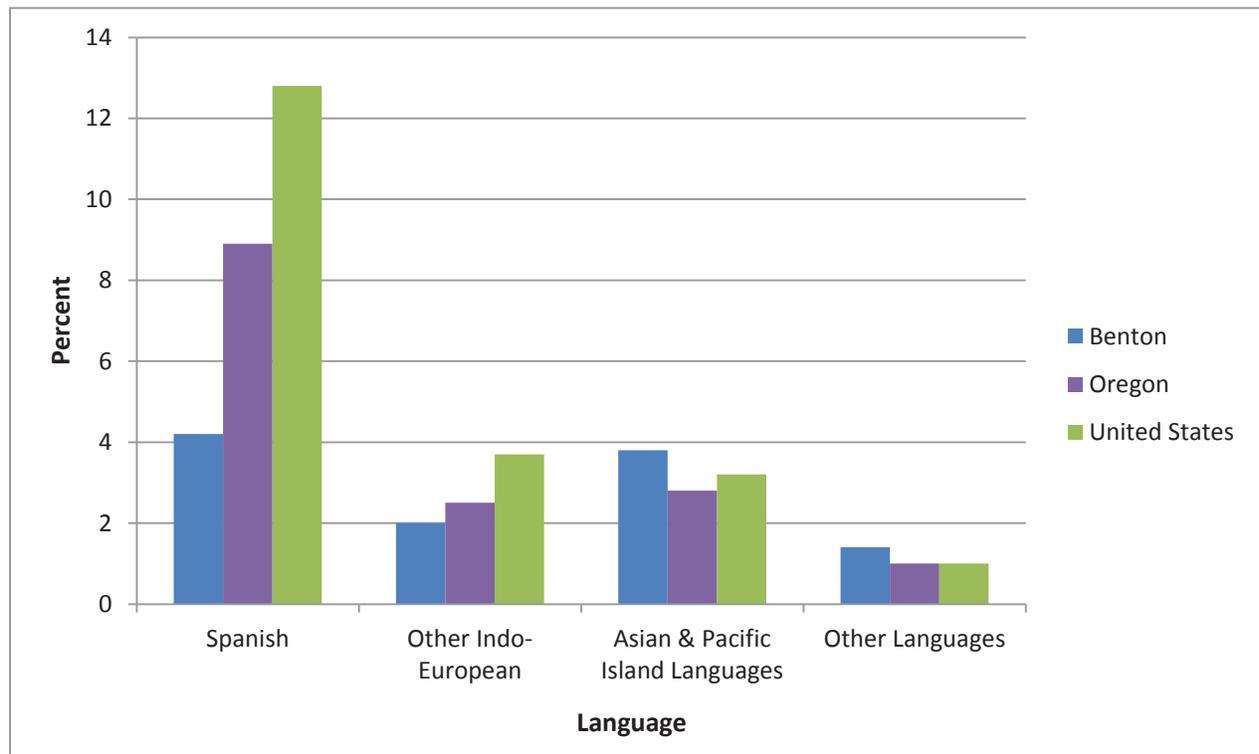
Benton County has five private schools: Ashbrook Independent School, a K-8 with 164 students; Corvallis Montessori School, a K-6 with 110 students; Corvallis Waldorf School, a K-8 with 137 students; Santiam Christian School, a K-12 with 654 students; and Zion Lutheran School, a K-9 with 142 students.

Language spoken at home

Among people at least 5 years old living in Benton County, Oregon in 2008-2010, 11 percent spoke a language other than English at home. Of those speaking a language other than English at home, 38 percent spoke Spanish and 62 percent spoke some other language; 28 percent reported that they did not speak English “very well”.

In comparison, 15 percent of Oregon and 21 percent of U.S. residents at least 5 years old speak a language other than English in the home.

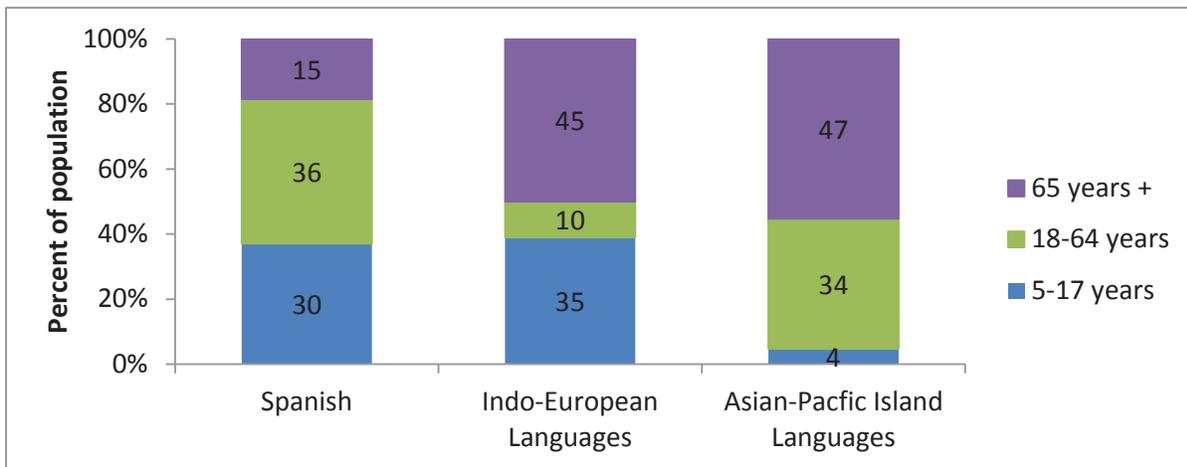
Percentage of the population 5 years and over who speak a language other than English, 2009-2011



Source: U.S. Census Bureau, American Community Survey

Within Benton County, approximately 20 percent of households speaking Spanish or an Asian Pacific Island language do not have anyone age 14 and over who speaks English only or speaks English “very well”.

Percentage of Benton County residents who speak another language and speak English less than “very well”, 2008-2010

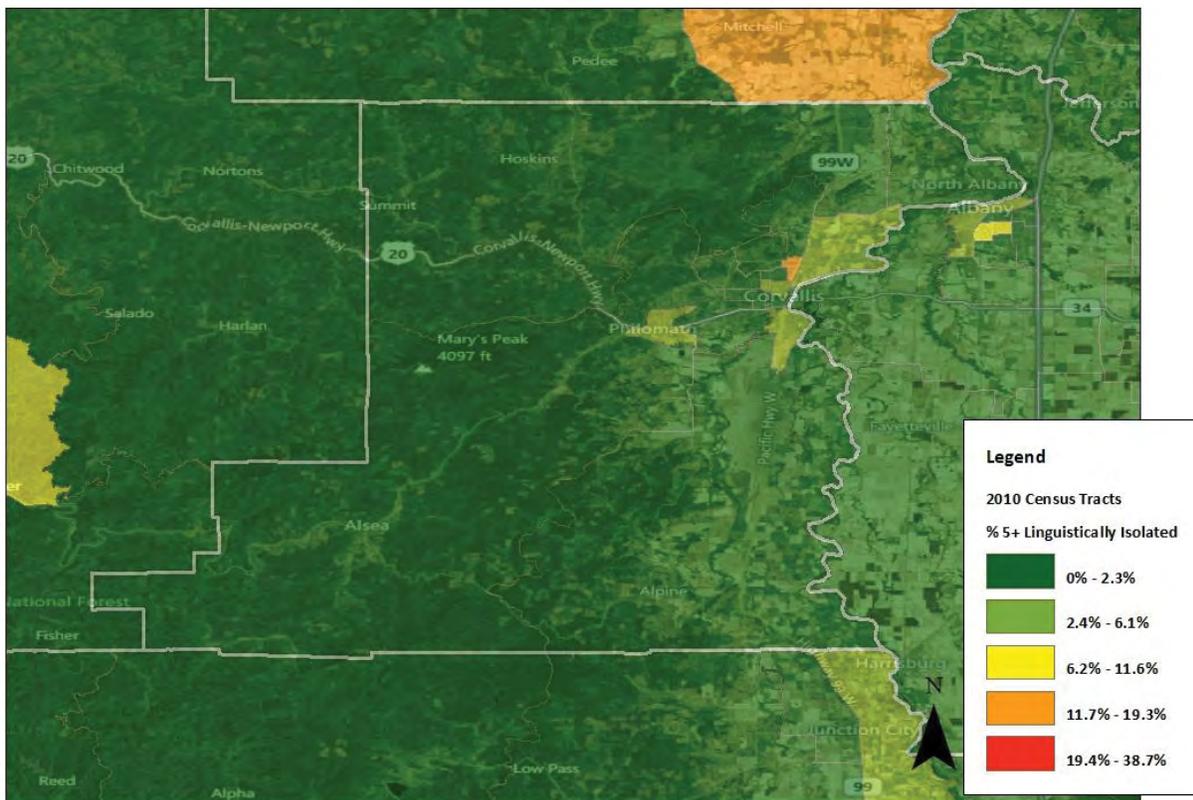


Source: U.S. Census Bureau, 2008-2010 American Community Survey

As shown in the map below, many of the families with limited English ability are clustered within Corvallis. However, within Philomath approximately 2.4-6.1 percent of households have limited English ability.

**Benton County, Oregon 2006-2010
Linguistic Isolation by Census Tract**
(People age 5+ who live in households in which no one over the age of 13 can speak English very well)
Source: 2006-2010 American Community Survey, US Census Bureau

Map created by:
Lena Etuk
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10/16/2012



Disabilities

In 2011, among the civilian non-institutionalized population, approximately 10.5 percent reported a disability¹³ in Benton County. The likelihood of having a disability varied by age - from 7.1 percent of people under 18 years of age; 8.3 percent 18 to 64 years of age; and 33.7 percent of those 65 and over.¹

The percentage of Benton County population with a disability by ethnicity or race is: white 11.1 percent; Asian 3.5 percent; and Hispanic/Latino 5.3 percent.¹

Benton County disability characteristics of population 5+, 2008 – 2010

Total civilian non-institutionalized population	10.5%
With a hearing difficulty	4.0%
With a vision difficulty	1.4%
With a cognitive difficulty	4.5%
With an ambulatory difficulty	5.3%
With a self-care difficulty	2.1%
With an independent living difficulty*	3.9%

Source: U.S. Census Bureau, 2008-2010 American Community Survey

** includes only population 18+*

In addition, 453 persons (324 adults; 129 children) with Developmental Disabilities enrolled in case management with Benton County Developmental Disabilities Services.¹⁴

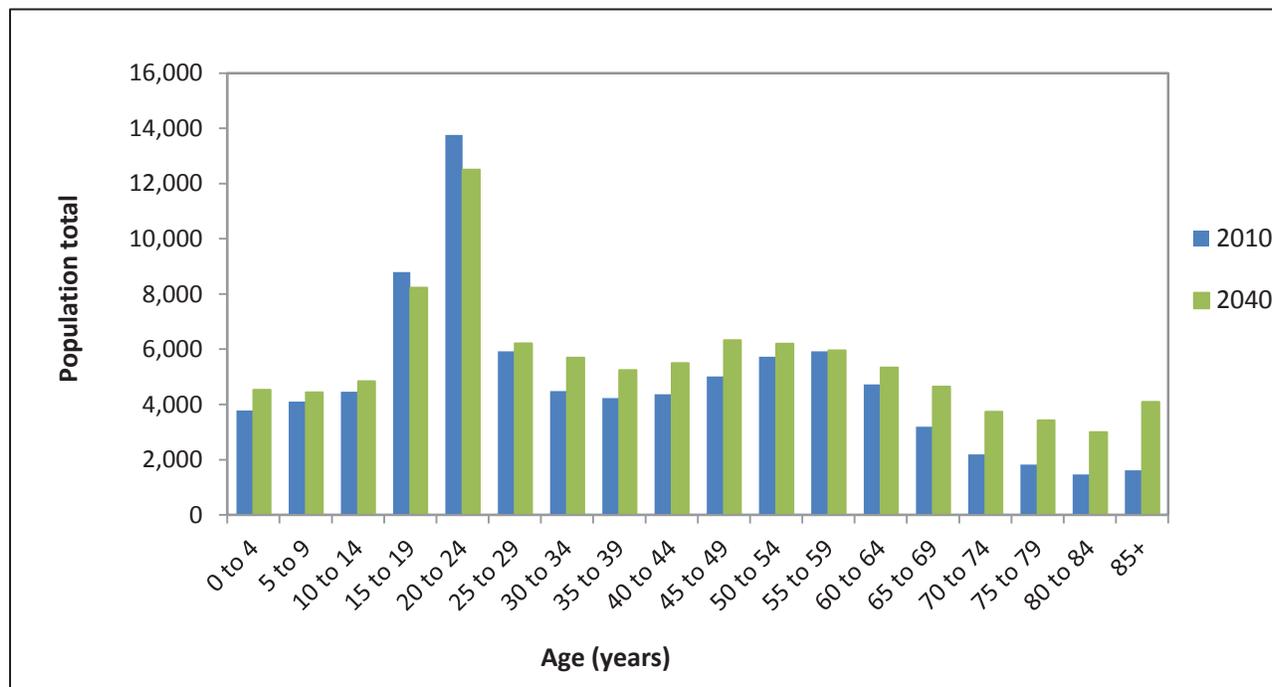
Aging Population

Currently, 12 percent of Benton County residents are 65 and older. This proportion is expected to increase. Based on Portland State University population estimates, all age groups will grow but the largest increase in the Oregon population will occur in the 65 years and older age group. The same is true in Benton County where the largest increase is projected to be among those 65 years and older. The Benton County population also is projected to grow in all age groups except for those 15-24 years of age.

Characteristics of Benton County adults over 65 years of age:

- 33.7 percent have a disability
- 29.9 percent live alone
- 4.5 percent live below poverty level
- 2.5 percent reside in Nursing Homes

Benton County population forecast 2010 and 2040



Source: Portland State University Population Research Center

Oregon State University student population

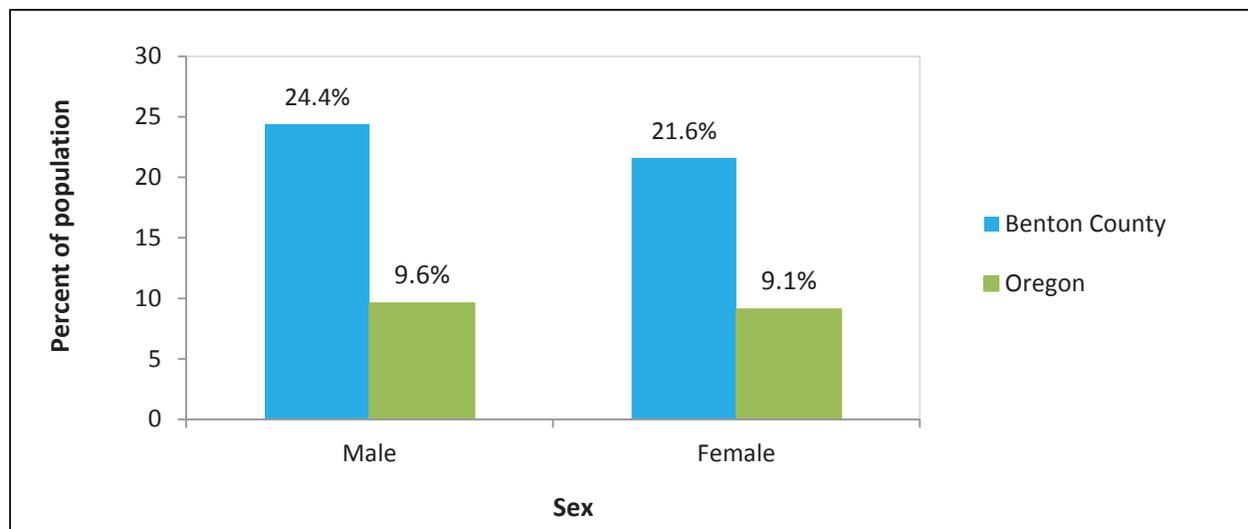
OSU's fall 2012 enrollment is 24,977 undergraduate (82 percent) and graduate students (18 percent) from throughout Oregon and all 50 states, as well as 1,852 international students from over 100 foreign nations. Only 4,316 (17.3 percent) of OSU students live in on-campus residence halls.

Approximately 84 percent of OSU undergraduate students are age 24 and younger, while 16 percent of undergraduates are 25 years or older.

Many undergraduate students receive financial assistance to cover educational and living costs. In 2010-2011, 22 percent of OSU undergraduate students received a Federal Pell Grant and 57 percent received a student loan (\$11,996 on average). On average, 56 percent of need was met for full-time undergraduates¹⁵.

The 2011 enrollment at OSU increased 8 percent for the second year in a row and 2012 enrollment growth is projected to be close to 5 percent. The ongoing growth of the student body has put strain on the university and the community, resulting in larger class sizes and an extremely low rental vacancy rate in Corvallis.

18-24 year old population, 2010



Source: Benton County Health Status Report, 2012

Physical Environment

The total land area of Benton County is 679 square miles. Geographically it is the third smallest county in Oregon. Benton County has two distinct ecological regions, the Coast Range and the Willamette Valley. Benton County has many natural resources, including agricultural, forest, rivers and water-ways.

Water Quality

Seventy-eight percent of Benton County residents get their drinking water from a total of 75 public water systems. Benton County Environmental Health in conjunction with the State of Oregon Drinking Water Services administers and enforces drinking water quality standards for public water systems in Benton County. This includes prevention of contamination through source water protection, providing technical assistance to water system operators and providing water system operator training.

Drinking water for residents of the City of Corvallis comes from two surface water sources. Three creeks in the Rock Creek Watershed on the east flank of Mary's Peak (north and south forks of Rock Creek as well as Griffith Creek) supply water for the Rock Creek Water Treatment Plant. The Willamette River supplies the Taylor Water Treatment Plant located in south Corvallis near Willamette Park. Laboratory professionals take samples regularly from 33 sampling stations and from the eight reservoirs. During 2011, Corvallis drinking water met or exceeded all federal and state drinking water standards.

The City of Philomath produced 156.5 million gallons of drinking water in three facilities. Approximately 95 percent came from the treatment plant. Philomath drinking water meets or exceeds all federal and state drinking water standards.

A significant number of Benton County households are located outside of the service areas of municipal water systems. Rural residents rely upon groundwater supplied through private wells (exempt use) to meet their household and irrigation needs. There are approximately 10,000 wells in Benton County.

The Oregon Department of Environmental Quality has designated parts of Benton, Linn, and Lane Counties as a Ground Water Management Area (GWMA) due to elevated nitrates. The purpose of the GWMA is to conduct research, raise awareness about the health risk associated with elevated nitrates, and to put into place voluntary programs to reduce nitrate levels in ground water. For more information on the GWMA go to their website at: <http://www.deq.state.or.us/wq/groundwater/swvgwma.htm>

Environmental Hazards

Domestic Sewage Systems

The majority of waterborne disease outbreaks are caused by bacteria and viruses present in domestic sewage. Septic tanks contribute the largest volume of wastewater to the subsurface and are the most frequently reported cause of groundwater contamination.

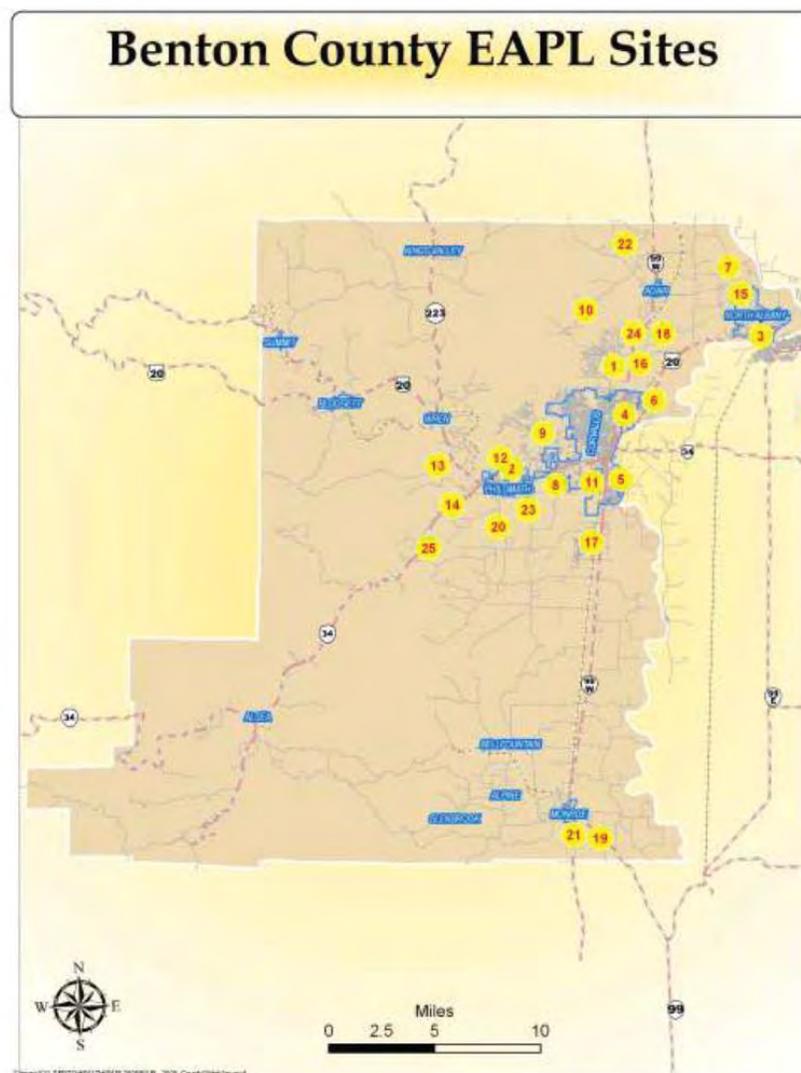
The 2010 Environmental Assessment Priority List (EAPL) describes areas and conditions that have the potential to cause contamination from domestic sewage systems and strategies by which the County intends to deal with the environmental conditions that might affect the health of the community. The sites and projects are prioritized to make the best use of limited County resources.

Benton County's EAPL describes 25 known or suspected health hazards or environmental problems areas. The list is not intended to be all inclusive. Rather, conditions are placed on the list if they have potentially serious impacts on the surrounding community, and the best solution is not known or may require significant time and resources. Generally the full extent and severity of the conditions on the list are unknown and effective management or control of them may not be possible through established programs and environmental permits.

Health risks are higher in areas where older, failing septic systems discharge untreated or partially treated sewage onto the ground surface or into groundwater, potentially contaminating nearby streams and wells.

The criteria for ranking include:

- **Housing Density.** The U.S. Environmental Protection Agency has designated areas with septic tank densities of greater than 40 systems per square mile (1 system per 16 acres) as regions of potential groundwater contamination.
- **Year Built.** Houses built prior to the 1974 Oregon Department of Environmental Quality (DEQ) regulations may be prone to failure or operating less-than-optimally, which can lead to water quality degradation.
- **Soil Type.** Currently site-specific soil evaluations are conducted by Benton County Environmental Health to test soil suitability. Older systems may have been built with less stringent condition for soil suitability.
- **Riparian Area.** Riparian areas are more sensitive to impacts from poorly sited and improperly functioning septic systems, which leads to potential surface water and groundwater contamination. A set-back of 50 to 100 feet from surface waters such as rivers, streams, and lakes protects from a threat of contamination.



Leaking Underground Storage Tanks

Oregon's Leaking Underground Storage Tank Program is part of the Department of Environmental Quality's Land Quality Division. This program handles issues related to cleanup of soil and groundwater contamination from spills and releases from regulated underground storage tanks, contractors working on cleanup of soil and groundwater contamination, and enforcement of state and federal rules. Benton County has 82 sites in active cleanup that have reported releases from petroleum-containing underground storage tanks, including residential heating oil tanks, regulated tanks at gas stations and other commercial facilities, and non-regulated tanks.¹⁶

Environmental Clean-up Sites

Benton County has 68 environmental cleanup sites listed on the Environmental Cleanup Site Information (ECSI) with known, suspected or cleaned up hazardous substances on the confirmed release list for 2012. The ECSI list database provide a tracking and historical information dating back to the 1980's. Sites in the ECSI comprise a wide variety of sizes, location, features, contaminant profiles and degrees of Cleanup Program information.¹⁷

The ECSI list includes the United Chrome Products Superfund site. The site is a former chrome-plating facility three miles south of Corvallis Airport Industrial Research Park. Extensive cleanup began in 1987. The site is included in the Corvallis Airport's 20-Year Master Plan, and is zoned for general industrial use. Airport planners see the site as a prime location for additional fuel storage in the future.

Benton County has eight sites on the Oregon DEQ's Confirmed Release List, a formal process in which DEQ notifies site owners and operators of DEQ's proposal to list. The release has been documented by qualified observation, owner/operator admission or laboratory data.

Air Quality

High levels of fine particles and ozone can decrease lung function, trigger asthma attacks and increase emergency department visits.

The Oregon Department of Environmental Quality, through its Air Quality Surveillance Network, monitors air quality throughout Oregon. In Benton County, air sampling is conducted at a single monitoring station in Corvallis, located at Corvallis Fire Station #3. Benton County currently meets all federal ambient air quality standards. In 2007, there were 21 unhealthy air quality days due to fine particulates and zero unhealthy days for ozone.¹⁸

Waste Management

Coffin Butte Landfill is owned and operated by Valley Landfills, Inc. The municipal solid waste landfill is located approximately ten miles North of Corvallis. The landfill services four counties. Benton County Environmental Health administers the County's franchise agreement with Coffin Butte Regional Sanitary Landfill and Treatment Facility with input from the Solid Waste Advisory Council. As part of Subtitle D, the Environmental Protection Agency (EPA) has developed detailed technical criteria for solid waste disposal facilities, including specific criteria for municipal solid waste landfills. The Coffin Butte landfill is currently in compliance with Oregon Department of Environmental Quality requirements. The total site area is about 700 acres and the landfill footprint is about 100 acres of which approximately 50 acres is currently filled or being filled. Coffin Butte accepts wastes from Benton County's transfer sites and commercial haulers.¹⁹

Coffin Butte Landfill has permitted airspace of 39,594,002 cubic yards (including consumed). During 2011, the landfill accepted 482,951 tons of solid waste. Based on historical aerial fly-over data, the average effective density of the in-place waste at the Coffin Butte Landfill is 1.0375 tons/cubic yard. Therefore, an estimated 465,495 cubic yards of airspace was used for the year. A total of 14,786,284 cubic yards has been consumed as of December 31, 2011.

The remaining capacity for the entire permitted landfill footprint as of the end of 2011 was approximately 24,807,718 cubic yards. This information is updated annually with aerial flyovers. Using 0.80 tons/cy, the remaining available landfill space expressed in tons is about 19,846,174 tons. Using the current disposal rate of approximately 500,000 tons per year, there are about 39.69 years of landfill space available at a compaction rate of 0.80 tons/cubic yard.

Chapter 3

Opportunities for Health

Opportunities for health among Benton County residents begin within their homes, neighborhoods, places of worship, workplaces, and schools. A growing body of scientific research shows that all people benefit when communities invest in health.

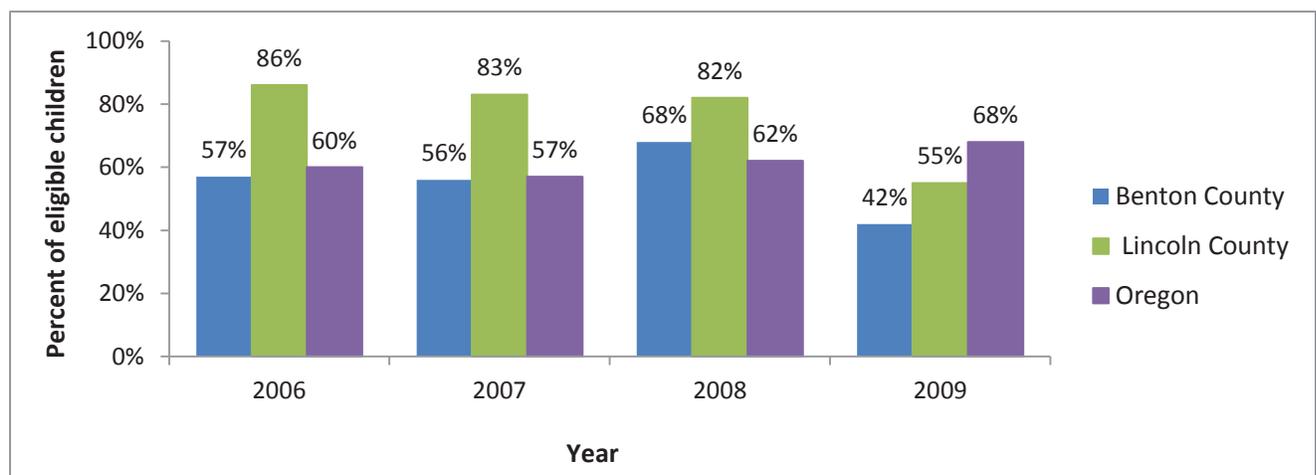
Education and Employment

Education

Health and learning are closely connected. Education is an important predictor of health because it both shapes and reflects multiple factors that affect people’s life options and opportunities.

Early Childhood Development supports nurturing relationships and learning opportunities that foster children’s readiness for school. The early years are crucial for influencing health and social well-being across a child’s lifetime.²⁰ Research evidence accumulated over the past 40 years supports the conclusion that children who participate in high-quality early childhood development (ECD) programs benefit from a broad range of immediate and long-term health benefits.²¹

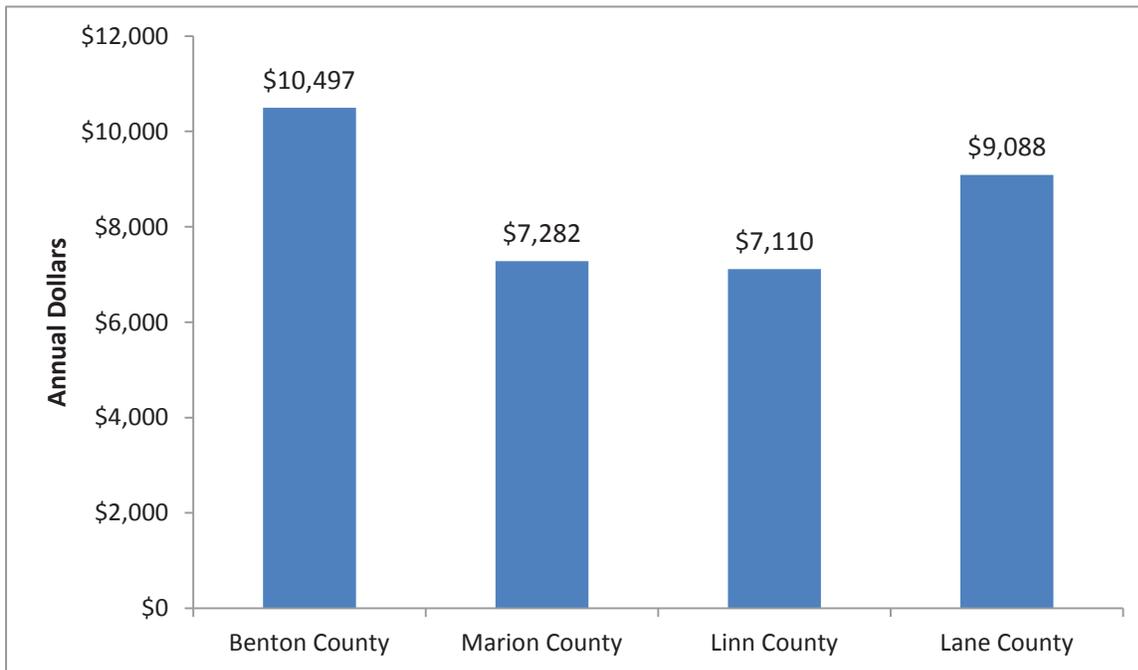
Percent of eligible children served by Head Start or the Oregon Pre-kindergarten Program, 2006-2009



Source: Oregon Department of Education (2012). *The Annie E. Casey Foundation- Children First for Oregon.*

Despite strong research showing the positive impact of high-quality early education, many families in Benton County who are eligible for Head Start are not being served. In 2009, only 42 percent, or 123 children were enrolled in Head Start in Benton County. Other childcare programs may offer scholarships for lower income families, however the cost of childcare can still be prohibitive for families earning minimum wage. The average annual cost of toddler care in childcare centers in Benton County is \$10,497, higher than other Willamette valley counties and higher than the state average (2010). The annual income of a minimum wage worker in Oregon is \$17,472 (2010). Therefore the cost of care for a toddler as a percent of annual income of a minimum wage worker can be as high as 60 percent.

County-level annual cost of childcare for a toddler, 2010

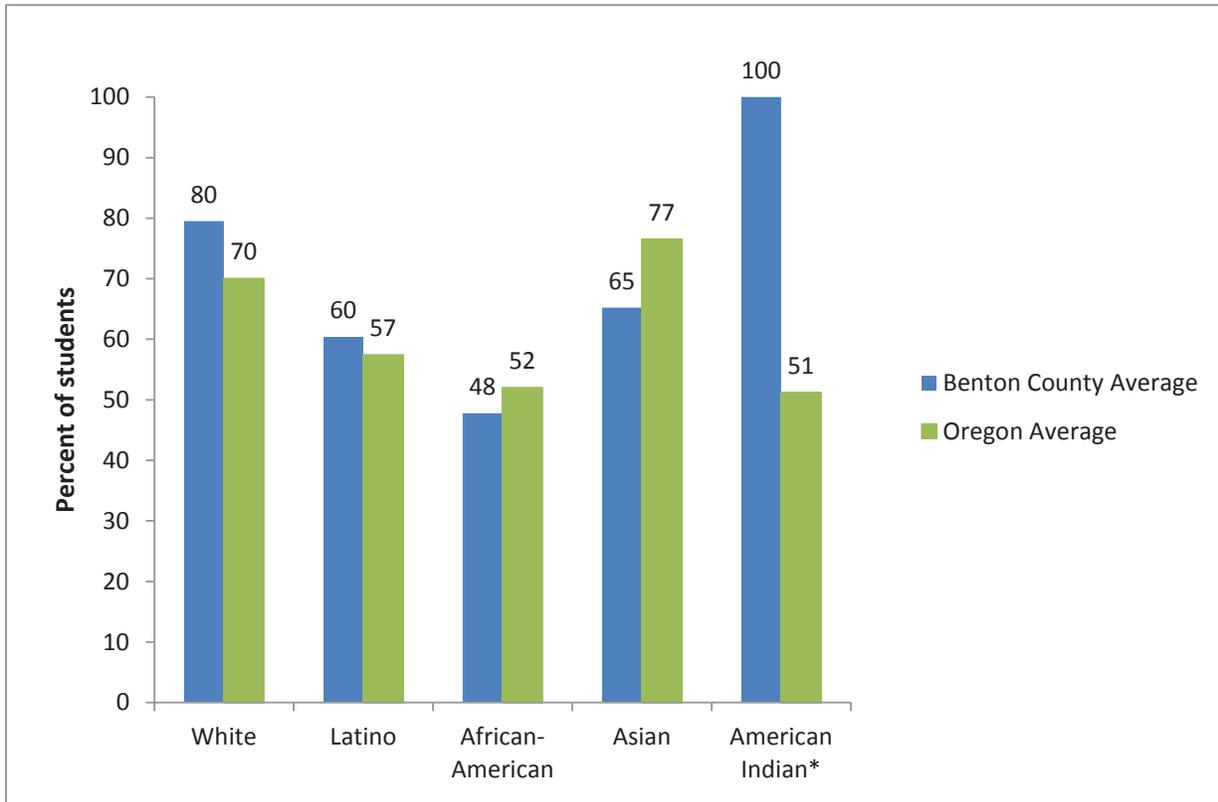


Source: Child Care Resource & Referral Network, 2010

High School Education

High school graduation is a strong predictor of future employment and earnings. Conversely, dropping out of school is associated with lower income, multiple social and health problems,²² and health risks.²³ For example, 32 percent of Oregonians who do not have a high school degree smoke, compared with 24 percent of high school graduates, 18 percent with some post-secondary education, and 7 percent of college graduates.²⁴

Percent of Benton County high school students graduating on time, 2011



Source: Oregon Department of Education (2012)

* Represents only one school district

In 2011, the rate of high school graduation was highest for white and American Indian populations and lowest for Latino and African-American populations. It is important to note that only one school district reported graduation rate for students identified as American Indian in 2011.

Employment

Stable and secure employment influences health not only by being a source of income, but by providing access to health insurance. In 2011, 57 percent of Benton County residents, or 41,751 individuals 16 years and older were in the labor force, of which, 6 percent, or 4,391 were unemployed.¹

Percentage of civilian employed population 16 + by business sector, 2008-2010

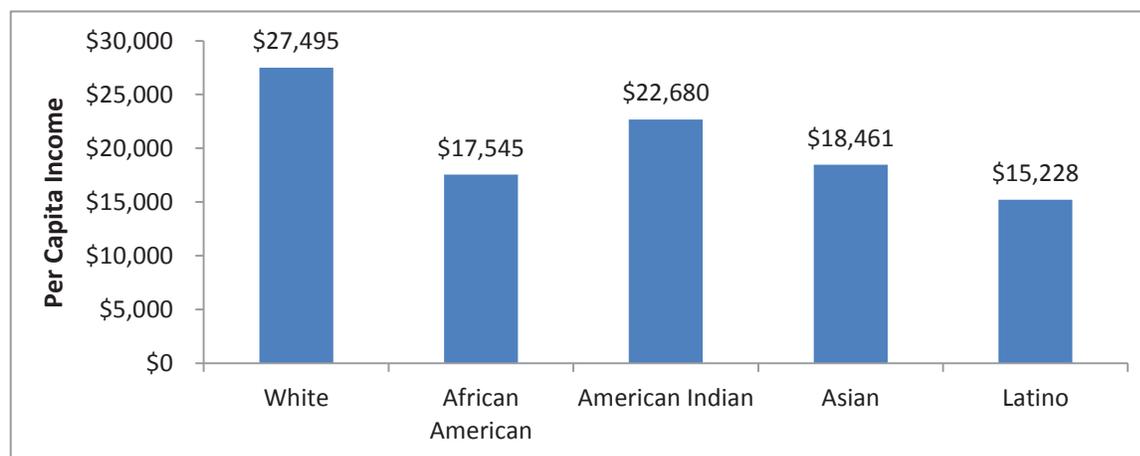
Business Sector	Benton County	Oregon
Educational services	21.4%	8.4%
Health care and social services	13.4%	13.3%
Retail trade	12.2%	12.5%
Manufacturing	10.5%	11.3%
Professional, scientific, and technical services	7.4%	6.1%
Accommodation and food services	5.4%	7.2%
Construction	4.0%	6.4%
Agriculture, forestry, fishing and hunting	3.7%	3.2%

Source: U.S. Census Bureau, American Community Survey, 2008-2010

Income and Poverty

Income involves more than money earned from a job. It also includes assets like a bank account or equity in a home, and access to other economic resources. Income influences people's ability to choose where to live, what food to eat, participation in physical activities (especially those that require fees or special equipment), and availability of leisure time. In Benton County, Latino, African-American and Asian populations have average household incomes that are almost half that of the White population.

Per capita income in Benton County by race/ethnicity, 2008-2010



Source: Benton County Health Status Report, 2012

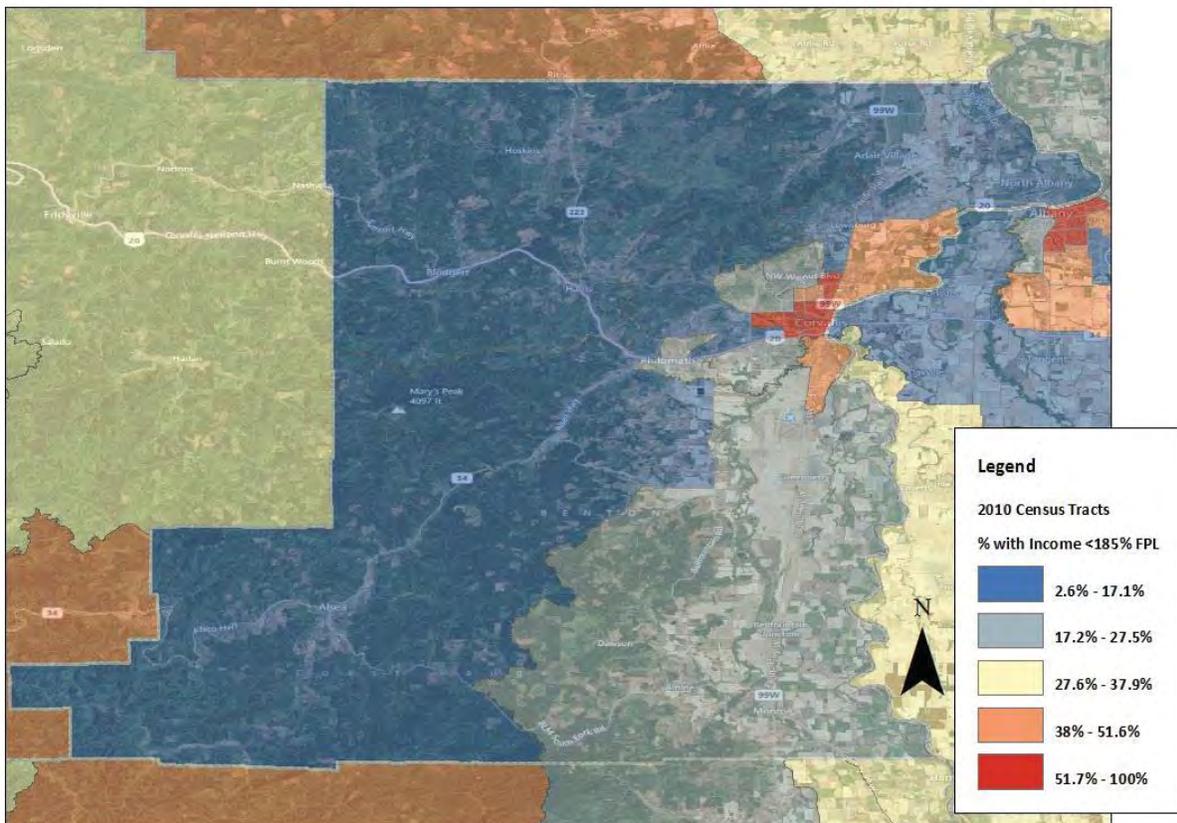
Poverty

Poverty is directly related to worse health outcomes. Poverty related to both limited income and lack of income limits choices in education, employment, and living conditions and reduces access to safe places to live, work, and play. It also frequently hinders choices and access to healthy food. Poverty can contribute to obesity by increasing families' reliance on cheap sources of food, which tend to be higher in calories and lower in nutritional value.

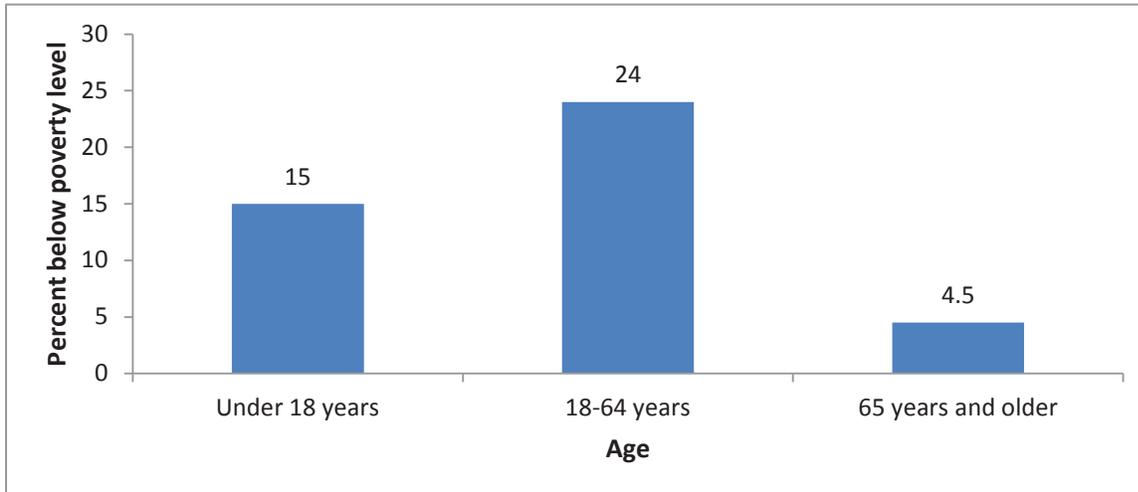
The map below illustrates the geographic distribution of households earning less than 185 percent of the federal poverty line in Benton County. In 2012, this is an annual income up to \$42,642 for a family of four (\$3,554 a month).

Benton County, Oregon 2006-2010
Percent of Population with Income <185% of Federal Poverty Line (FPL)
Source: 2006-2010 American Community Survey, US Census Bureau

Map created by:
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10/16/2012



Percent living below poverty level by age in Benton County, 2008-2010

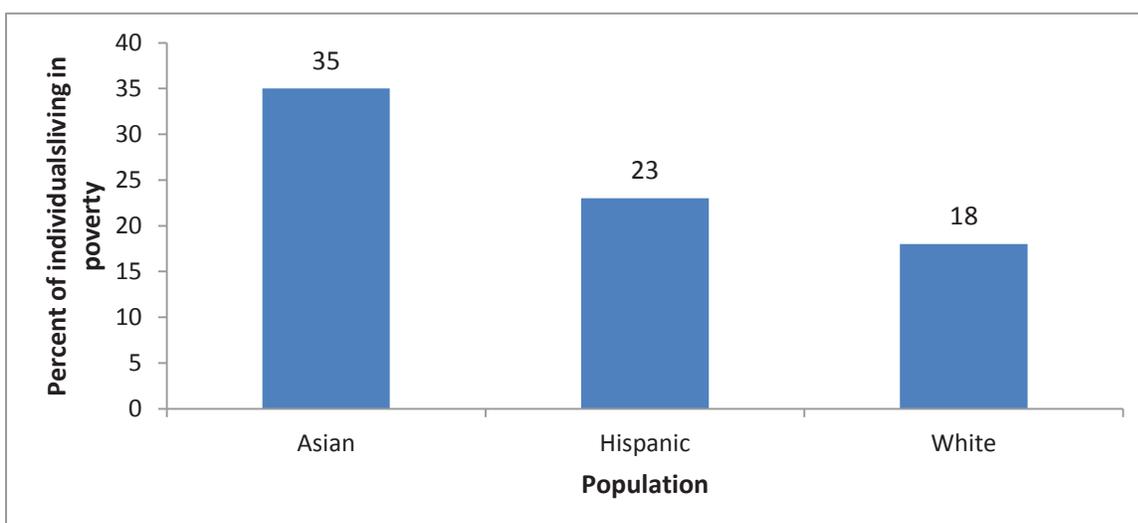


Source: U.S. Census Bureau, American Community Survey, 2008-2011

Approximately 20 percent of the population in Benton County is living below the federal poverty line²⁵, which is less than annual income of \$23,050 for a family of four. The poverty level is a conservative estimate of the threshold below which families or individuals are considered to be lacking the resources to meet the basic needs for healthy living; having insufficient income to provide food, shelter, and clothing needed to maintain health.

In Benton County, almost a quarter of residents ages 18-64 are living below the poverty level. Variation also exists among race/ethnicity. Individuals who identify as Asian (35 percent) or Hispanic/Latino (23 percent) are more likely to be living in poverty than those who are White (18 percent).

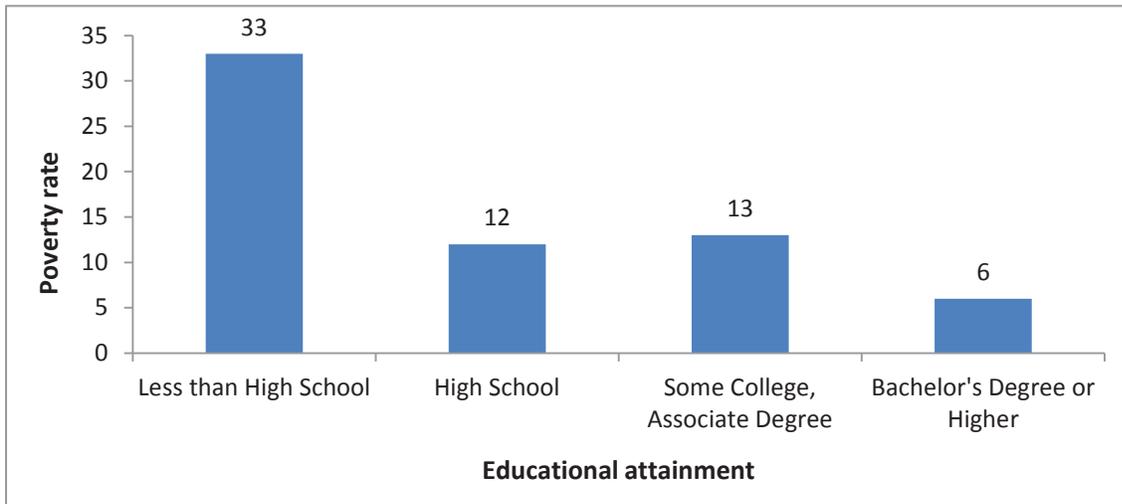
Percent of individuals living in poverty by race/ethnicity in Benton County, 2008-2010



Source: U.S. Census Bureau, American Community Survey, 2008-2010

Earning less than a high school education increases the chances of experiencing poverty. In Benton County, 33 percent of individuals who have not completed high school or a GED are earning wages below the poverty level compared to only 12 percent of those who have a high school degree.²⁶

Poverty rate for the population 25 years and over by educational attainment, Benton County, 2008-2010



Source: American Community Survey, 2008-2010

Many Benton County residents earn incomes higher than the federal poverty level but still struggle economically to meet their everyday needs. Thirty-three percent earn less than 185 percent of the Federal Poverty Level (\$42,642 for a family of four). This is the threshold that many assistance programs such as the Supplemental Nutrition Assistance Program (SNAP) use for income eligibility. Fully 35 percent earn less than 200 percent of the Federal Poverty Level which research suggests is the minimum income needed to meet basic needs (i.e. not including saving for college or emergencies).

Children Living in Poverty

A growing body of research shows that children who are raised in families experiencing long-term poverty are at greater risk of significant and long-term deficits in health²⁷. In 2011, 21.3 percent, (3,014) of children under 18 years of age were living in households earning less than 100 percent of the Federal Poverty Level (\$23,050 for a family of four), this is higher than the 3 year average from 2008-2010 in Benton County. In comparison, Oregon (23.6 percent) and U.S. (22.5 percent) are similar to Benton County rates of childhood poverty.

Based on Oregon Department of Education data, 37.4 percent of students were eligible for free/reduced lunch during the 2010-2011 school year with the highest percentage at Alsea School District 7J (75.9 percent eligible) and the lowest at Corvallis School District 509J (34.9 percent eligible). It should be noted that the percentage of students eligible for free/reduced lunch by school varies significantly from school-to-school in Corvallis. For example, Mt. View (49.7 percent), Wilson (51.8 percent), Lincoln (68.2 percent) and Garfield (75.1 percent) have rates higher than the district average.

Percent of K-12 students in Benton County eligible for free and reduced lunch, 2010-2011

School District	Eligible for free lunch	Eligible for reduced lunch	Percent	Student enrollment	Total eligible
Alsea SD 7J	93	17	75.9%	145	110
Corvallis SD 509J	1,979	299	34.9%	6,520	2,278
Monroe SD 1J	236	34	57.1%	473	270
Philomath SD 17J	530	94	38.2%	1,634	624
Benton County	2,838	444	37.4%	8,772	3,282

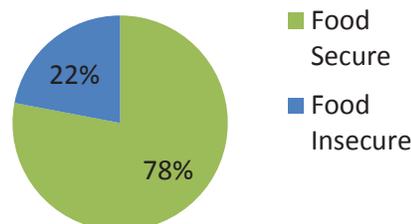
Source: Oregon Department of Education

Food Security

Food security is defined here as having enough to eat, and being able to purchase or obtain healthy food in socially acceptable ways²⁸. Adequate nutrition is particularly important for children, as it affects their cognitive and behavioral development. Children from food insecure, low-income households are more likely to experience irritability, fatigue, and difficulty concentrating on tasks, especially in school, compared to other children²⁹.

Child food insecurity rate in Benton County, 2010

In 2010, 15 percent of the Benton County population, or over 12,000 individuals, were residing in households that were food insecure.³⁰ Among those who were food insecure, 36 percent earned incomes above 185 percent of the Federal Poverty Level, making them ineligible to receive government assistance programs.



Recent targeted assessments suggest that food insecurity is higher among certain populations, such as Latinos, and households in rural areas.^{31 32}

The food insecurity rate is higher among children. In 2010, over 3,200, or 22 percent of children were living in food insecure homes, half of which (53 percent) were ineligible to receive federal nutrition programs³³.

Supplemental Nutrition Assistance Program participation, 2010

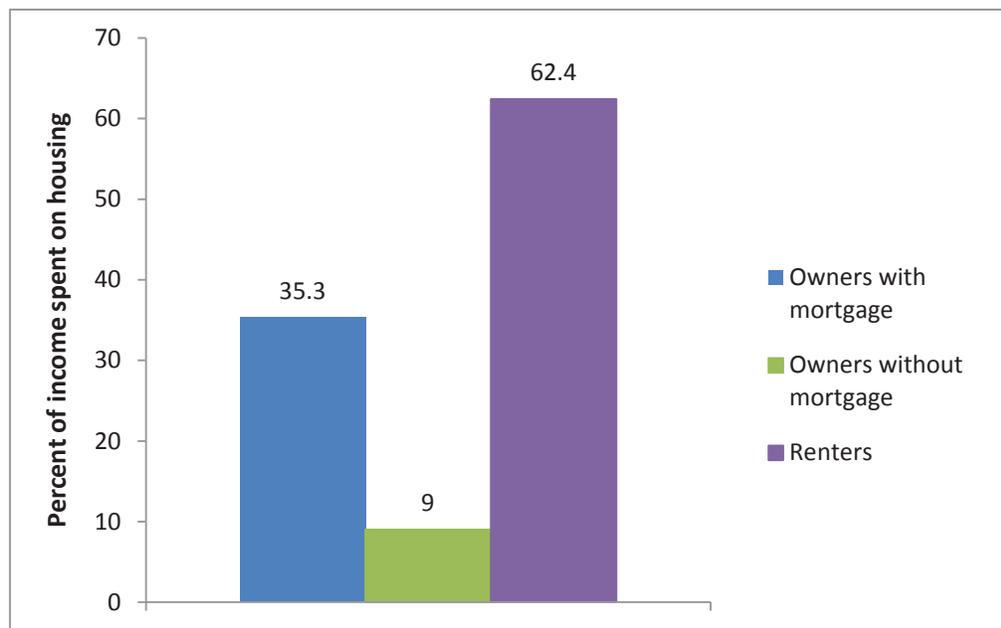
The Federal Supplemental Nutrition Assistance Program (SNAP) is the largest domestic food and nutrition assistance program for low-income Americans in the U.S. In Benton County, 42 percent of individuals meeting eligibility guidelines participate in the program. This is on average 9,214 participants each month. Benton County has among the lowest participation rates for SNAP in the State; on average 68 percent of eligible Oregonians participate in the program.³⁴

Housing and Home Ownership

Housing is an important part of the built environment and another key factor contributing to good health. Older housing in particular can present multiple threats to health, including presence of lead-based paint, lead solder in plumbing and in the soil, mold, and asbestos.

Affordable, quality housing provides shelter that is safe and healthy for all people. Housing that costs more than 30 percent of household income is considered to be “unaffordable”. In Benton County, fully 62.4 percent of renters spend 30 percent or more of household income on housing. Of home owners with mortgages, 35.3 percent spend 30 percent or more of household income on housing. Of home owners without mortgages, 9 percent spend 30 percent or more of household income on housing. The median monthly housing costs for mortgaged owners was \$1,457, owners without a mortgage \$476, and renters \$770.

Occupants with housing cost burden (>30 percent of income) in Benton County, 2011



Source: U.S. Census Bureau, 2011 American Community Survey

Homelessness

According to data gathered from agencies serving the homeless population in Benton County, there were approximately 154 total homeless individuals living in Benton County during 2009. This number does not include individuals who were living with families and friends; sleeping in vehicles, campgrounds or the woods. It also likely does not include those who exhausted their opportunities for services or who never attempted to access them.³⁵

Across the State, an increasing number of Oregon’s K-12 public school students are homeless at some point during the school year. Homelessness among students has more than doubled since the 2003-2004 academic school year. Since the 2009–2010 academic year an additional 1,500 students became homeless. Statewide, 3.7 percent of Oregon K-12 students were homeless at some point during the 2010-11 school year.³⁶ In Benton County, 2.6 percent of the total district enrollment was homeless during the same period.

Homeless students grades K-12 in Benton County, 2010-2011

School District	Number of Homeless Students Grades K-12	Total District Enrollment	Percent of Homeless to Total Enrollment
Alsea SD 7J	12	145	8.3
Corvallis SD 509J	148	6539	2.3
Monroe SD 1J	41	473	8.7
Philomath SD 17J	26	1634	1.6
Benton Total	227	8791	2.6

Source: Oregon Department of Education, 2011

Outdoor and Indoor Environments

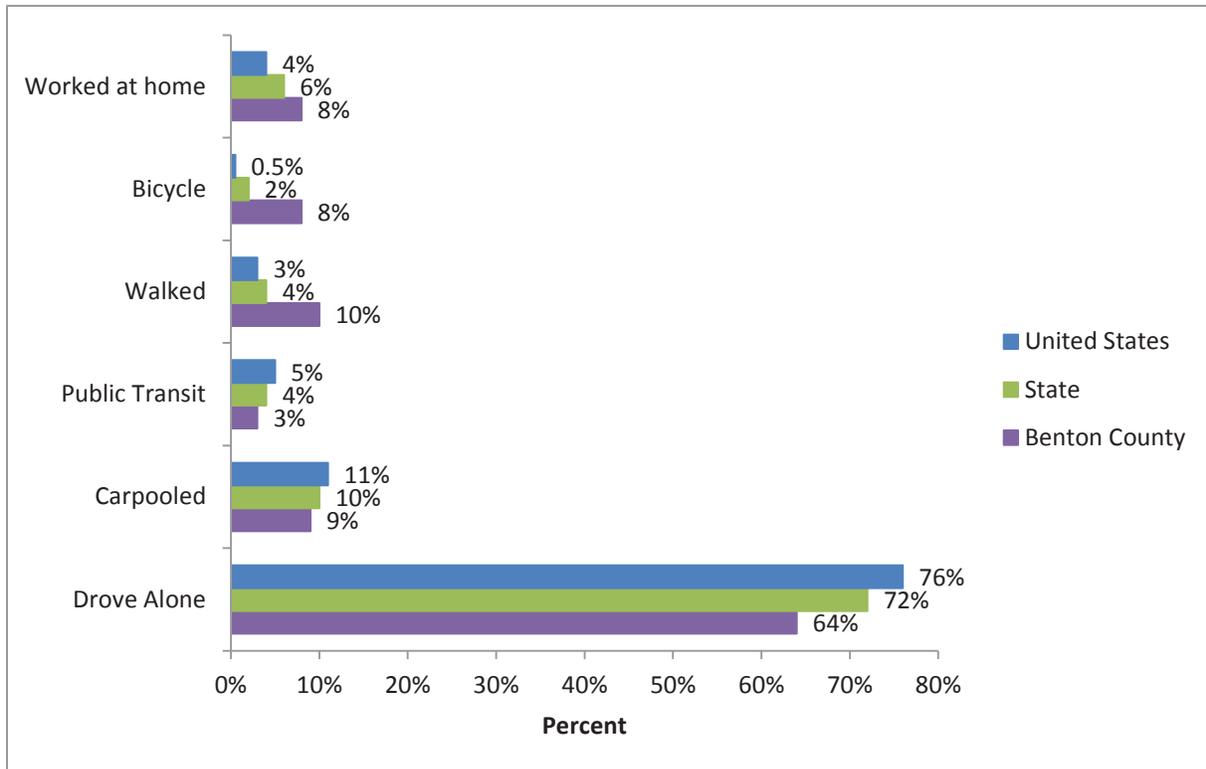
Natural and man-made (or built) environments³⁷ contribute to health in a variety of ways. Everyone needs clean water to drink and air that is safe to breathe, but people also need schools, workplaces, and homes that do not expose them to physical or chemical hazards and places to walk and recreate outdoors that are clean and free of debris.

Transportation

Transportation links people and places, making it possible to get to work, to school, to recreation, and to get from home to the grocery store. Transportation includes more than roads, walkways, or bridges, encompassing public transit systems; policies that dictate the location and construction of roads; and guidelines for accommodating different kinds of users. These are important for increasing physical activity, and for reducing the potential for driver, bicyclist, and pedestrian injury.

In Benton County, the majority of workers 16 years and over drive alone during their daily commute. Although the percentage of workers walking and bicycling to work are higher in Benton County compared to state and national averages, Benton County workers are less likely to carpool or take public transit.

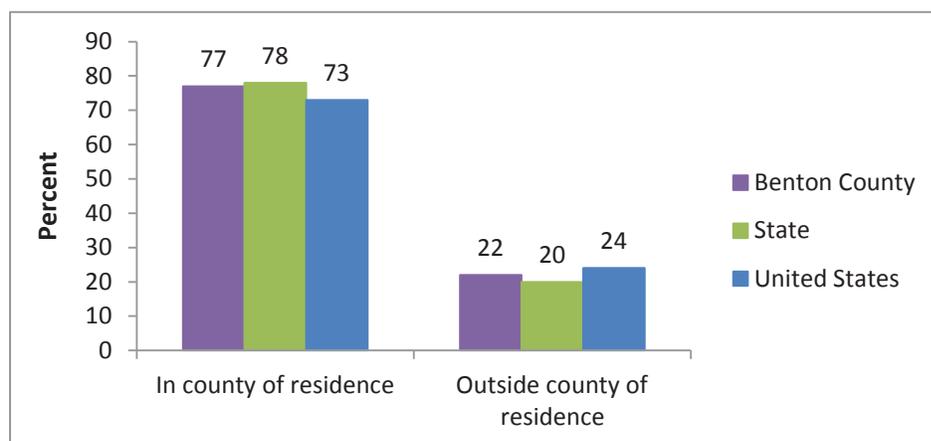
Means of transportation to work, 2008-2010



Source: U.S. Census Bureau, American Community Survey, 2008-2010

The location where residents work compared to where they live influences transportation choices. Workers who must travel outside of the county may find alternative transportation is not an option due to distance, time and availability. The majority of residents 16 years and older in Benton County (75 percent) live and work in the county, similar to State and National percentages.

Benton County residents' place of work, 2008-2010



Source: U.S. Census Bureau, American Community Survey, 2008-2010

Recreational Assets

Research demonstrates a strong relationship between access to recreational facilities and physical activity among adults and children. Additionally, studies have demonstrated that proximity to places with recreational opportunities is associated with higher physical activity and lower obesity levels.³⁸

Benton County's rate of recreational facilities per 100,000 population is 16.9 compared with the Oregon's overall rate of 12, based on a measure used by the United States Department of Agriculture (USDA) Food Environment Atlas.⁶

Benton County has more than 60 miles of biking and running paths as well as over 50 parks and designated land preserves; public-private recreational facilities. Based on data from the 2008-2012 Statewide Outdoor Recreation Plan, the Benton-Lane-Linn County region has Oregon's highest rate of growth for the following activities: nature and wildlife observation (254 percent), fishing from a boat (97 percent), sightseeing/driving for pleasure (69 percent), R/V trailer camping (49 percent), and day hiking (21 percent).

Changing issues and needs

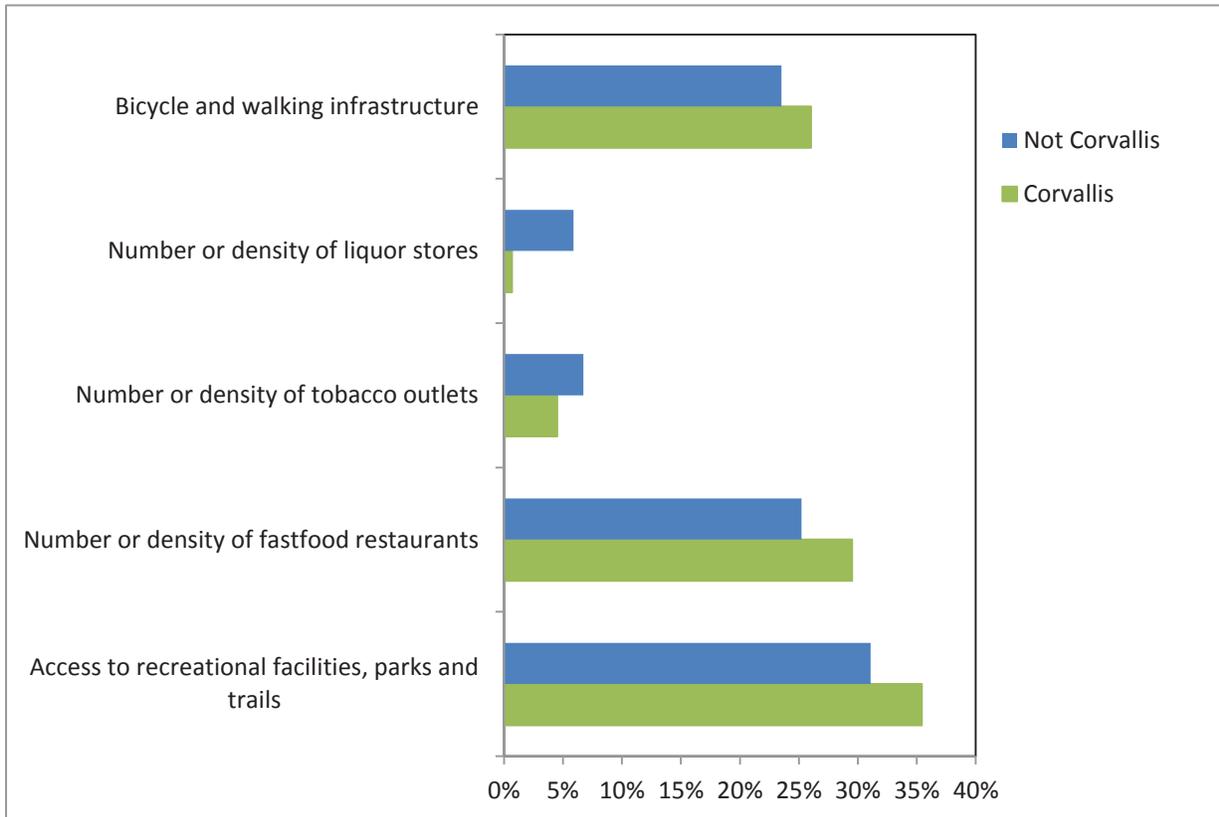
Several changes have been identified throughout Oregon which is influencing use of outdoor recreation areas and facilities.³⁹

- A rapidly aging population with implications for increasing recreational participation (older people are increasingly more active)
- Declining youth outdoor participation in traditional outdoor recreational activities
- A growing minority population with traditionally lower participation in recreational activities
- Increasing rates of obesity and decreasing physical activity.

The residents of Corvallis perceive the availability of local parks and recreation opportunities as very important. Respondents to the Statewide Outdoor Recreation Plan survey named the following as those they used most frequently: Neighborhood parks, trails, natural areas, and dog off-leash areas. They also identified recreational assets that are of high importance and high need. Those include neighborhood parks, natural areas and trails, Osborne Aquatic Center, and athletic fields.⁴⁰

Several factors of the built environment are rated as important to the health of Benton County residents. The top three areas of the built environment that impact the health of Benton County residents are access to recreational facilities, bicycling and walking infrastructure and the number of fast food restaurants.

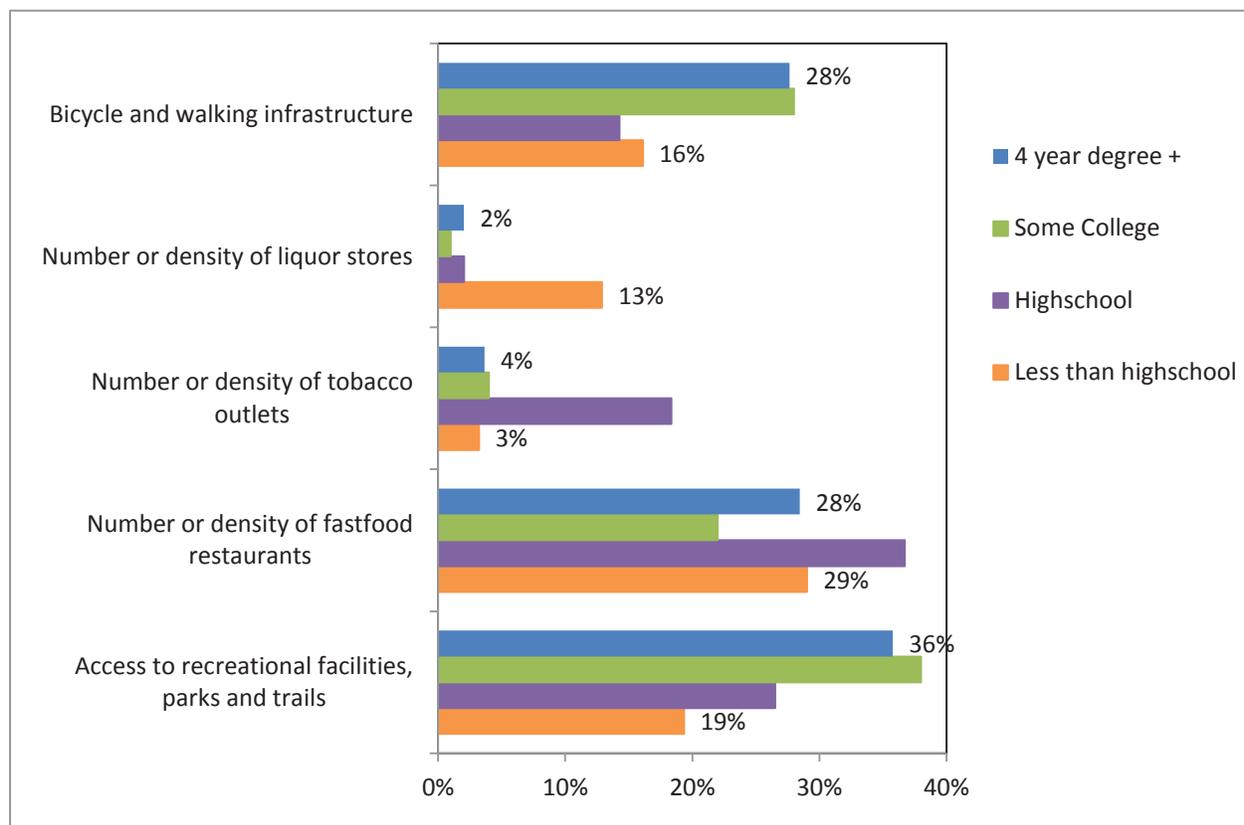
Built environment factor that most greatly impacts health in Benton County, 2012



Source: Benton County Public Health Assessment Survey, 2012

Although there is little variation in response based on place of residence within the county, responses do vary by educational level. Residents with a high school or less education, identify the number or density of fast food restaurants as the most important built environment issue, where as individuals with at least some college report that access to recreational facilities, parks and trails most often.

Built-environment factor that most greatly impacts health by level of education, Benton County, 2012



Source: Benton County Public Health Assessment Survey, 2012

Limited Access to Healthy Foods

Limited access to fresh fruits and vegetables is an important barrier to consumption and has been shown to be related to premature death. Approximately half (43 percent) of Benton County residents do not have easy access to healthy food shopping as measured by the percent of residential zip codes in the county with a healthy food outlet.⁴¹

In Benton County, 9 percent of the low-income population lives more than a mile from the nearest grocery store, a distance which is considered limited access to healthy food by the USDA.⁴² In combination to distance from a grocery store, price and type of food sold locally may also present challenges to low income minority residents. For example, residents in south Benton County report travelling 30 minutes to buy groceries at low-price grocery stores in Eugene.⁴³

Rural grocery stores throughout the county report barriers which may limit rural low-income families' access to healthy food. These include: administrative barriers to becoming an authorized vender for SNAP and WIC programs; and economic barriers to offering fresh fruits and vegetables, meat, dairy and other refrigerated foods.⁴⁴

Fast Food Restaurants

As mentioned earlier, many residents, especially those with lower levels of education, perceive fast food restaurants as an important issue to their health. Studies show an increase in obesity and diabetes prevalence with increased access to fast food outlets in a community. This is locally relevant since Benton County has the highest proportion of fast food restaurants in Oregon (49 percent).⁴⁵

Healthy Homes

Lead Screening

Lead poisoning is a significant health concern. Laws and regulations are in place to help protect people however lead poisoning still threatens many Oregonians, especially children.

Although leaded paint and gasoline may no longer be legally sold in the United States, many children are still exposed to dangerous amounts of lead. Lead paint dust is the most common way children are exposed, and it is common inside and outside homes built before 1978. Ordinary household repair and maintenance activities can stir up lead-contaminated dust. People can also get lead in their bodies by eating foods contaminated with lead from the soil or paint chips.

Oregon has a relatively low overall prevalence of lead poisoning compared to other states and prevalence rates have declined through the years. This decline is consistent with national trends. In Oregon an estimated 1,000-2,000 children have blood lead levels equal to or greater than 10 µg/dl. Of the 101,797 children screened in the last 12 years in Oregon, 12.3 percent had blood lead levels in the 5-9 µg/dl range. There have not been any lead poisoning cases originating in Benton County in the last 10 years.

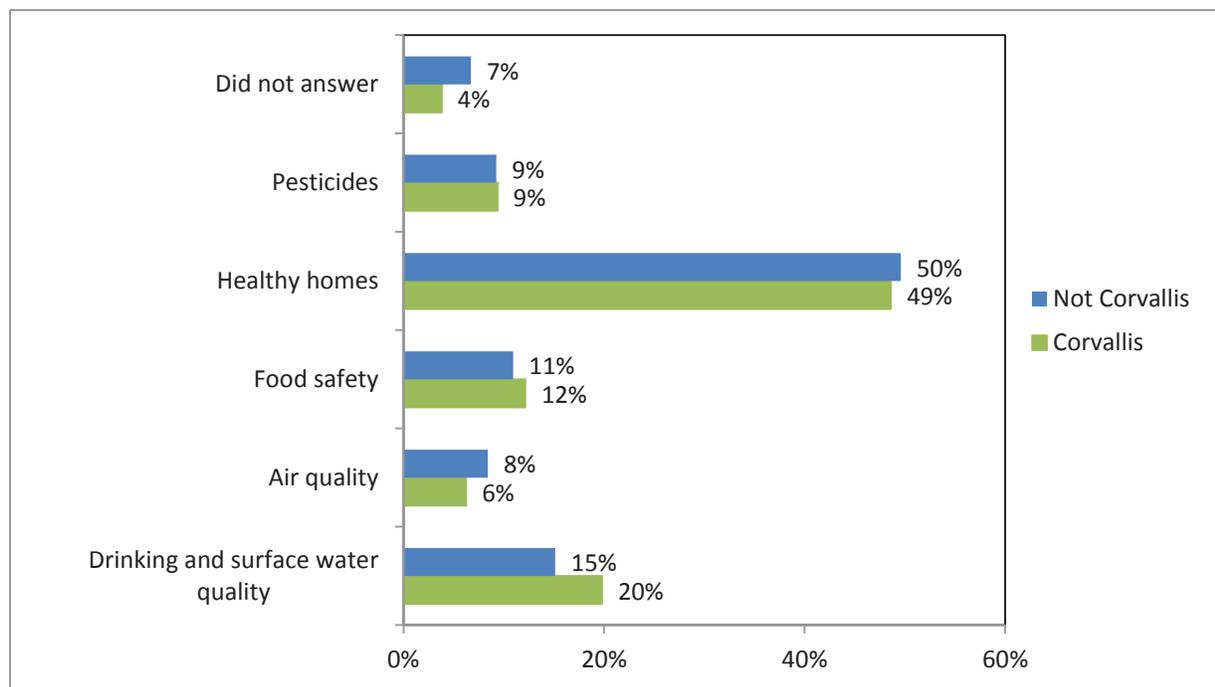
Radon

Radon (Rn) is a gaseous radioactive element that occurs from the natural breakdown of uranium in the soil and rocks. It is colorless, odorless, and tasteless. In indoor settings, radon poses a risk by emitting atomic particles that can enter the lungs and alter the DNA, increasing a person's lung cancer risk. Radon is the second leading cause of lung cancer in the nation and is classified as a Class A carcinogen according to EPA. Radon is found in varying concentrations throughout the United States with moderate levels found in Oregon (generally under 40 picocuries of Radon per liter of indoor air). Four to ten percent of Oregon homes are estimated to have radon gas leaks.

The average indoor radon level in Benton County, as determined by radon test results from [Air Check, Inc](#), is 1.8 picocurie ([Radon Levels for Oregon](#)). The average national indoor radon level is 1.3 picocurie.

Throughout Benton County, healthy homes are rated as the most important environmental quality issue affecting health. Many low income residents report inadequate ventilation and insulation leading to high utility costs in the winter and the growth of mold.⁴⁶ Many low income residents are unaware of renters’ rights in regards to quality housing as an avenue to reduce these risks.

Environmental quality issue that has the greatest impact on health, Benton County, 2012



Source: Benton County Public Health Assessment Survey, 2012

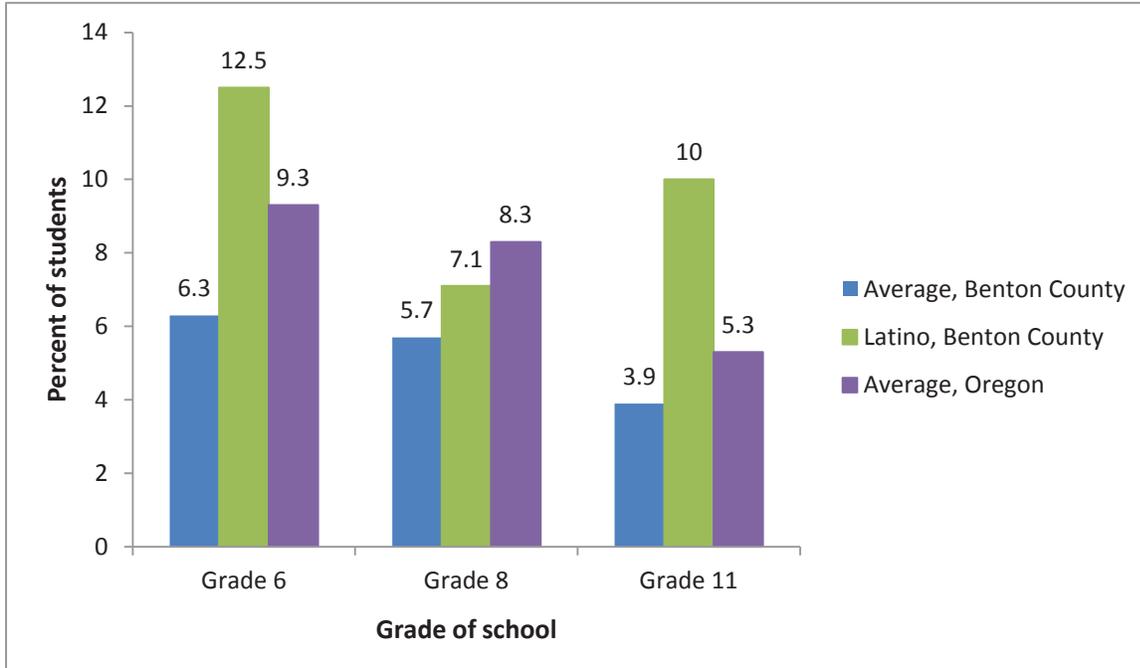
Community and Personal Safety

The same factors that influence where people live and the opportunity they have to be healthy - income, employment, education – are also linked to the occurrence of violence.

Violence in schools can affect the learning environment and contribute to absenteeism. Students, who are bullied, harassed, feel unsafe or otherwise victimized are more likely to miss classes, skip school, feel depressed or exhibit problem behaviors. Research shows that comprehensive discipline, positive behavioral support and anti-bullying programs in schools can reduce the incidence of harassment among primary and secondary school students.

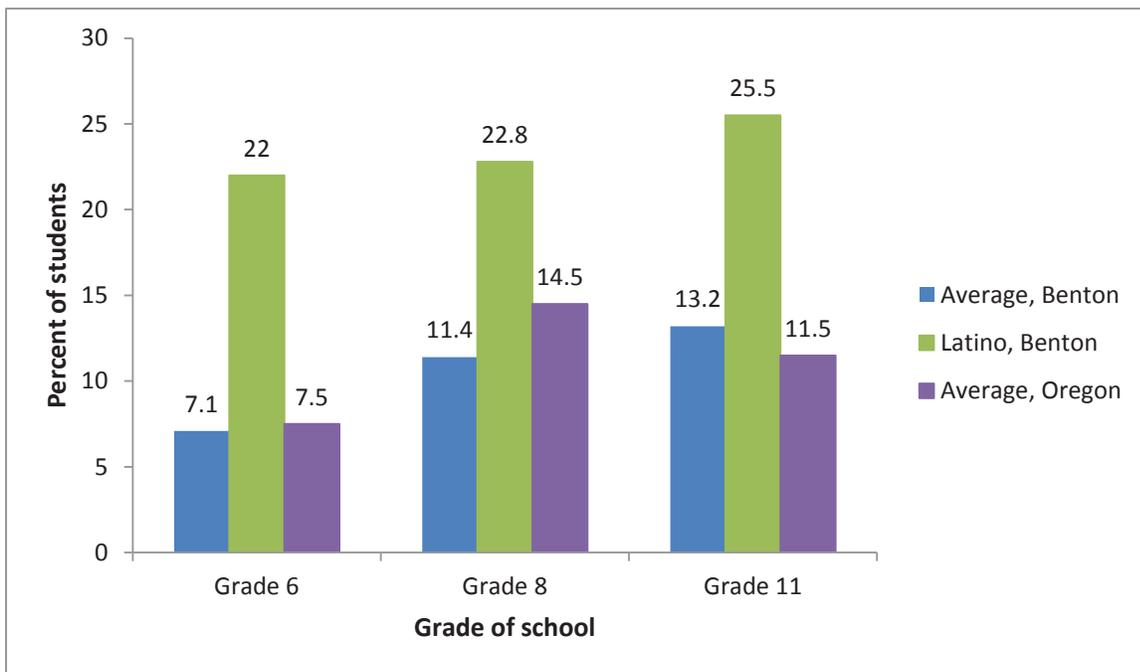
On average, few middle and high school students in Benton County report feeling unsafe at school, however, responses differ by ethnicity and sexual orientation.

Percent of Benton County students missing school, due to feeling unsafe, 2007-2009



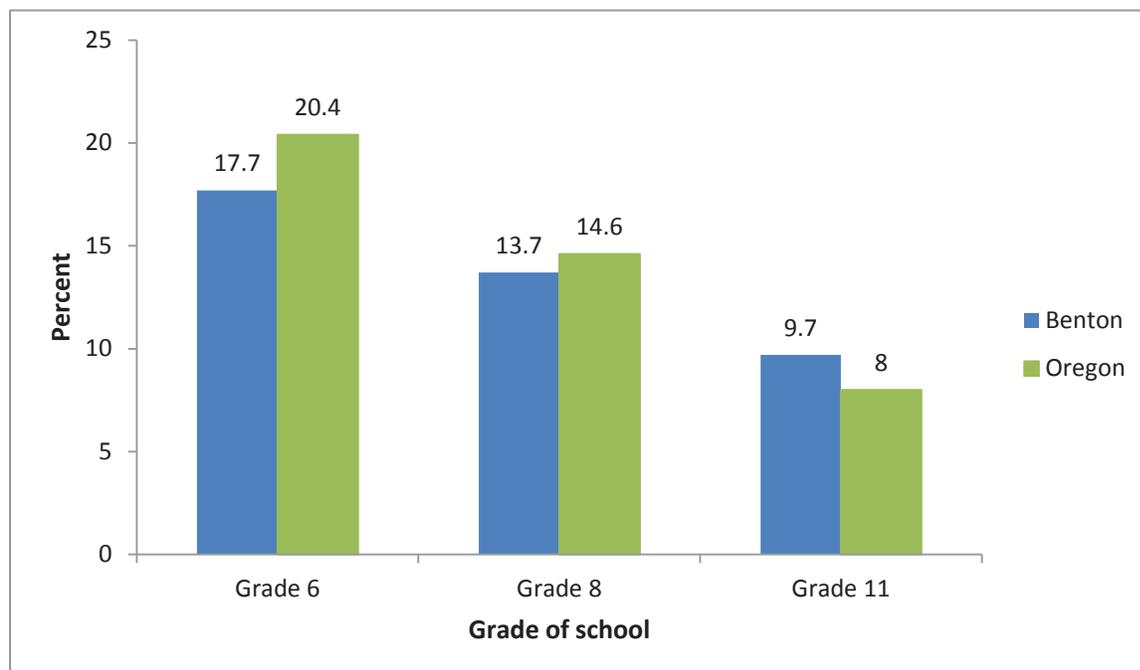
Source: Oregon Student Wellness Survey, 2007-2009

Percent of Benton County students experiencing harassment about race or ethnic origin, 2007-2009



Source: Oregon Department of Human Services Addictions and Mental Health Division, 2012

Harassment because someone thought you were gay, lesbian, bisexual or transgender: 2009-2010



Source: Oregon Department of Human Services Addictions and Mental Health Division, 2012

Access to Medical Care

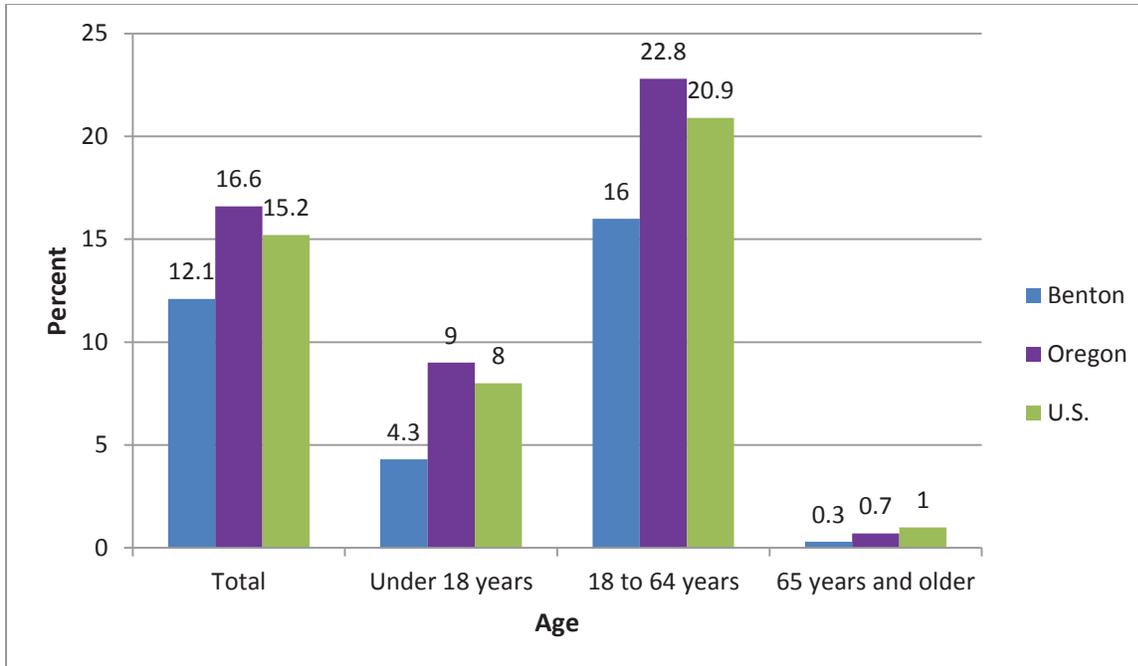
A number of factors that shape the opportunity for health in Benton County - education, employment, and transportation, for instance - also affect access to health care. In addition, the ability to acquire health insurance often affects a person's access to medical care.

Insurance Coverage

People who are uninsured or under-insured (that is, their insurance does not cover all necessary care) receive less medical care than their insured counterparts. Even when they do receive care, it is often significantly delayed (often due to concerns about cost), and their final outcome is frequently worse than if they had received care right away⁴⁷. Lack of health insurance creates a financial risk and a burden when care is received. Hospital-based charity care helps uninsured and under-insured Benton County residents, but does not completely compensate for gaps in health insurance coverage.

Almost 12 percent of the population in Benton County is uninsured, most significantly among individuals 18-64 years of age (17 percent of all 18-64 year olds). Among youth under the age of 18, almost 6 percent were uninsured. Differences in the rate of insurance persist both by race/ethnicity, employment status and income.

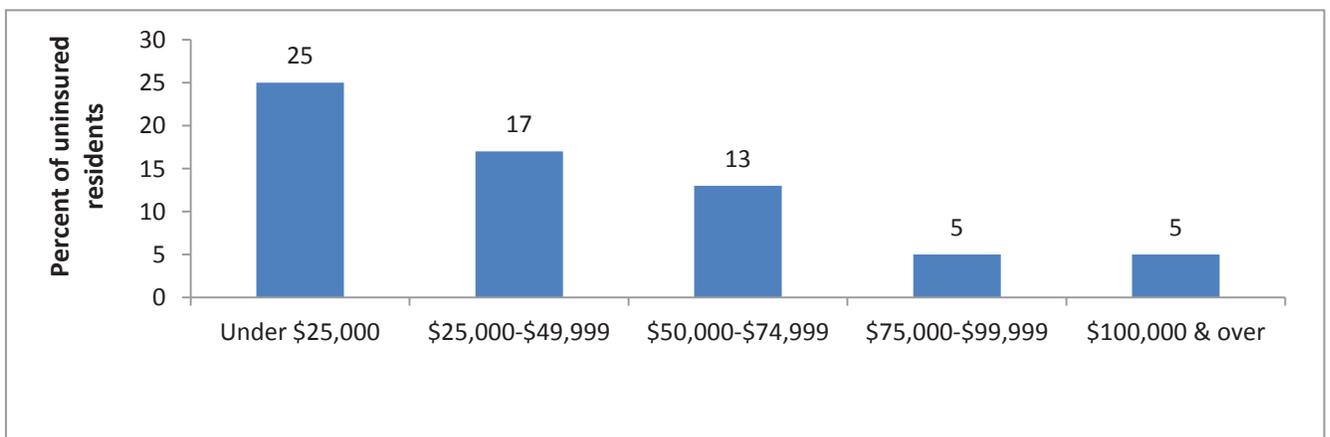
Percent of population without medical insurance coverage, 2009-2011



Source: Census Bureau, American Community Survey, 2008-2012

- Twenty five percent of Hispanic/Latino individuals and 23 percent of “other race” are uninsured, compared to 8 percent of Asians and 13 percent of the White population.
- Forty percent of the unemployed are uninsured compared to 14 percent of those currently employed.
- Among the employed, those working less than full time, year-round are more likely to be uninsured compared to those working full time, year-round (20 percent vs. 10 percent). Residents earning less than 200 percent of the Federal Poverty Level are more likely to be without insurance coverage than those with higher incomes (44 percent vs. 8.5 percent).

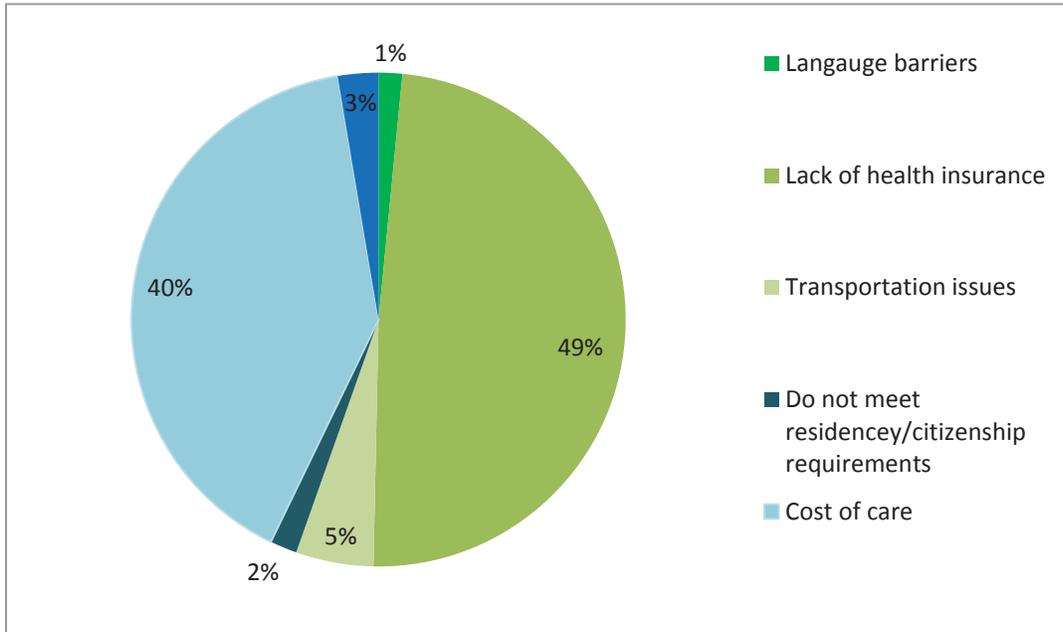
Percent uninsured Benton County residents, by income level, 2008-2010



Source: Census Bureau, American Community Survey, 2008-2012

Lack of health insurance and the cost of medical care are the two most important issues influencing access to health care for residents in Benton County as reported in the Benton County Public Health Assessment Survey. These results are consistent across place of residence, education levels and age groups.⁴⁸

The issue that has the greatest impact on the ability to receive health care services in Benton County, 2012



Source: Benton County Public Health Assessment Survey, 2012

Many Benton County residents have voiced a concern about access to medical care, particularly for those who are uninsured, non-resident⁴⁹ or disabled.⁵⁰

Additional areas of concern among the residents regarding access to health care and quality of care include:⁵¹

- transparency in the delivery of services
- communication and collaboration among various providers
- focus on prevention and education
- inclusion of special needs - especially mental health
- convenient locations and hours among service providers
- recognition of cultural issues and barriers to care

Chapter 4

Healthy Living Indicators

This section addresses individual health behaviors such as engaging in physical activity, maintain healthy eating habits, being tobacco-free, and using alcohol and prescription drugs appropriately. Ways that people protect and promote health for others is also discussed, including assuring a healthy start for children; preventing and managing chronic conditions; preventing disease and injury; and promoting mental good health.

Making healthy choices at the individual and community level requires knowledge and understanding, as well as freedom to act on informed decisions. As a result, healthy living is highly dependent on the contextual factors described in Chapter 3: Opportunities for Health.

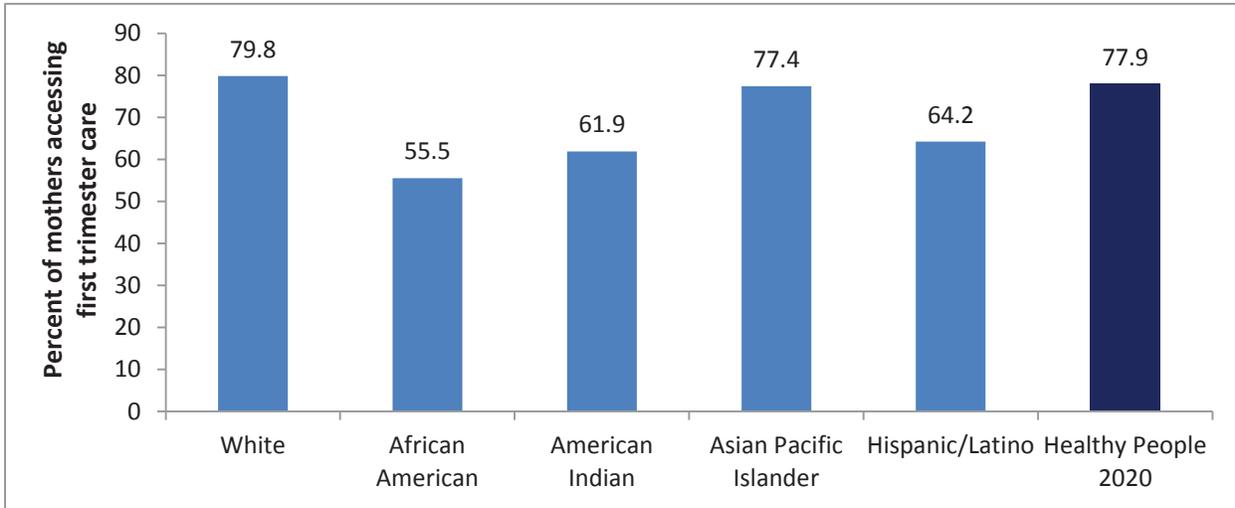
A Healthy Start for Children

Prenatal Care and Healthy Pregnancy

Women who access prenatal care are more likely to have healthy pregnancies, and prevent prematurity or low birth weight, both of which are significant contributors to infant mortality and high costs of care. Prenatal care includes discussing a mother's healthy choices and body changes; prenatal testing and counseling; identifying and treating medical complications like gestational hypertension, diabetes, and anemia; promoting optimal weight gain; testing for and treating sexually transmitted infections; oral health assessment and treatment; and maternal mental health, tobacco and substance abuse screening.

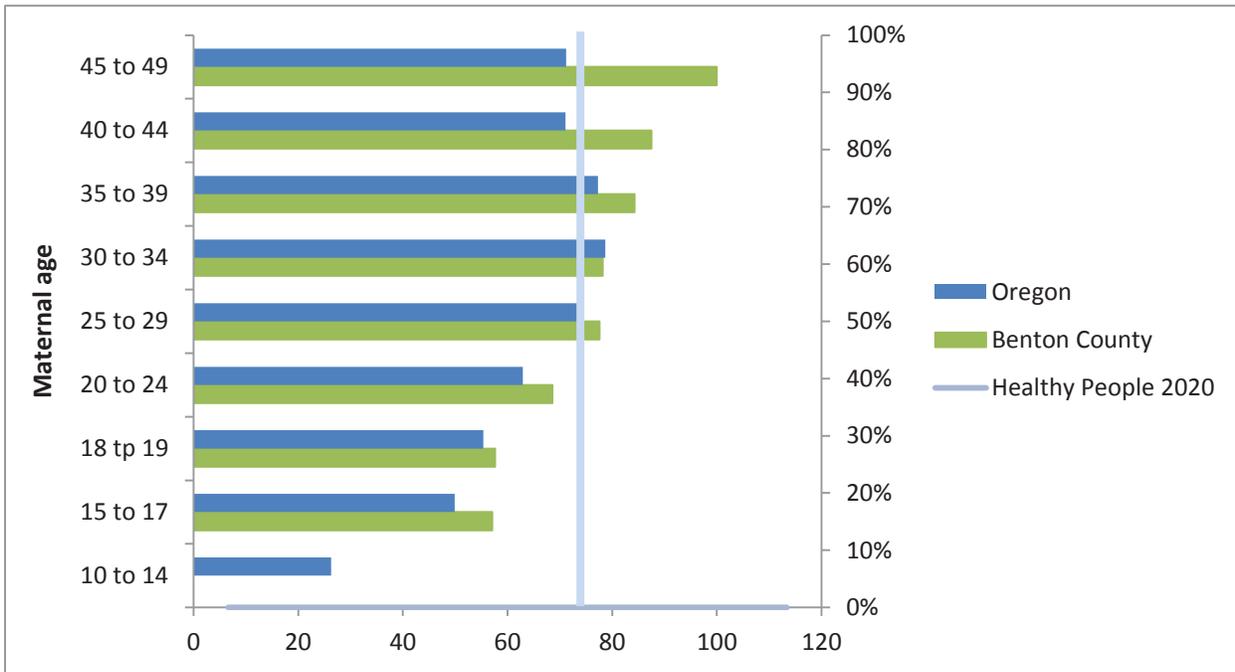
In Benton County, White mothers and older mothers (24 years and older) are more likely to receive prenatal care during the 1st trimester. Younger mothers (24 years and younger) and non-White mothers are less likely to receive care during the 1st trimester.

Prenatal care in Benton County, 2008-2010



Source: Benton County Health Status Report, 2012

Percent of women with 1st trimester prenatal care by maternal age: 2009



Source: Benton County Health Status Report

Number of infant deaths

In Benton County, infant mortality has remained at around zero since 2001. Infant mortality rates are lower in Benton County than in Oregon (7.8 per 1,000 births). Benton County exceeds the Healthy People target of 6.0 per 1,000 births.

Low Birth weight, less than 2,500 grams (singleton births)

In 2009, approximately 5.5 percent of all infants born in Benton County weighed less than 2,500 grams, which exceeds the Healthy People 2020 target of 7.8 percent. Hispanic/Latino mothers (7.9 percent) are more likely to have low birth weight babies than White (5.2 percent) and Asian/Pacific Islander mothers (6.1 percent).

Pregnancy

Smoking during Pregnancy

Smoking during pregnancy is the single most preventable cause of illness and death among mothers and infants⁵². Smoking during pregnancy increases the risk of stillbirth, low birth weight, sudden infant death syndrome (SIDS), preterm birth, cognitive and behavioral problems, and respiratory problems in both mother and child.⁵³

Children exposed to tobacco in utero are more than twice as likely to become regular smokers themselves later in life, compared with children not exposed to tobacco in utero. Women who quit smoking before pregnancy or early in pregnancy also significantly reduce their risks for delays in conception (and infertility), premature membrane rupture, placental abruption, and placenta previa.⁵⁴

The proportion of Benton County mothers that smoke during pregnancy increased between 2005 and 2009. On average, 8.3 percent of mothers smoke during pregnancy. This percentage is lower than the State average of 12.8 percent, but fails to meet the Healthy People 2020 target of 1.4 percent. Smoking during pregnancy is more likely in some populations, such as White and American Indian/Alaska native women and younger women (under 25 years of age).

Smoking rate disparities among pregnant women in Benton County, 2009

Population	Percent who smoke during pregnancy
White, non-Hispanic	11.3%
American Indian/Alaska Native	10.0%
Between 18-19 years old	17.7%
Between 20 and 24 years old	23.6%
Total Benton County	8.3%

Source: Benton County Health Status Report, 2012

Smoking among pregnant women may be attributable to tobacco marketing directed at young women or norms within their social networks. Further research is needed to explore the disparities of smoking rates among different populations of pregnant smokers.

Smoking cessation counseling and programs offered during prenatal care can provide effective assistance to encourage pregnant women to quit smoking. However, the number of pregnant smokers who are offered such interventions in Benton County is unknown.

All Oregonians, regardless of insurance level or income, have access to the Oregon Tobacco Quit Line which offers free telephone based support to quit tobacco and specialized materials for pregnant women (1-800-QUIT-NOW or Spanish: 1-800-2NO-FUME). For women enrolled in Medicaid/Oregon Health plan, a comprehensive coverage of tobacco-dependence treatments is available for all smokers who want to quit. Oregon Medicaid program covers all forms of tobacco-dependence medications and at least one form of counseling. In addition, Oregon State law requires that all health insurance companies provide at least \$500 in tobacco cessation benefits. These resources can be promoted to all smokers through provider referral systems.

Alcohol Use during Pregnancy

Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong disorders, known as fetal alcohol spectrum disorders (FASDs). Children with FASDs can have a host of problems, including poor coordination, hyperactivity behavior, difficulty paying attention, poor memory, difficulty in school, learning disabilities, speech and language delays, poor reasoning and judgment skills, vision or hearing problems, and problems with the heart, kidney, or bones⁵⁵. There is no known safe amount of alcohol to drink during pregnancy, and no known safe time to drink alcohol during pregnancy.

The Pregnancy Risk Assessment Monitoring System, a national surveillance system, provides information about women who have had a recent live birth. Benton County data on the proportion of mothers consuming alcohol prior to or during pregnancy is not available. The most recently available State data stratified by race/ethnicity and age is from 2004.⁵⁶ Due to demographic changes over the past eight years, more recent local data is needed on alcohol consumption prior to and during pregnancy.

Breastfeeding

Breastfeeding is associated with numerous health benefits for infants, such as boosting immune system response and preventing obesity. Breastfeeding also promotes maternal-child bonding. The American Academy of Pediatrics recommends breastfeeding for a year or more after birth.⁵⁷ The proportion of mothers who breastfeed in Benton County exceeds each of the Healthy People 2020 targets

Percent of women breastfeeding, 2010

	Benton County	Oregon	United States	Healthy People 2020
Ever	92.8%	91.5%	61.7%	81.9%
At 6 months	60.9%	42.3%	27.0%	60.6%
At 1 year	40.2%	27.6%	18.5%	34.1%
Exclusively at 3 months	55.2%	45.3%	9.9%	46.2%
Exclusively at 6 months	50.3%	37.0%	5.3%	25.5%

Source: Benton County Health Status Report, 2012

Maternal Depression

Maternal depression is a depressive disorder characterized by feelings of sadness or hopelessness, diminished interest or pleasure in activities, changes in weight/appetite, sleeping disruption or too much sleep, restlessness or irritability, diminished ability to think or concentrate. Mothers with maternal depression are less likely to engage in healthy parenting behaviors. As a result, mother-infant bonding and attachment are compromised. In extreme cases, mothers with maternal depression have harmed themselves or their babies⁵⁸.

In Oregon, 24 percent of new mothers report that they were depressed during and/or after pregnancy. Forty-eight percent of these women were still experiencing depression at their child's second birthday.⁵⁹

Maternal depression rate disparities among women in Oregon: 2004-2008

- Low income women are twice as likely to report depressive symptoms as high income women (36.2 percent vs. 16.7 percent).
- Current smokers are 50 percent more likely to report depressive symptoms than non-smokers (33.5 percent vs. 21.7 percent).
- Women who experienced partner stress are twice as likely to report depressive symptoms (42 percent vs. 16.2 percent).
- Racial/ethnic minority mothers are more likely to report depressive symptoms than white mothers (Hispanic 31.1 percent vs. White 20.8 percent).
- Teen mothers are more likely to report depressive symptoms than older mothers (36.3 percent vs. 16.9 percent).

Childhood and Youth Experience

The number and severity of adverse experiences during childhood affects an individual's risk for alcoholism, depression, heart disease, liver disease, intimate partner violence, sexually transmitted infection, smoking, and suicide. Adverse events include emotional, physical, and sexual abuse and neglect, and various types of household dysfunctions such as violence against mothers, substance abuse, mental illness, parental separation or divorce, or an incarcerated household member.⁶⁰

Violence Experience by Children and Teens

Domestic Violence

Domestic violence includes all forms of physical injury/abuse, sexual abuse or assault, intimidation, verbal abuse and emotional abuse or threats of such harm¹. Domestic violence can include abuse from a household member (including roommates or caregivers), intimate partners (including dating partners) or a family member (whether or not they live with the victim).⁶¹

In 2011, Linn and Benton counties reported 3,914 calls regarding domestic violence. This total includes crisis calls, peer support calls, information and referral. In the same year 157 adults and children stayed overnight in domestic violence shelters in Linn and Benton counties.⁶²

Child Abuse

Each year in Benton County, approximately 100 children under age 18 experience abuse/neglect. The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation or threat of harm. Most often, the perpetrators of child abuse and neglect are family members who commit 94.3 percent of all child abuse and neglect in the state of Oregon. Of those, mothers and fathers account for 74.3 percent.⁶³

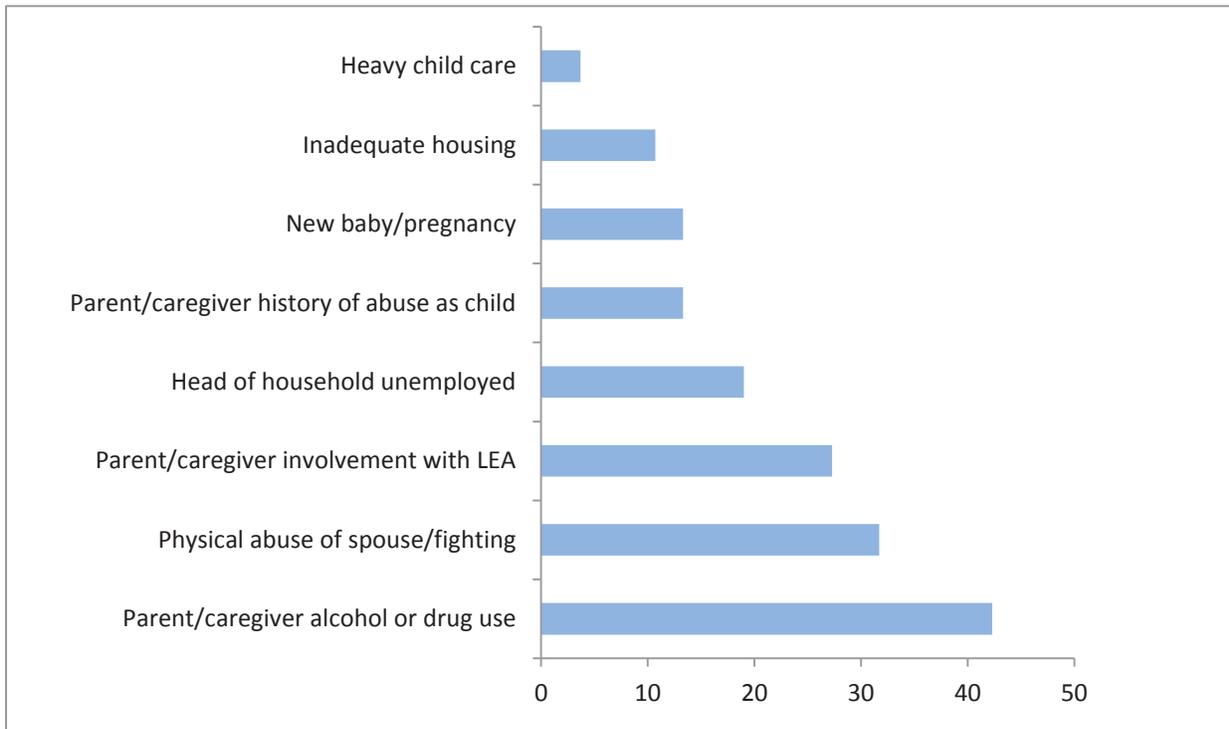
Child abuse/neglect rate per 1,000, 2005-2010

Year	Benton County	Oregon	Healthy People 2020
2005	6.6	13	8.5
2006	6.4	13.8	8.5
2007	6.3	12.2	8.5
2008	5.7	11.8	8.5
2009	5.8	12.5	8.5
2010	6	12.7	8.5

Source: Benton County Health Status Report, 2012

Family stress is a major underlying factor associated with families of abused and neglected children. Major sources of family stress often include drug and/or alcohol abuse, domestic violence, and parental involvement with law enforcement. Many families also have significant child care responsibilities. Some parents have a history of abuse as children. Many families experience multiple sources of stress.

Sources of family stress as a percent of founded abuse, Oregon, 2008-2010



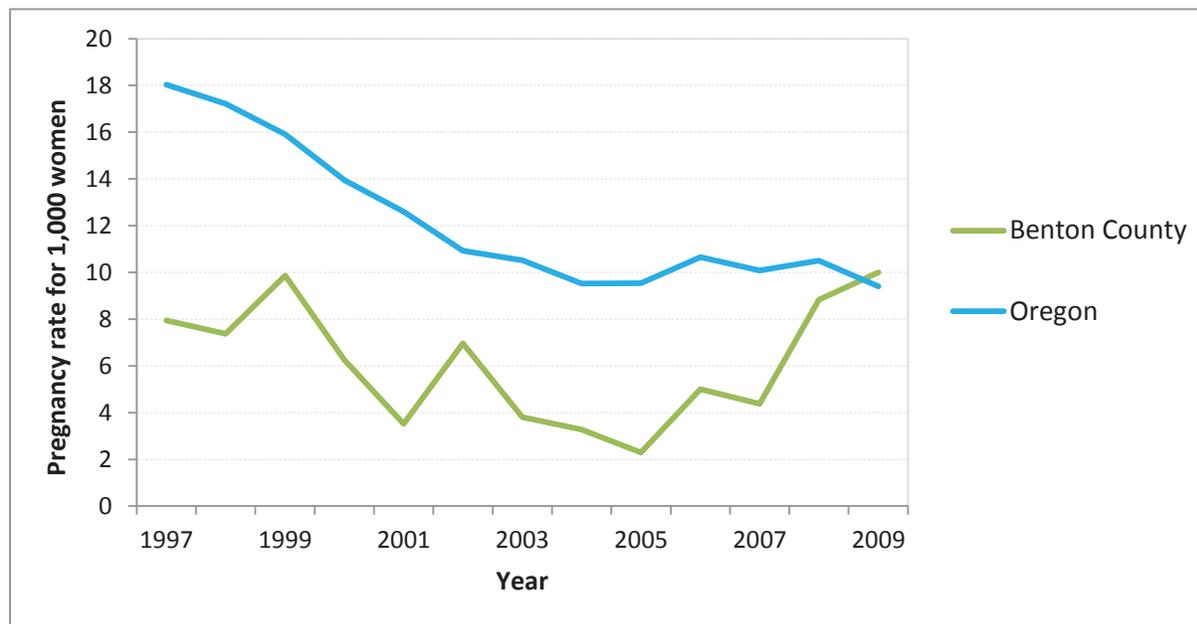
Source: Oregon Department of Human Services: Children, Adults and Families Division 2010 Child Welfare Data Book, March 2011

Teen Parenting

Teen mothers are less likely to receive early prenatal care, and are more likely to experience blood-pressure complications and premature birth. Children of teenage mothers are also more likely to become teen parents themselves, be incarcerated during adolescence, drop out of school, experience more health problems, and are two times as likely to experience abuse and neglect. On average in the United States, 50 percent of teen mothers receive a high school diploma by age 22, compared to 90 percent of women who had not given birth as a teenager.

Benton County teen (ages 10-17) pregnancy rates have continued to increase since 2006, while Oregon rates have decreased. Benton County teen pregnancy rates slightly surpassed Oregon in 2009. In Oregon there are striking differences in teen birth rates by Hispanic and non-Hispanic populations. Hispanic teens have a pregnancy rate that is over 2.5 times higher than non-Hispanic teens. In Benton County, race/ethnicity data is not available for teen pregnancy, and further data collection is needed.

Pregnancy rates for teens (10-17), 1997-2009



Source: Benton County Health Status Report, 2012

Mental and Emotional Health

Psychological Distress

Depression and Suicide Ideation

Suicide is the second leading cause of death among Oregonian ages 15-34, and the 8th leading cause of death among all Oregonians in 2010⁶⁴. Depression is the most common underlying cause of suicide. Many individuals who take their own lives have a diagnosable mental or substance abuse disorder, and most have more than one disorder.⁶⁵ Factors associated with an increased risk of suicide among youth include prior attempts, depression, family discord, substance abuse, relationship problems, discipline or legal problems, and access to firearms.

Protective factors include availability of effective care for mental, physical and substance abuse disorders; access to mental health care; school, social and family support for seeking help; reduced access to lethal means; discussing problems with friends or family; emotional health; strong connections to family and community; and life skills such as problem solving, conflict resolution and anger management.

The following table highlights the percentage of 6th, 8th and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months.

Percent of 6th, 8th, and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months, 2010

	6th grade		8th grade		11th grade	
	Benton	OR	Benton	OR	Benton	OR
Did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	15.1%	17.7%	16.8%	22.1%	19.0%	23.4%
Did you ever seriously consider attempting suicide?	0.0%	0.0%	9.3%	13.9%	11.3%	12.6%
Actually attempted suicide?	0.0%	0.0%	7.2%	9.0%	4.2%	6.6%

Source: Oregon Student Wellness Survey, 2010

***Percentages exclude missing answers. Only the first item was asked on the 6th grade survey*

Gender Identity and Sexual Orientation

Adolescence is a time of developing sexual awareness and gender expression, although many children are aware of their developing gender identity from a very early age. Because most state and national surveys do not ask questions related to sexual orientation or gender identity, it is difficult to estimate the health needs of lesbian, gay, bisexual, transgender, or queer (LGBTQ) children, youth and adults in Oregon and Benton County.

However, all adolescents address issues related to acceptance, self-esteem, and their growing need for intimacy and social connection. LGBTQ youth often face discrimination, social stigma, violence, victimization, and a lack of understanding relating to their unique needs, and this can create significant barriers to health.⁶⁶

As mentioned in Chapter 3, many Benton County 6th and 8th graders reported that they experienced harassment because someone thought they were gay, lesbian, bisexual or transgender at a slightly lower rate than their peers in the rest of Oregon. However, 11th graders in Benton County reported harassment because someone thought they were gay, lesbian, bisexual or transgender at a higher rate than 11th graders in the rest of Oregon.

Physical Activity and Nutrition

Physical Activity

Regular physical activity helps improve overall health and wellness, reduces risk for obesity, and lessens the likelihood of developing many chronic diseases including diabetes, cancer and heart disease. National physical activity guidelines recommend that children engage in at least 60

minutes of physical activity each day, including aerobic, muscle strengthening, and bone strengthening activity. Adults need at least two hours of moderate to vigorous-level activity every week, and muscle-strengthening activities on two or more days a week.⁶⁷

On average in Benton County, middle school and high school youth are exceeding the Healthy People 2020 target of 20.2 percent of youth engaging in physical activity 60 minutes a week. Current available data for Benton County does not include breakdown by race/ethnicity or income level.

Percent of youth meeting CDC recommendations for physical activity: 2005-2008

Year	8th grade	11th grade	Healthy People 2020
2005-2006	30.8%	21.8%	20.2%
2007-2008	26.5%	22.1%	20.2%

Source: Benton County Health Status Report, 2012

Reducing the amount of time youth spend in front of a screen, such as viewing television, videos or playing video games is a key strategy to promote physical activity. The Academy of Pediatrics recommends limiting television and video time to a maximum of 2 hours per day for children over the age of 2 and no exposure to television and or videos (i.e. 0 hours) for children younger than 2 years of age.⁶⁸

In Benton County, middle and high school youth are spending more time in front of screens as the proportion of youth viewing no more than 2 hours a day has decreased.

Percent of youth who view television, videos or play video games for no more than 2 hours: 2005-2008

Year	8th grade	Healthy People 2020	11th grade	Healthy People 2020
2005-2006	72.7%	86.8%	82.2%	73.9%
2007-2008	63.1%	86.8%	67.6%	73.9%

Source: Oregon Healthy Teens

Overall, 64 percent of adults in Benton County meet the CDC guidelines for physical fitness. Like children and youth, data is not available that describes the extent of physical activity among adults by race/ethnicity nor level of household income. In Oregon, participation in physical activity does vary by race/ethnicity, household income and by level of education. Adults with less than a high school education, those earning less \$24,999, and Latinos/Hispanics are less likely to meet CDC physical activity recommendations than their peers.

Percent of adults who meet CDC recommendations for physical activity, 2002-2009

Year	Benton County	Oregon	Healthy People 2020
2002-2005	58.2%	54.7%	47.9%
2004-2007	63.4%	57.9%	47.9%
2006-2009	64.2%	55.8%	47.9%

Source: Benton County Health Status Report, 2012

Eating Habits

Eating a balanced diet has a direct effect on a person's health, growth, and feeling of well-being. Eating a variety of foods, particularly fruits and vegetables, provides essential nutrients, including dietary fiber and potassium.⁶⁹

In Benton County, a higher percentage of 8th graders than 11th graders consume at least 5 servings of fruits and vegetables a day. A smaller percentage of youth in both grades consumed at least 5 servings of fruits and vegetables a day in 2007–2008 than in 2005–2006.

Additional data is needed to identify patterns of consumption by age, race/ethnicity and household income level. More information is also needed to identify strategies for increasing daily consumption of fruit, fruit juice, or vegetables by youths.

Percent of youth consuming at least 5 servings of fruits and vegetables per day, 2005-2008

Year	8th grade	11th grade
2005-2006	29.1%	28.3%
2007-2008	28.8%	23.5%

Source: Benton County Health Status Report, 2012

Approximately one-third of adults in Benton County are consuming at least 5 servings of fruits and vegetables per day. Additional assessment of fruit and vegetable intake by race/ethnicity, age group and income levels is needed for future planning and outreach among adults in Benton County.

Percent of adults who consumed at least 5 servings of fruits and vegetables per day, 2002-2009

Year	Benton County	Oregon
2002-2005	30.1%	25.8%
2004-2007	32.2%	26.6%
2006-2009	31.6%	27.0%

Source: Benton County Health Status Report, 2012

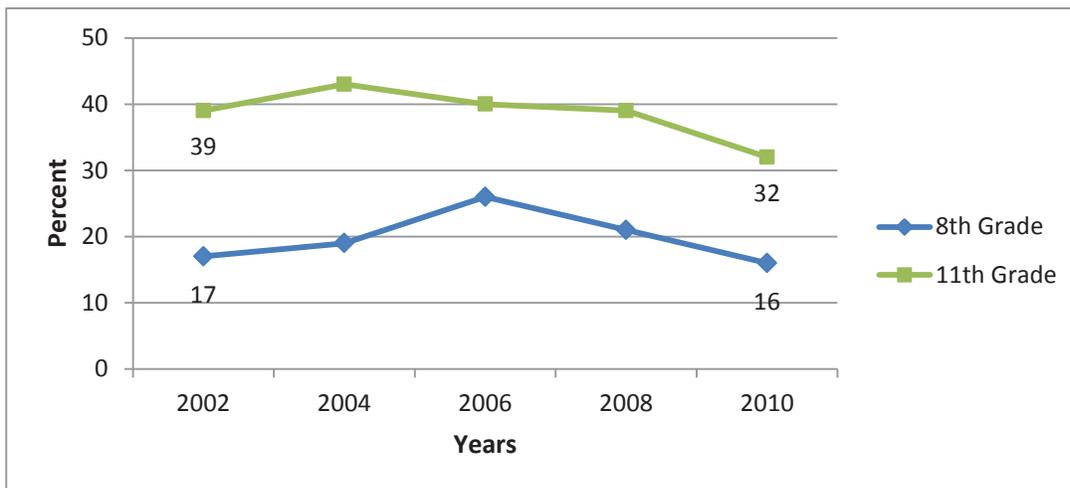
Alcohol, Tobacco, and Prescription Drug Abuse

Alcohol and prescription medications are consumed appropriately and responsibly by most of the population. However problems frequently occur when these substances are over-consumed, used inappropriately, combined with other substances, or consumed while engaging in risky activities like driving or unsafe sexual activity. Smoking cigarettes and using other tobacco products is directly correlated with nicotine addiction and multiple health risks including cancer.

Alcohol Use and Binge Drinking

Excessive alcohol consumption, especially at a young age, can contribute to a number of health issues including heart disease and stroke, high blood pressure, cirrhosis, coma, and death.⁷⁰ The younger a person begins drinking regularly, the greater the chance that person will develop a clinically defined alcohol disorder. Youth who start drinking before the age 15, compared to those who start at 21, are far more likely to be injured while under the influence of alcohol, to be in a motor vehicle crash after drinking, or to become involved in a physical fight after drinking.⁷¹

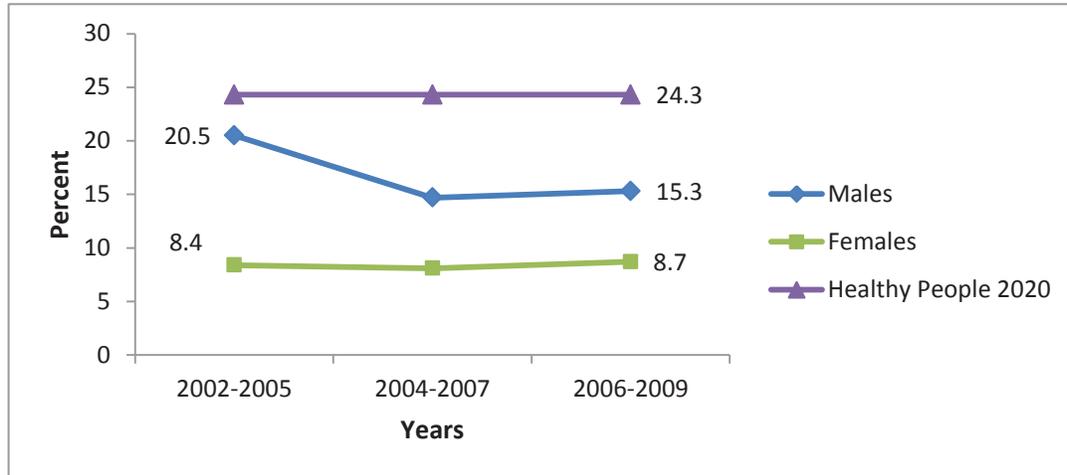
Percent of youth reporting alcohol consumption in the past 30 days, 2002-2010



Source: Benton County Health Status Report, 2012

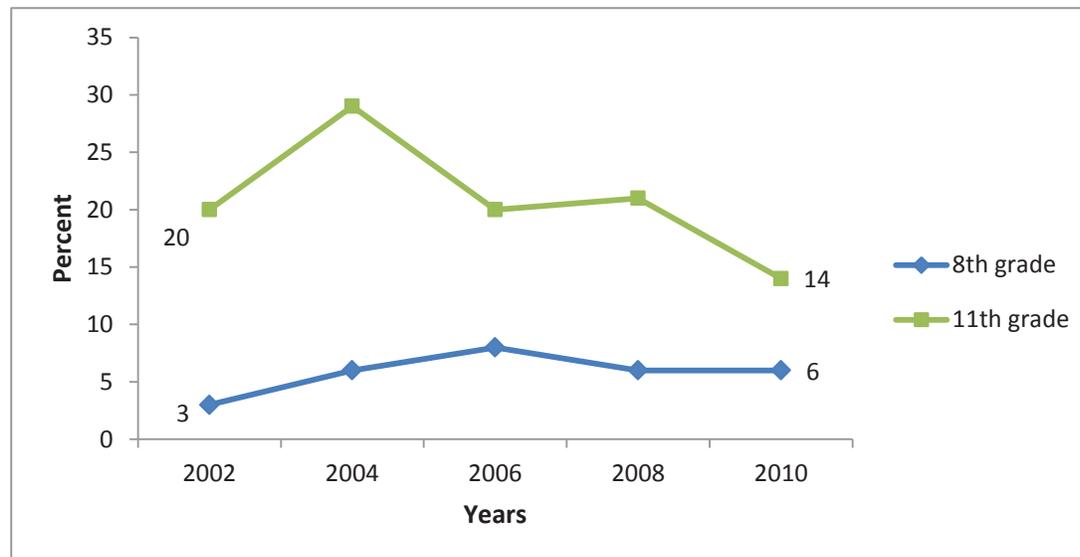
Binge drinking, in which a person consumes a significant amount of alcohol in a short period of time, is associated with the same serious health problems as other forms of alcohol abuse (Binge drinking is defined as consuming five or more drinks at one time for men, and four or more drinks at one time for women).

Percent of adults reporting binge drinking by sex, 2002-2009



Source: Benton County Health Status Report, 2012

Benton County youth and binge drinking in the past 30 days, 2002-2010



Source: Benton County Health Status Report, 2012

In 2011, the Oregon Health Authority-Addictions and Mental Health Division awarded Benton County funding to participate in the Strategic Prevention Framework (SPF) Project and conduct a needs assessment related to underage, excessive, and binge drinking among 18-25 year-olds in Benton County. The process included collection of primary data through key informant interviews, law enforcement interviews, and town hall meetings and review of secondary data. Benton County and the SPF Advisory Group conducted the data review.

The Benton County SPF needs assessment identified the following key themes:

- Rates of high-risk drinking are higher than average among certain sub-populations due to the high social accessibility of alcohol.
- High-risk drinking is socially accepted which indicates a lack of community readiness to change the community norms around high-risk drinking.
- Among 18-25 year-olds, there is a low perception of risk associated with the legal consequences of high-risk drinking due to criminal justice capacity.

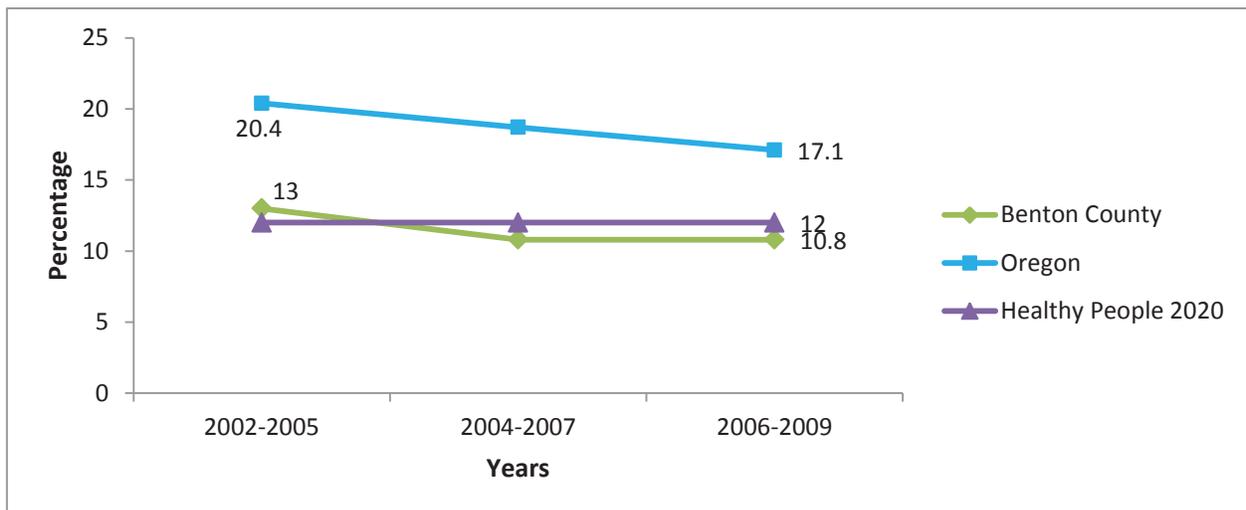
Many efforts are currently underway in Benton County to prevent and/or reduce substance abuse, including federal and state prevention funding, local coalitions working to decrease excessive and underage drinking, SPF advisory group, trainings and educational opportunities, and multiple collaborative inter-agency initiatives.

Tobacco Use and Exposure to Secondhand Smoke

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Tobacco use in any form can cause serious diseases and health problems, including cancers of the lung, bladder, kidney, pancreas, mouth, and throat; heart disease and stroke, lung diseases (i.e., emphysema, bronchitis, and chronic obstructive pulmonary disease), pregnancy complications, gum disease and vision problems.

Benton County has a lower percent of adult cigarette smokers than Oregon. Benton County meets the Healthy People 2020 goal for percent of adults who are current smokers.

Percent of adults who currently smoke cigarettes, Benton County, 2002-2009

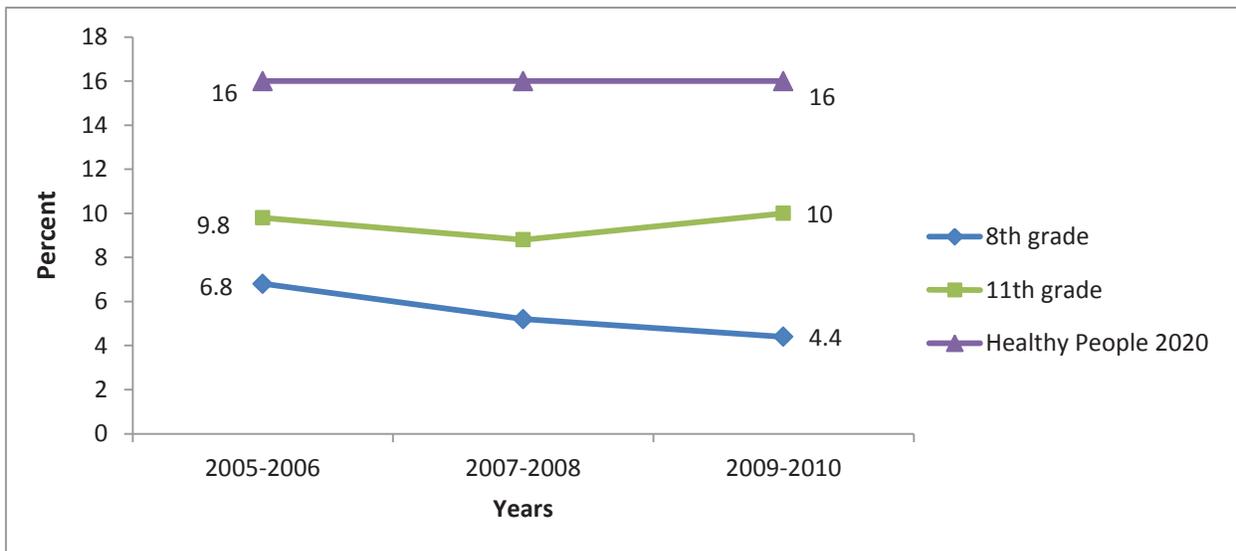


Source: Benton County Health Status Report, 2012

Tobacco products are designed to deliver nicotine, an addictive drug which changes the way the brain works, causing tobacco users to crave repeated doses. Youth are especially sensitive to nicotine and can become dependent more quickly than adults. Because of their dependency, close to three out of four teen smokers continue using tobacco products into adulthood.

Benton County has a lower percent of youth reporting smoking a cigarette in the past 30 days than Oregon. Benton County meets the Healthy People 2020 goal for percent of youth reporting smoking a cigarette in the past 30 days.

Youth and smoking in Benton County, 2005-2010



Source: Benton County Health Status Report, 2012 and Benton County Student Wellness Survey, 2010

Secondhand smoke is a mixture of the smoke exhaled by a person smoking, and the smoke from burning tobacco in a cigarette, pipe, or cigar. Secondhand smoke contains the same toxic chemicals and carcinogens as inhaled tobacco smoke, and even brief exposure has been found to put a nonsmoker's health at risk. In adults, secondhand smoke exposure has been found to cause lung cancer and heart disease. Children exposed to secondhand smoke are more at risk for ear infections, asthma attacks, respiratory symptoms and infections, and a greater risk for sudden infant death syndrome (SIDS).⁷²

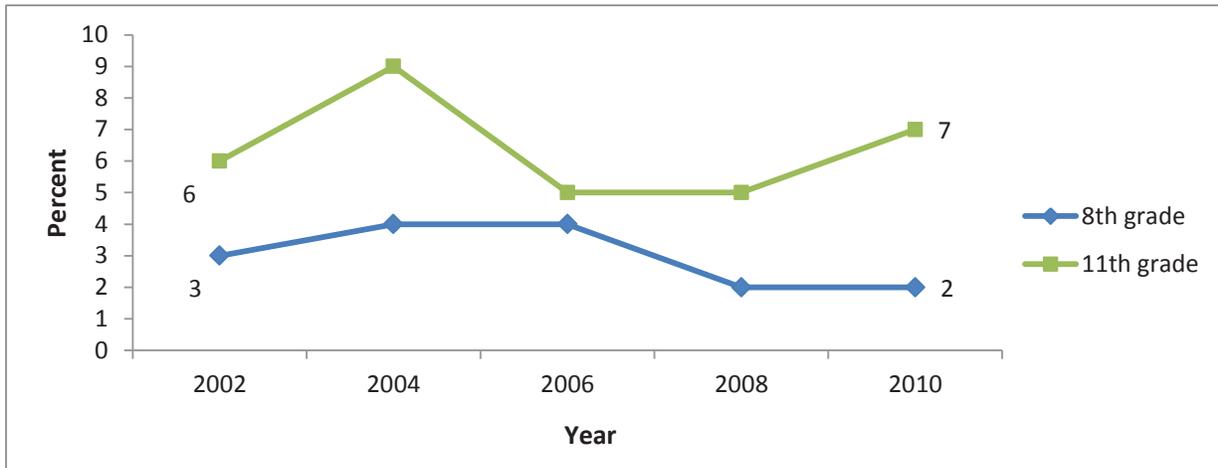
Benton County adopted a landmark Smokefree Workplace Ordinance in 1997 protecting residents and visitors from tobacco smoke in their environment at work. This added momentum to social changes and adoption of voluntary smoke-free rules at home and in cars. Benton County residents report no-smoking rules for their cars at a higher rate than the rest of Oregon (88 percent vs. 83 percent).⁷³

In Benton County, 93 percent of homes have no-smoking rules compared to 90 percent of homes in Oregon as a whole.⁷⁴ Ninety-five percent of Benton County 8th grade students report no smoking inside their home, a significantly higher rate than the rest of the state.⁷⁵

Prescription Drug Use

When prescription drugs are misused or taken without a doctor's prescription they can be just as harmful as illegal street drugs. Rates of improper prescription drug use among youth across the United States are rising. Benton County is no exception.

Percent of youth reporting prescription drug use to get high in the past 30 days, 2002-2010



Source: Benton County Health Status Report, 2012

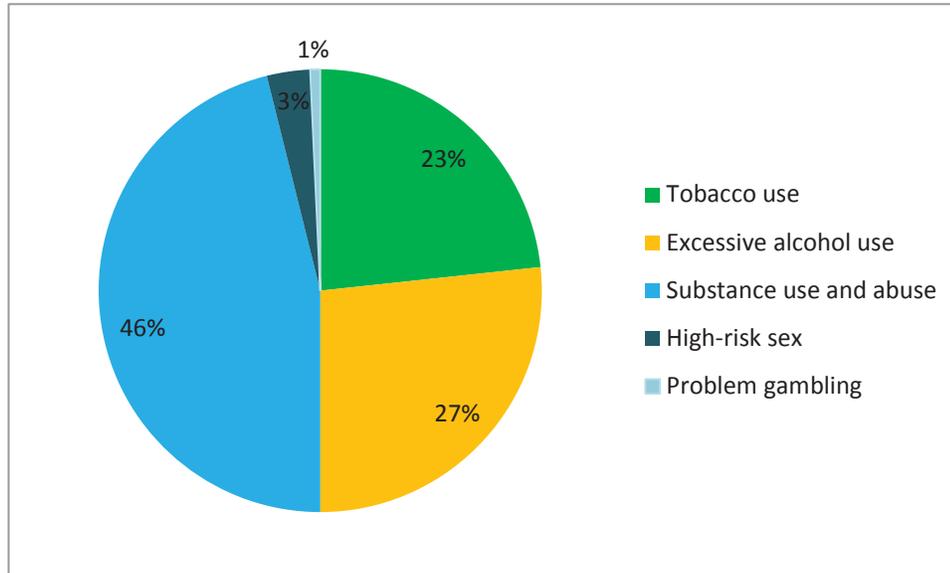
In 2011, Benton County Health Services conducted a series of focus groups among high school youth to identify their perception of youth prescription drug abuse. That survey is currently informing the development of a prescription drug abuse prevention media campaign.

Responses indicated that youth perceive prescription drug abuse among their peers to be greater than what is being reported. Discussions revealed that youth are easily accessing prescription drugs from their parents, friends or family members and rarely purchasing from a drug dealer or stranger. This information is consistent with national research.

Substance Use and Abuse

Results of the Benton County Public Health Services Assessment Survey reveal that residents perceive that substance use and abuse to be the behavioral risk factor that has the greatest impact on the overall health of people in Benton County.⁷⁶

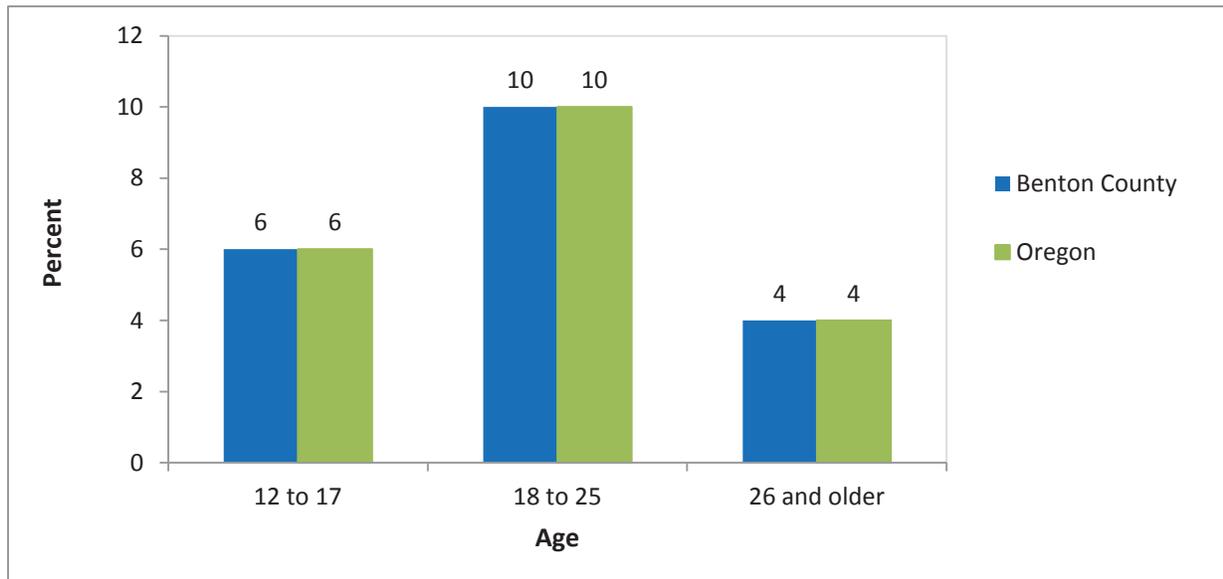
The behavioral risk factor that has the greatest impact on the overall health of people in Benton County, 2012



Source: Benton County Public Health Assessment Survey, 2012

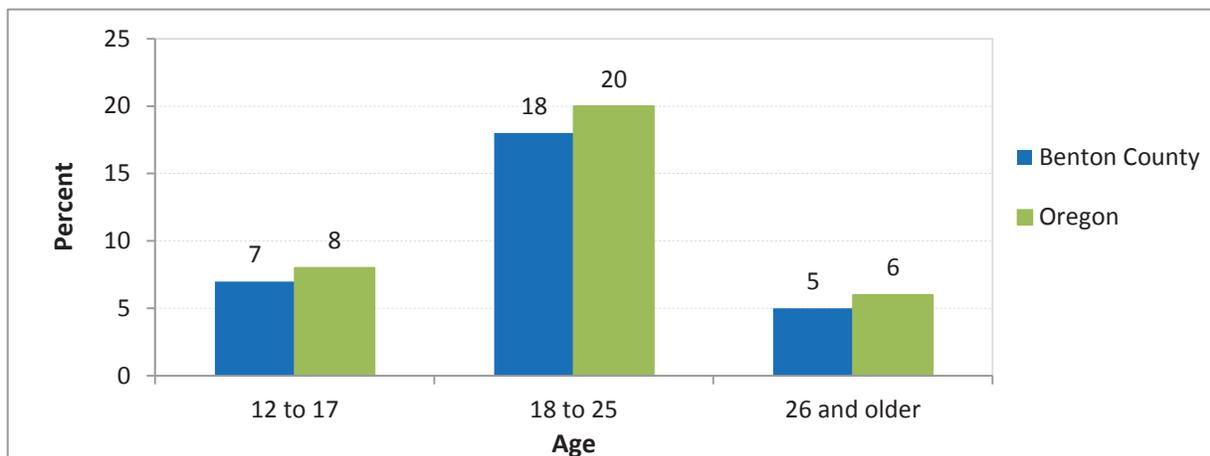
The most recent data available at the county level suggests that use of illicit drugs occurs among 4.0 to 10.0 percent of the population based on age. A slightly higher proportion of residents, 5.0 to 18.0 percent depending on age, report use of marijuana. More recent data on substance use in Benton County is needed to adequately understand current use.

Percent of individuals reporting illicit drug use (excluding marijuana) in the past 30 days by age in Benton County, 2006-2008



Source: Benton County Health Status Report, 2012

Percent of individuals reporting marijuana use in the past 30 days by age in Benton County, 2006-2008



Source: Benton County Health Status Report, 2012

Preventing and Managing Chronic Disease

Cancer Screening

Research shows that screening for cancer is effective in reducing serious consequences of the disease, which is generally more treatable when detected early. Overall, rates of cancer screening are higher in Benton County than the State average. However, additional data is needed to identify rates of screening among race/ethnic populations, age group and income level.

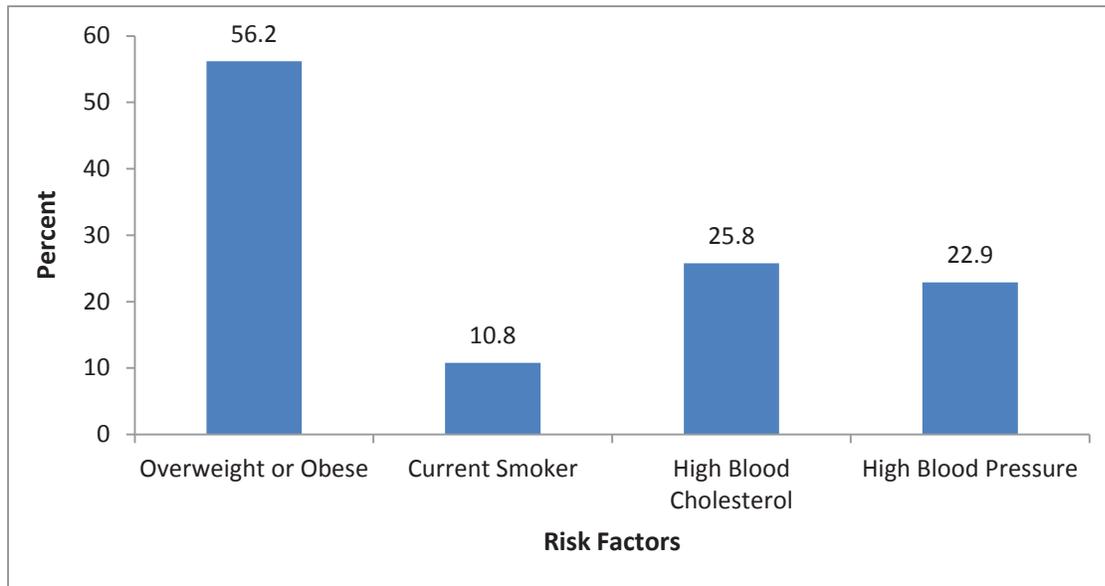
Cancer screening in Benton County and Oregon, 2006-2009

Cancer Screening Practice	Benton County	Oregon	Healthy People 2020
Mammography use among women ≥ 40 years	89.5%	82.0%	81.1%
Pap smear use among women ≥ 18 years	95.1%	85.8%	93.0%
Fecal occult blood test or sigmoidoscopy / colonoscopy among adults aged ≥ 50 years	68.1%	56.8%	*

Source: Benton County Health Status Report, 2012

Preventing Diabetes

Diabetes risk factors among Benton County adults, 2006-2009



Source: Benton County Health Status Report

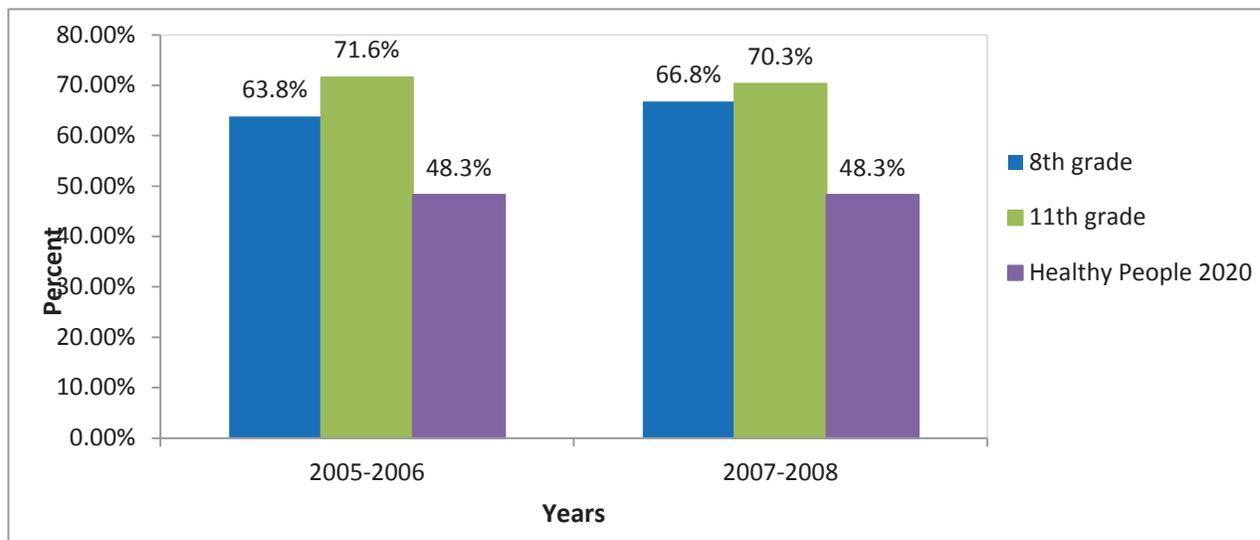
Oral Health

Good oral health is essential to overall physical and mental health, and encompasses more than just dental check-ups. Oral disease can lead to cavities (or caries) and gum ailments, which can in turn contribute to other diseases or conditions. Conversely, certain chronic mental and physical conditions can also contribute to declines in oral health.

Gum disease is associated with endocarditis (an infection of the inner lining of the heart), cardiovascular disease, premature birth, and low birth weight. Osteoporosis can lead to tooth loss, and individuals with diabetes and immune system disorders are more susceptible to gum and bone infections. Poor oral health can also affect self-esteem, reduce employment opportunities, and increase absenteeism.

Among children worldwide, dental caries is the most common childhood disease. Caries are almost completely preventable through optimal water fluoridation, application of dental sealants to children's teeth, effective oral hygiene, and regular preventive visits to the dentist.⁷⁷ In Benton County, the proportion of 8th grade and 11th grade youth who have ever had a cavity is higher than the Healthy People 2020 target of 48.3 percent.

Percent of youth who have ever had a cavity in Benton County, 2005-2008



Source: Benton County Health Status Report, 2010

Achieving and maintaining good oral health is a significant challenge for many people in Benton County, particularly those with lower incomes. A recent community assessment conducted among low income individuals in Benton County found that over 57.1 percent had not seen a dentist in over a year. Of those 26.9 percent had not seen a dentist in within the last 5 years.⁷⁸

Key factors influencing the lack of dental care among low income families in Benton County are unemployment, employment without dental insurance, cost of services and lack of awareness of alternative options for dental care (such as dental vans).

Disease Prevention

Vaccine-Preventable Illnesses

During the 20th century, vaccines served as public health's primary tool for reducing infectious disease. Many diseases that annually sickened and killed thousands of American infants, children and adults are now largely preventable. However, the viruses and bacteria that cause these diseases still exist in our environment, and these illnesses still occur in populations that are not fully immunized.

Modes of transmission and infectiousness vary depending upon the causative organism. Some, such as hepatitis B, are transmitted through direct contact with an infected person's blood or body fluids. Others such as influenza, pertussis (whooping cough) and measles can be transmitted on airborne droplets via coughs and sneezes. Although each disease has its own ecology and patterns of infectiousness, newborn infants, the elderly and people with serious pre-existing medical conditions are typically most susceptible to the worst effects of these illnesses.

Vaccine-preventable diseases can result in expensive doctor visits, hospitalizations, and even death. Sick children miss school and cause parents to lose time from work. It is estimated that every \$1 spent on childhood vaccines saves \$16.50 in future medical costs.

Community Immunity

Vaccinations are given to slow and/or to prevent the spread of infectious diseases through a population. When enough of a population is immunized, most people will be protected because few are susceptible people to catching and spreading an illness. Even those who cannot receive certain vaccines—such as infants, pregnant women and people undergoing chemotherapy—get some protection because germs cannot spread as easily. This is known as "community (or herd) immunity." Most public health experts estimate that between 80% and 90 percent of the population must be protected to maintain community immunity.

In 2010, 72.9 percent of all of Oregon children were fully vaccinated at age 2. In Benton County that rate was slightly lower at 70 percent.

Throughout the US, increasing numbers of people are concerned about vaccines. This is leading to increasing use of "alternative schedules" that delay protection of children. A growing number of parents are refusing some or all vaccinations for their children. In Oregon parents can opt out of mandatory child school vaccinations by signing a religious/philosophical exemption form. There is currently no requirement for medical or public health confirmation; it is strictly a personal choice.

Oregon's kindergarten vaccination exemption rate has increased from 3.9 percent in 2008 to 5.8 percent in 2012. In Benton County the kindergarten exemption rate grew from 5.8 percent to 6.7 percent during the same period.

Sexually Transmitted Illnesses

Despite their burdens, costs, and complications, and the fact that they are largely preventable, Sexually Transmitted Illnesses (STIs), remain a significant public health problem in the United States. The spread of STIs is directly affected by social, economic, and behavioral factors such as poverty, limited access to health care, fewer attempts to get medical treatment, and living in communities with high rates of STIs. Among certain vulnerable populations, historical experience with segregation and discrimination exacerbates the influence of these factors. Many studies document the association of substance abuse with STIs, altering sexual behavior drastically in high-risk sexual networks. Perhaps the most important social factors contributing to the spread of STIs are the stigma associated these illnesses and the general discomfort of discussing intimate aspects of life, especially those related to sex.⁷⁹

Benton County youth and sexual intercourse

Youth who have had sexual intercourse one or more times in their lifetimes	8 th Grade	11 th Grade
2005-2006	6.4%	28.0%
2007-2008	10.7%	31.6%

Source: Oregon Healthy Teen Survey

Research shows that one of the most effective way to prevent the transmission of STIs among youth is to delay the onset of sexual activity. In addition, appropriate and effective use of condoms is also highly correlated to a reduction in STIs among youth.

Condom Use among Teens

Among those who have ever had sex: The last time you had sexual intercourse, did you or your partners use a condom?	8 th Grade	11 th Grade
2005-2006	42.4%	62.8%
2007-2008	71.5%	62.2%

Source: Oregon Healthy Teen Survey

Approximately 12,000 women get cervical cancer in the U.S. annually. Almost all of these cancers are associated with the genital human papillomavirus (also called HPV) virus, the most common sexually transmitted infection. HPV is so common that at least 50 percent of sexually active men and women are identified with HPV at some point in their lives.

In Oregon, 74.3 percent of teen girls (ages 13-17) have completed the HPV vaccination series. This is higher than the national average of 69.6 percent, but fails to meet the Healthy People target of 80 percent of teen girls receiving the HPV vaccine.

Chapter 5

Disease and Injury

Leading Causes of Death in Benton County

Cause-specific mortality

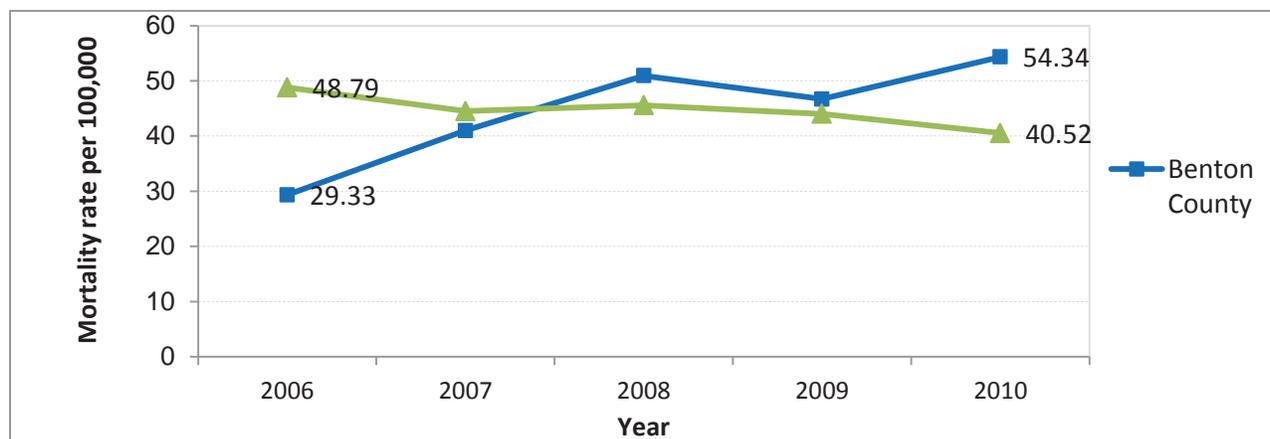
Cancer, heart disease and tobacco-linked diseases are the foremost causes of death in Benton County. The mortality rate associated with strokes in Benton County is higher than the Oregon average, while the tobacco-related mortality rate in Benton County is lower than that of Oregon average.⁸⁰

Benton County top 10 causes of death per 100,000, 2007-2009

Cause of death	Benton County	Oregon
Cancer	154.4	177.9
Heart Disease	115.7	139.7
Tobacco-linked	111.7	165.1
Diabetes related	62.1	84.5
Cerebrovascular disease	54.3	40.5
Chronic lower respiratory disease	25.9	46.5
Alzheimer's disease	24.4	28.7
Unintentional injuries	19.4	37.8
Infectious disease	13.0	14.8
Alcohol-induced deaths	11.8	13.0

Source: Benton County Health Status Report, 2012

Cerebrovascular disease mortality rate in Benton County and Oregon, 2006-2010



Source: Benton County Health Status Report, 2012

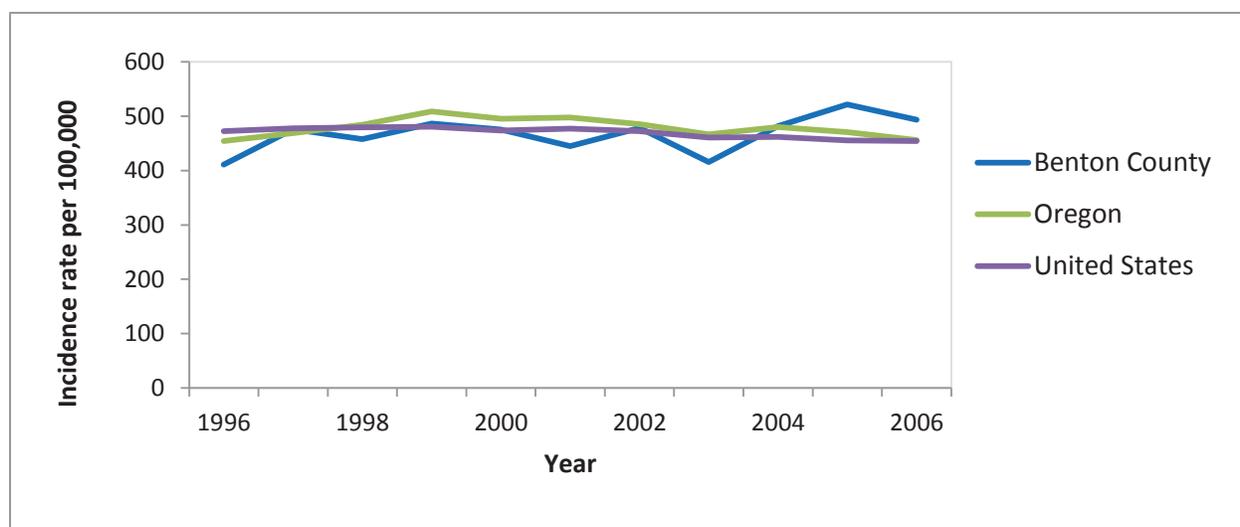
Chronic Disease and Conditions

Chronic diseases, such as heart disease, stroke, cancer and diabetes-are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles (avoiding tobacco, being physically active, and eating well) greatly reduce a person’s risk for developing chronic illnesses. Research show that access to resources that support healthy lifestyles, such as nutritious food, recreational resources, and high quality and affordable prevention measures (including screening and appropriate follow-up) saves lives, reduces disability and lowers medical costs.⁸¹

Cancer

Cancer is the leading cause of death in Benton County. The occurrence of cancer, however, varies by sex, age and race/ethnicity. From 1996-2006, the incidence of all types of cancer in Benton County was consistent with the incidence of cancer throughout Oregon and the United States during the same time period.⁸²

Cancer incidence, 1996 – 2006

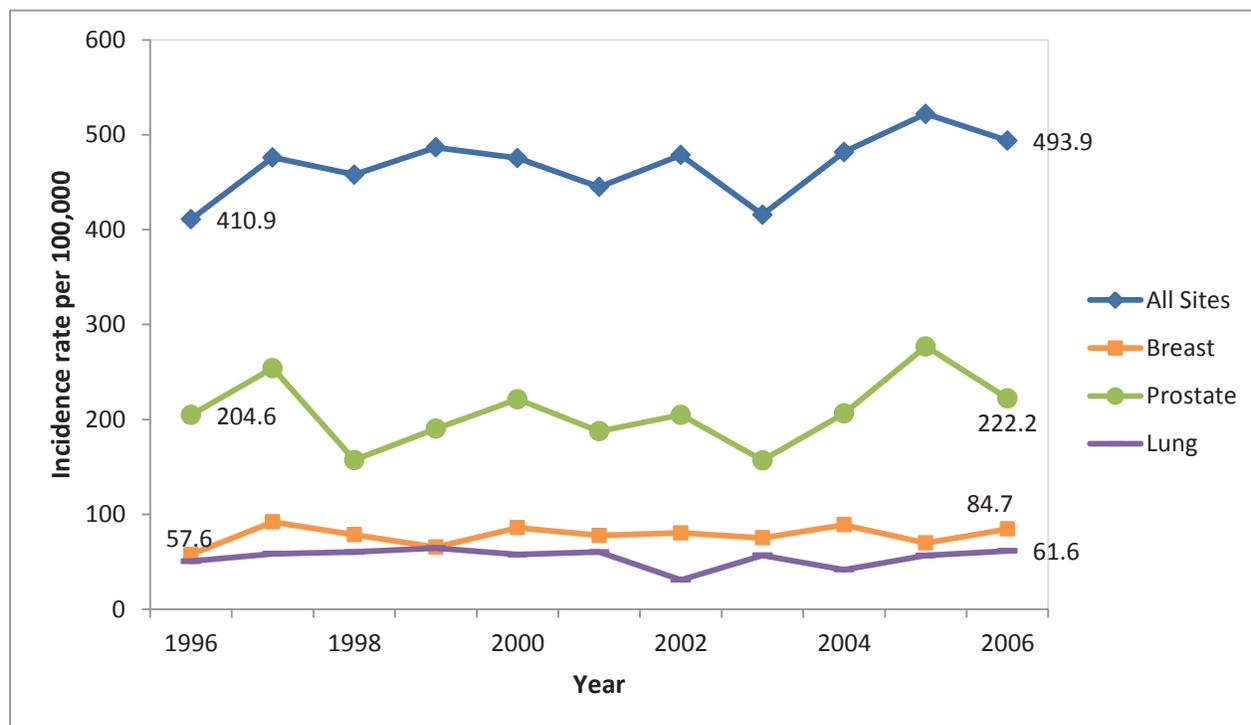


Source: Benton County Health Status Report, 2012

The rate of cancer incidence stayed relatively constant in Benton County between 1996 and 2006.⁸³

- Cancer incidence is between 25 percent and 45 percent higher in males than females
- Cancer incidence increases with increasing age. Between 50 percent and 60 percent of cancer cases are in people over the age of 65 in 2006.
- Prostate cancer is the leading cause of cancer in men with 80 new cases diagnosed in 2006.
- Breast cancer is the leading cause of cancer in women with 64 new cases diagnosed in 2006.
- Lung cancer is the third most common cancer overall in Benton County, however it is the leading cause of cancer death.

Leading types of cancer incidence in Benton County, 1996-2006



Source: Benton County Health Status Report, 2012

Breast Cancer

In 2006, the incidence rate for breast cancer in Benton County was 84.7 per 100,000 individuals. Only a small fraction of breast cancer cases can be linked to genetics.⁸⁴ The rates for Oregon and the United States during this same time period were 69.0 and 122.3 respectively.⁸⁵

Female breast cancer incidence in Oregon is slightly higher than the national rate. Although significant improvements have occurred in early detection and treatment, breast cancer is the leading cause of death for women in Benton County and in Oregon.

State trends in breast cancer are summarized as follows:

- Females are at highest risk for breast cancer.
- Women age 40 and older are at greatest risk for being diagnosed with breast cancer.
- A small percentage of women under the age of 40 develop breast cancer.
- About 85 percent of all women diagnosed with breast cancer do not have a family history of breast cancer.
- Only about 10-15 percent of breast cancers occur as a result of inherited genetic traits.
- Breast cancer in men is rare, but it does occur, and should be recognized as an important area for screening and treatment.
- Race is not considered a factor for increased risk of breast cancer. However, rates of death from the disease differ among ethnic groups. In Oregon, breast cancer is the leading cause of cancer associated deaths among Hispanic and Asian Pacific Islander women.⁸⁶

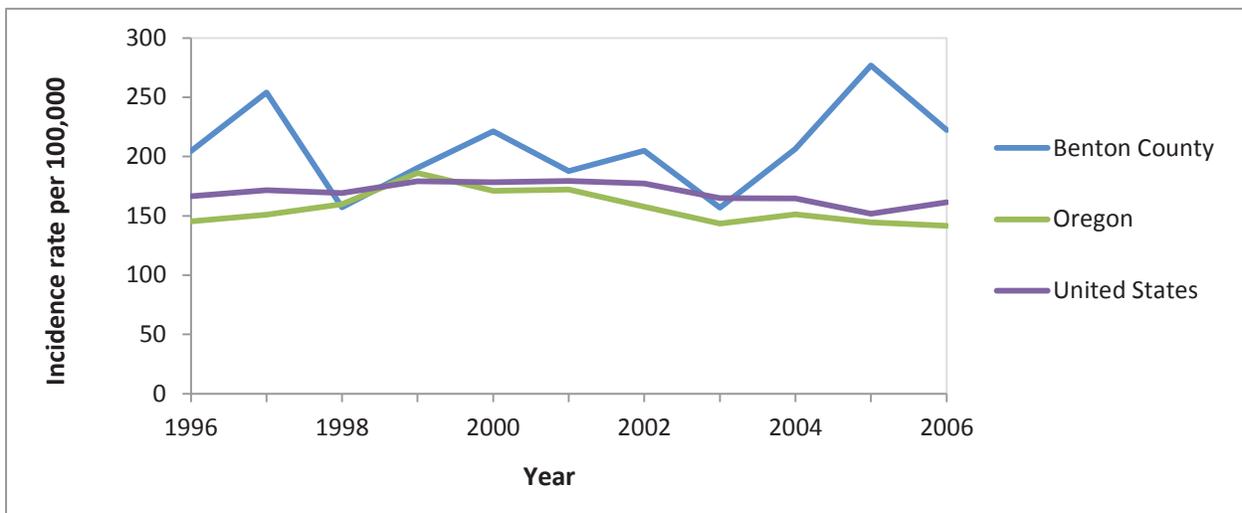
- Some women may be at risk for a later stage diagnosis, due to lack of access or referral to cancer screening services. Women with disabilities and African American women are more likely to be diagnosed at later stages for breast, cervical, and colorectal cancer.⁸⁷

Prostate Cancer

Prostate cancer is the leading site of cancer incidence and mortality for men in Benton County and throughout Oregon.

The incidence of prostate cancer among Oregon men is slightly lower (130.0) than the national rate (137.8). 436 men in Oregon died of prostate cancer in 2009. Prostate cancer mortality in Oregon men is slightly higher than the nationally average.⁸⁸

Prostate cancer incidence per 100,000 in Benton County and Oregon, 1996-2006



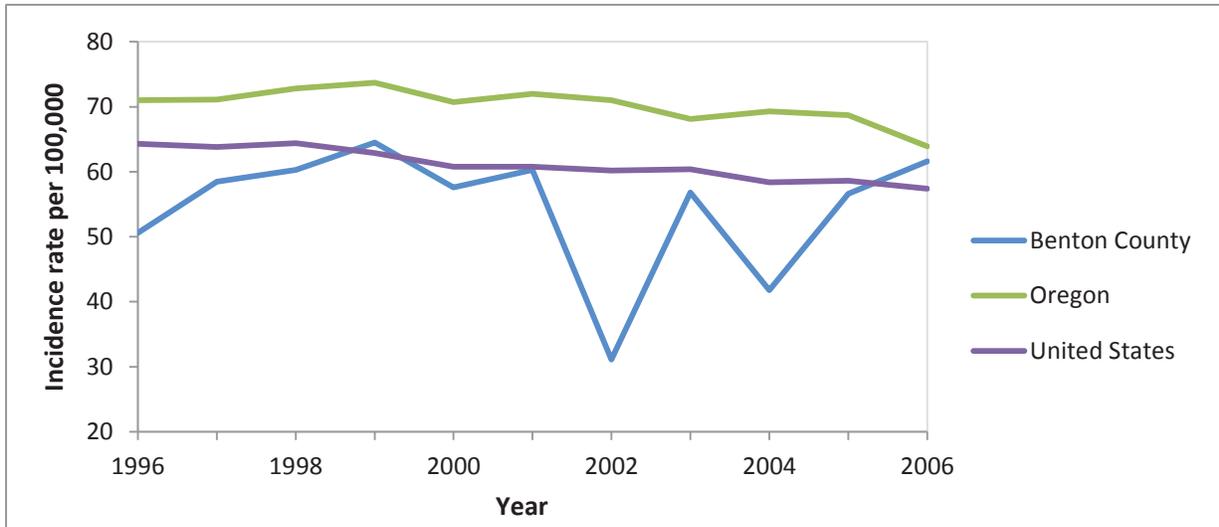
Source: Benton County Health Status Report

Lung Cancer

Lung cancer incidence in men is steadily declining as a result of decreasing smoking rates, but the incidence in women remains relatively flat.⁸⁹ The rate of lung cancer has remained fairly constant in Oregon and the United State.

Lung cancer is the deadliest cancer in Oregon, accounting for 27 percent of cancer deaths in Oregon in 2009.⁹⁰ Overall, the incidence rate in Oregon has been slightly higher than the rates in Benton County and the United States.⁹¹

Lung cancer incidence per 100,000 in Benton County and Oregon, 1996-2006

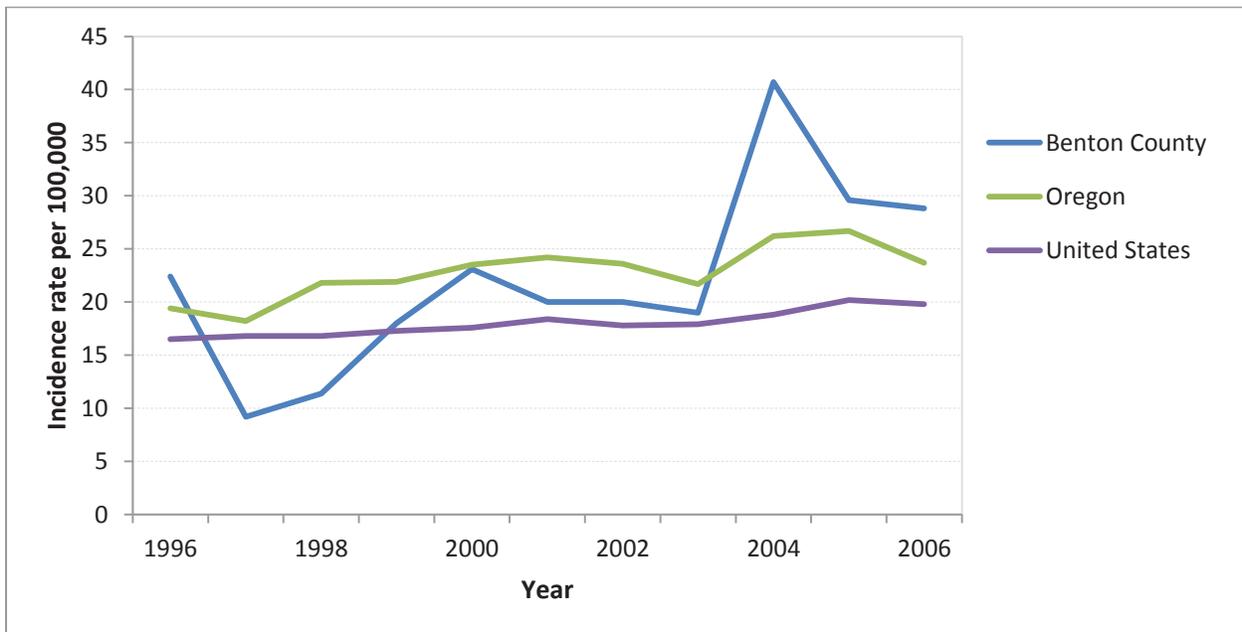


Source: Benton County Health Status Report, 2012

Melanoma

Rates of melanoma have remained fairly constant in Oregon, and in the United States, but have been variable in Benton County. There are so few cases of melanoma in Benton County that a few extra cases of melanoma in a year can significantly change the incidence rate calculation.⁹²

Melanoma incidence per 100,000, 1996-2006



Source: Benton County Health Status Report, 2012

Heart Disease and Stroke

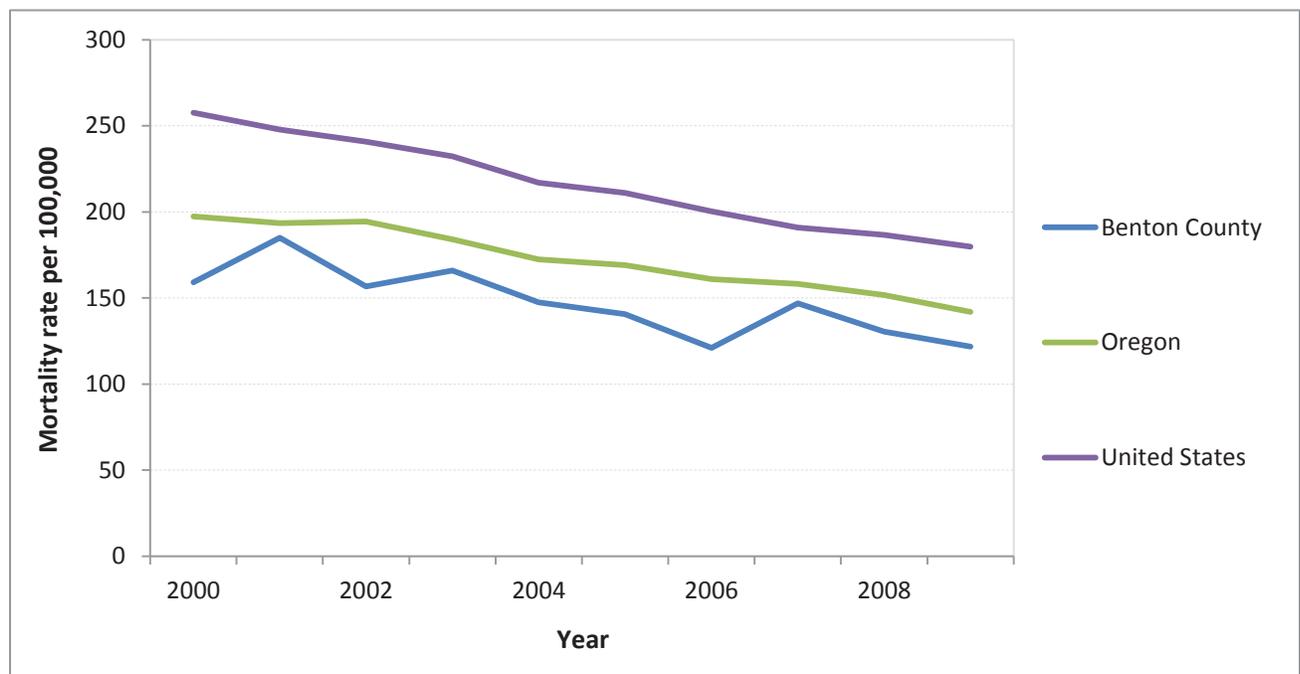
Combined heart disease and stroke surpass cancer mortality rates in Benton County, and are major contributors to costly hospitalizations and disabilities. In Benton County, the heart disease mortality rate is lower (121.7) than the Oregon rate (141.8). Nearly 5 percent of Benton County adults have coronary heart disease. Mortality rates for stroke are decreasing.⁹³

Heart Disease

Mortality

Overall in Benton County, Oregon, and the United States, the rates of cardiovascular disease mortality have declined between 2000 and 2009. Benton County has a lower cardiovascular disease mortality rate than either Oregon or the United States. In 2007, more than 6,600 Oregonians died from heart disease, representing 21 percent of all Oregon deaths.

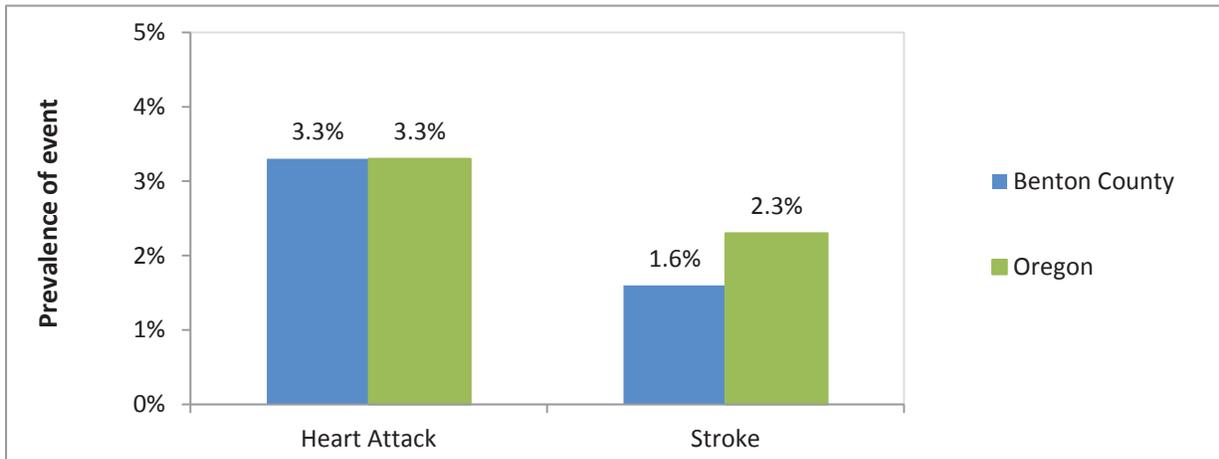
Cardiovascular disease mortality rate per 100,000, 2000-2009



Source: Benton County Health Status Report, 2012

Prevalence of heart attack and stroke

Prevalence of heart attack and stroke, 2010



Source: Benton County Health Status Report, 2012

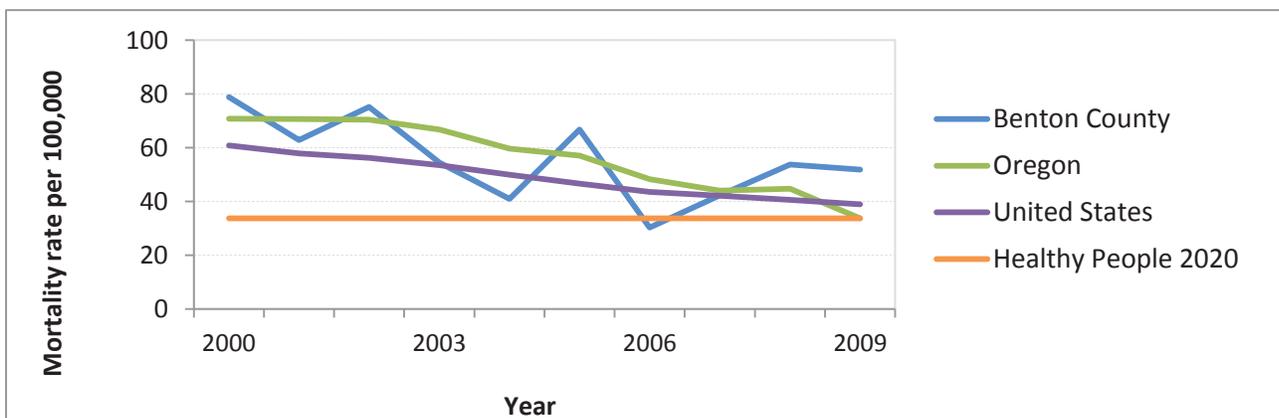
Stroke

Stroke Mortality

Overall in Benton County and in the United States, the rates of stroke disease mortality have declined between 2000 and 2009. However, the stroke death rate is higher in Oregon than in the U.S. In general, rates have remained above the Healthy People 2020 target.⁹⁴

In 2007, more than 1,800 Oregonians died from stroke, representing 6 percent of all deaths in the state.⁹⁵ There are so few stroke deaths in Benton County that a few extra cases in a year can significantly change the incidence rate calculation.

Stroke mortality rate per 100,000, 2000-2009



Source: Benton County Health Status Report, 2012

Disease and Risk Factor Prevalence

Approximately, 4.7 percent of Benton County adults experienced a heart attack or angina and 1.6 percent of adults are stroke survivors.⁹⁶

High blood pressure and high cholesterol are significant risk factors associated with heart disease and stroke. Lifestyle factors contributing to these conditions include unhealthy weight, physical inactivity, poor nutrition, tobacco use and diabetes. These factors also increase the risk for heart disease and stroke.⁹⁷

Health factors for heart disease and stroke among Benton County adults include:⁹⁸

- 23 percent of adults had high blood pressure
- 26 percent had high blood cholesterol level
- Over 6 percent had a diagnosis of diabetes

Lifestyle behaviors for heart disease and stroke among Benton County adults:⁹⁹

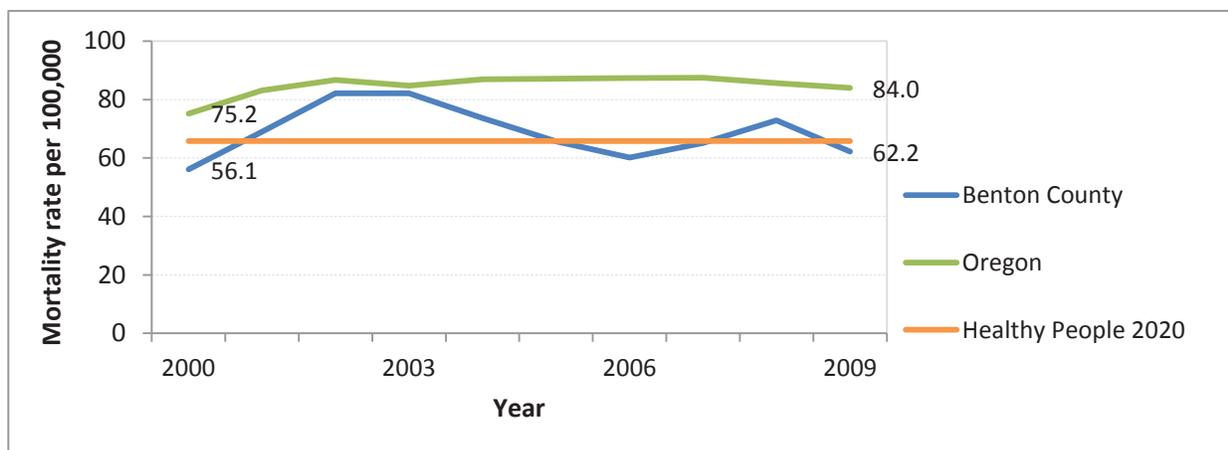
- 35 percent are classified as overweight
- 22 percent classified as obese
- 11 percent who currently smoke

Diabetes

Diabetes Mortality

In general, diabetes related mortality has been increasing since 2000 in Benton County, but is lower than that of the rest of Oregon. In 2009 Benton County's diabetes related mortality rate was lower in females (52.1) than males (73.3). As a result, females in Benton County are meeting the Healthy People 2020 target for diabetes related mortality (65.8) but males are not.

Diabetes-related mortality per 100,000 in Benton County and Oregon, 2000-2009

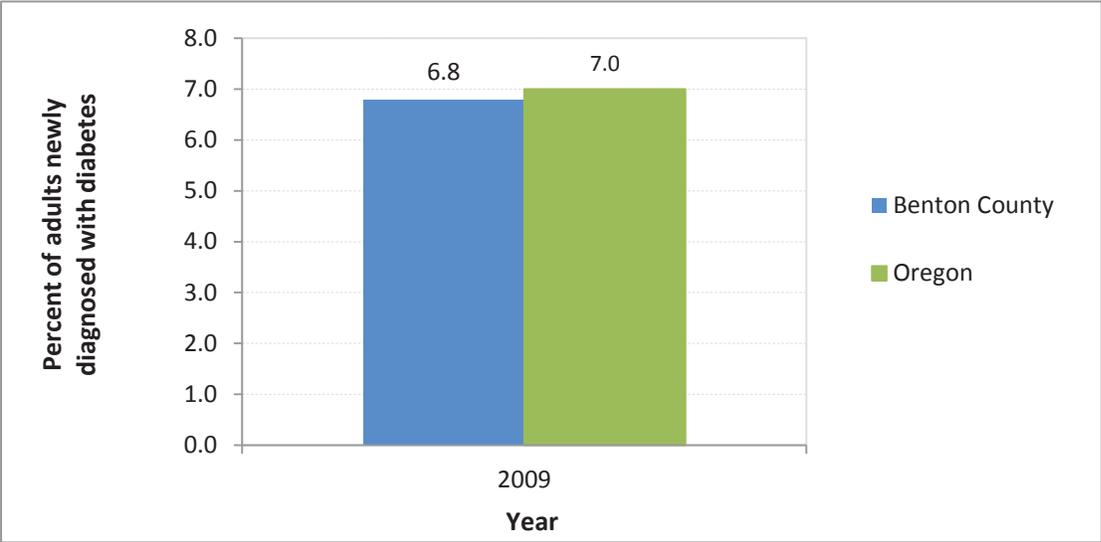


Source: Benton County Health Status Report, 2012

Newly diagnosed diabetes in adults

An estimated 6.8 percent of Benton County adults have been diagnosed with diabetes. This estimate may be conservative, however, as many people are unaware of their status since diabetes often develops gradually so symptoms and complications can take years to manifest themselves.¹⁰⁰

Age adjusted estimates of percent of adults newly diagnosed with diabetes, 2009

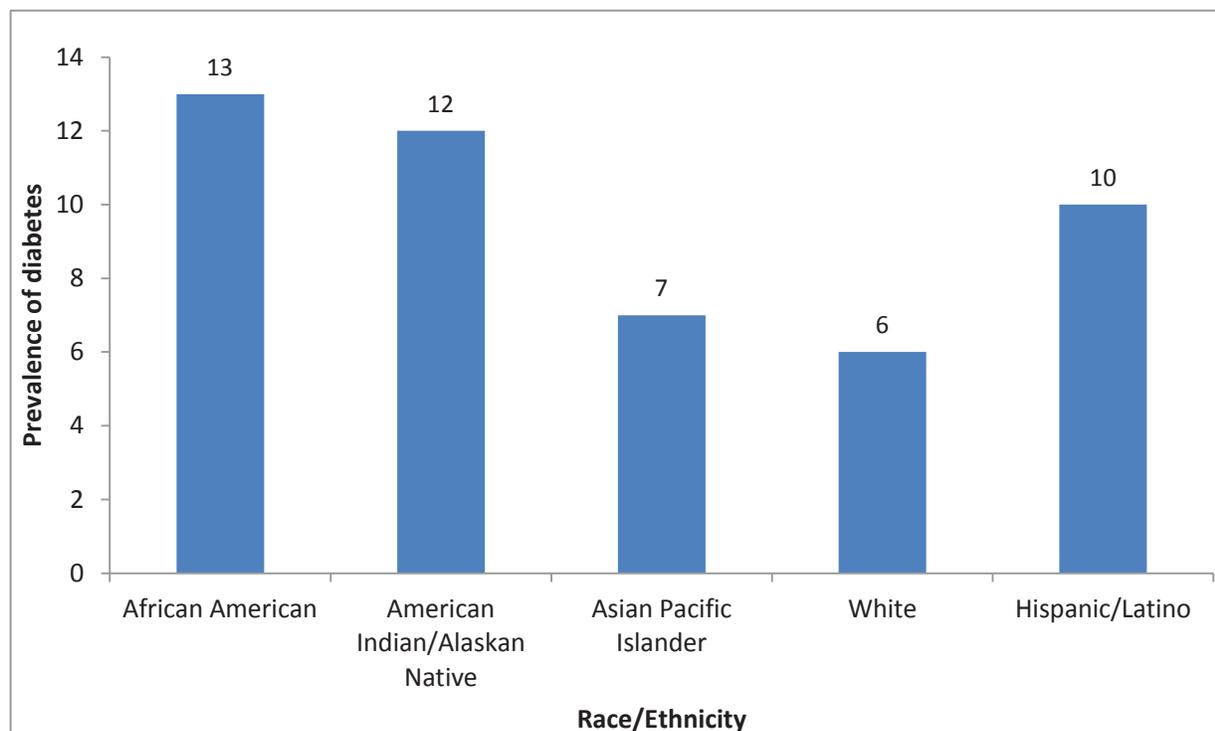


Source: Benton County Health Status Report, 2012

The growing burden of diabetes affects everyone in Oregon, but rates vary by age, race/ethnicity, and household income.¹⁰¹

- Diabetes prevalence increases with age; adults under 45 have the lowest rates of diabetes (2 percent), while 16 percent of adults aged 65 years and older have been diagnosed with disease.
- Oregon’s Hispanic, African American, and American Indian/Alaska Native communities have significantly higher rates of diabetes than do non-Hispanic Whites.
- Economically disadvantaged Oregonians, those with household incomes at or below the federal poverty level, have a significantly higher rate of diabetes (9.7 percent) than those with higher household incomes (5.7 percent).

Diabetes Prevalence by Race/Ethnicity in Oregon, 2004-2005



Source: Oregon Public Health Division, BRFSS Race oversample 2004-2005

Obesity

Obesity contributes to the death of about 1,400 Oregonians each year, making it second only to tobacco as a preventable cause of death. Overweight and obesity are also major risk factors for development of chronic diseases including as diabetes, cancer, high blood pressure, high cholesterol, arthritis, heart disease and stroke.

Today, about 60 percent of Oregon adults are overweight or obese, as well as more than a quarter of all eighth graders. Since 1990, Oregon’s adult obesity rate has increased 121 percent. If Oregon continues on this trajectory, children born today will not live as long as their parents or grandparents.¹⁰²

Prevalence of Obesity in Benton County, 2006-2009 (adults) and 2007-2008 (youth)

	Benton County	Oregon
Adults overweight	35.4%	36.1%
Adults obese	20.8%	24.5%
8th grade overweight	11.7%	15.2%
8th grade obese	6.6%	10.7%
11th grade overweight	12.6%	14.2%
11th grade obese	8.0%	11.3%

Source: Benton County Health Status Report, 2012

Alzheimer's disease

Alzheimer's disease is the most common form of dementia, which is a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life. Alzheimer's disease accounts for 60 to 80 percent of all cases of dementia.

Alzheimer's is the seventh-leading cause of death in Benton County. In 2010, the Benton County cause-specific mortality per 100,000 for Alzheimer's was 24.4 compared to Oregon at 28.7.¹⁰³

It is anticipated that the number of Oregonians with Alzheimer's disease and Related Dementia will increase significantly in the next two decades. Currently, about 76,000 Oregonians live with Alzheimer's disease and this number is expected to increase to 110,000 by 2025.¹⁰⁴

Arthritis

Arthritis continues to be the most common cause of disability, affecting one in five Americans. Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues and other connective tissues. The two most common types are osteoarthritis and rheumatoid arthritis.

The percentage of adults in Benton County diagnosed with arthritis is 27.9 percent compared to Oregon at 25.8 percent.¹⁰⁵

Older adults in Oregon are disproportionately affected by arthritis. Prevalence of arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men because they live longer than men. The growth of the aged population will add to the high prevalence of arthritis in the coming decades.

Asthma

During the past 20 years, asthma has become one of the most common chronic diseases in the United States. Oregon has among the highest asthma rates in the nation.¹⁰⁶ Asthma results in direct costs (e.g., hospitalizations and emergency department visits) and indirect costs (e.g., missed school and work days and days of restricted activity) as well as impacts the quality of life for people with asthma and their families.

Asthma prevalence in adults

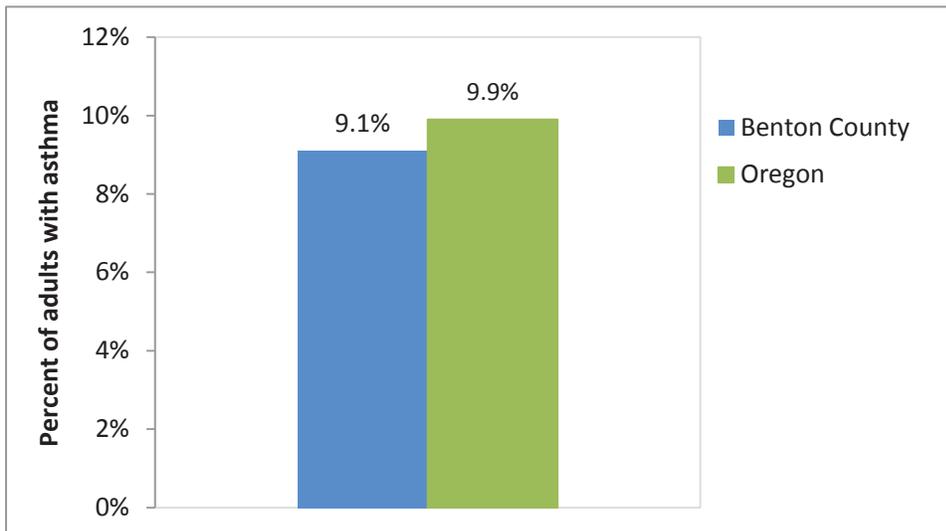
Nine percent of adults in Benton County have asthma, which is slightly lower than the rest of Oregon (9.9 percent).¹⁰⁷ For the past 10 years, the percent of Oregonians with current asthma has been slowly trending upward and from 2003-2010, Oregon ranked among the top 10 states with the highest percentage of adults with asthma in the nation.¹⁰⁸ The rate of hospitalization due to asthma is generally lower in Benton County (3.7) compared to the State (5.9).¹⁰⁹

Common Asthma Triggers

- Tobacco smoke and other smoke
- Animals with fur or feathers
- Dust mites and cockroaches
- Mold or mildew
- Pollen from trees, flowers, and plants
- Being physically active
- Air pollution
- Breathing cold air
- Strong smells and sprays
- Illnesses, such as influenza and colds

Source: OHA (2010) The Burden of Asthma in Oregon

Prevalence of asthma among adults in Benton County and Oregon, 2006-2009

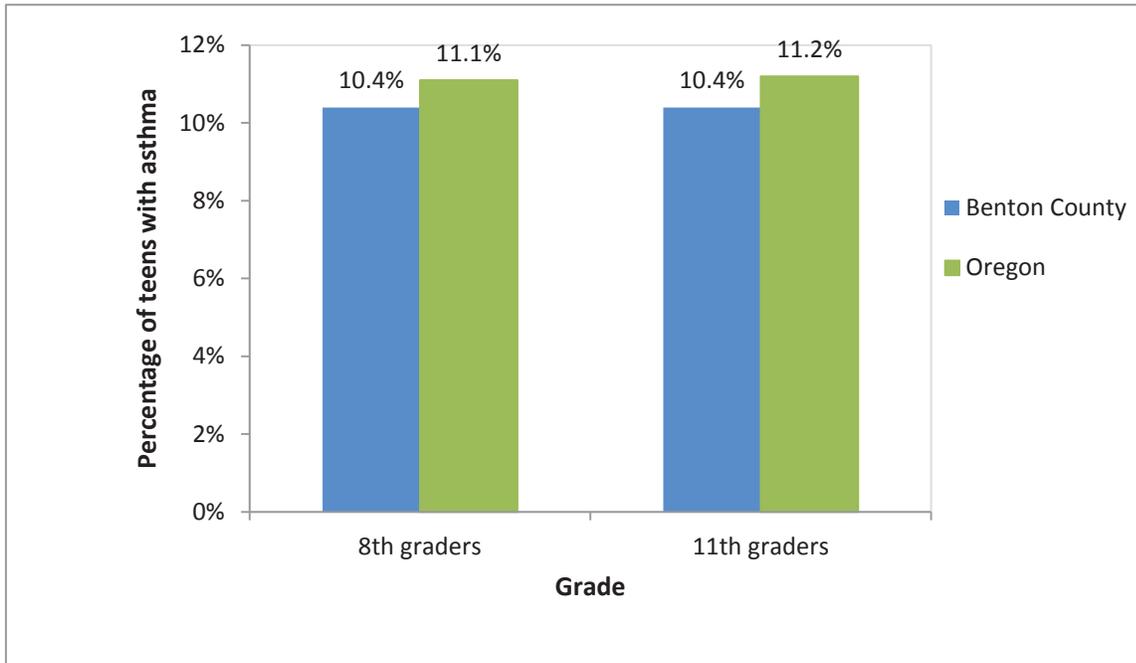


Source: Benton County Health Status Report, 2012

Prevalence of asthma in teens

Approximately 10 percent of 8th and 11th graders in Benton County report an asthma diagnosis. This is slightly lower than the state average.¹¹⁰

Percentage of teenagers with asthma, 2007-2008



Source: Benton County Health Status Report, 2012

Detailed information on the prevalence of asthma among sub-populations in Benton County is not currently available. However results from state-wide surveillance suggest that prevalence varies by race/ethnicity, level of education, sexual orientation and household income.

Prevalence by Race/Ethnicity, Level of Education, Sexual Orientation and Household Income for Adults with Asthma in Oregon

Population characteristic	Prevalence
African American	15.5%
American Indian/Alaska Native	15.2%
No high school	17.0%
Homosexual/Bisexual*	24.0%
Household income < \$15,000"	19.0%
Household income \$15,000 to \$25,00"	14.0%

Source: Oregon BRFSS Race/Ethnicity oversample, 2004-2005

"Oregon BRFSS, 2009

* Oregon Behavioral Risk Factor Surveillance System (Based on a small sample size)

Mental Health Conditions

Mental health disorders are experienced by people of all ages, from early childhood through old age.

Research suggests that only about 17 percent of U.S. adults are considered to be in a state of optimal mental health. An estimated 26 percent of Americans age 18 years and older are living with a mental health disorder in any given year, and 46 percent will have a mental health disorder during their lifetime.¹¹¹

In Benton County, it is estimated that 2,186 persons between the ages of 16 and 64 are living with an identified mental health disability. Of these, 31.5 percent are unemployed and 17.6 percent live below the federal poverty level.¹¹²

National research indicates that on average, people with serious mental illness die 25 years earlier than the general population. Sixty percent of those deaths are due to medical conditions such as cardiovascular disease, diabetes, respiratory diseases, and infectious illnesses; 40 percent are due to suicide and injury.¹¹³

There is a strong link between chronic disease, injury and mental illness. Tobacco use among people diagnosed with mental health conditions is twice that of the general population. Other associations between mental illness and chronic disease include cardio-vascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer. Injury rates for both intentional and unintentional injuries are 26 times higher among people with a history of mental health conditions than for the general population.¹¹⁴

Approximately 3,400 adults with mental illnesses are incarcerated in prisons in Oregon.¹¹⁵

Oregon's Mental Health services delivery system is inadequate to meet the needs of this population, providing mental health services to only 46 percent of adults who live with a severe mental illness.

Demand versus ability to serve persons with Mental Illness and Substance Use Disorder in Oregon, 2010

Age	Prevalence	# served in Oregon's mental health system	Percent of need met
Addictions			
17 and under	26,765	6,635	25%
Over 17	235,516	56,138	24%
Mental Health			
17 and under	105,306	34,617	33%
Over 17	154,867	71,204	46%

Source: Oregon: Integrating Health Services for People with Mental Illness or Substance Use Disorders, Oregon DHS, Oregon Health Authority, Jeanene Smith, MD, MPH, June 2010

Many mental health disorders can be treated effectively, and prevention of mental health disorders is a growing area of research and practice. Early diagnosis and treatment can decrease the disease burden of mental health disorders as well as associated chronic diseases. Assessing and addressing mental health remains important to ensure that all Americans lead longer, healthier lives.¹¹⁶

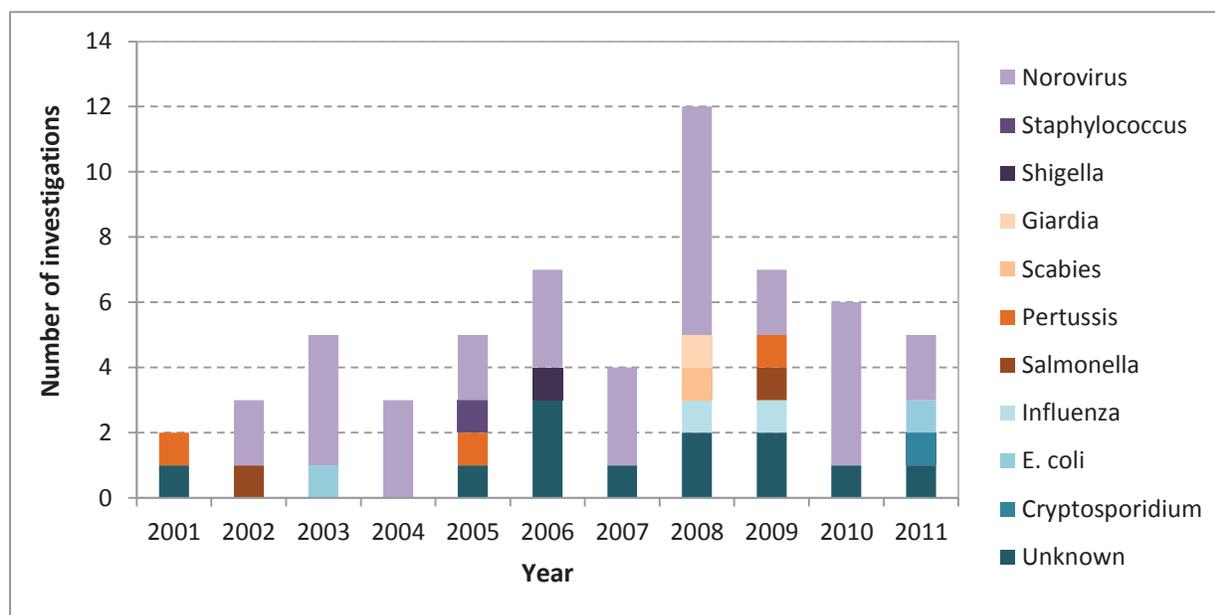
In Oregon, the provision of effective mental health service has been shown to lead to positive outcomes, including a dramatic drop in arrests; reduction in the likelihood and duration of incarceration; and fostering of self-sufficiency and well-being as a result of improved social, emotional and vocational functioning.¹¹⁷

Infectious Diseases

Prevention and control of infectious illnesses ranks among the greatest health advances of the 20th century. Infectious diseases are those that can be passed from person to person. Some are transmitted via ingesting contaminated food or water. Many are spread by germs in coughs or sneezes, while others result from exposures in the environment or insect bites. Those spread through contact with or bites from animals are called zoonotic infections.

Benton County Health Department’s communicable disease nurses investigated 272 reports of infectious illnesses during the first 6 months of 2012. While these illnesses are not uncommon in Benton County, they are not represented among the most significant causes of disability and death. This is primarily due to effective prevention (mostly via vaccination) and modern medical treatments, averting the massive death rates that occurred before the discovery of antibiotics in the mid-20th century.

Total number of outbreak investigations by disease, Benton County 2001-2011



Source: Benton County Health Status Report, 2012

Respiratory Illnesses

Illnesses like the flu spread from person to person when droplets from a cough or sneeze of an infected person move through the air and enter the mouth or nose of people nearby. Some of the germs in these droplets can also live on surfaces for hours such as desks or doorknobs, and can spread when people touch these surfaces and then touch their eyes, mouth, and nose.

- The “common cold” and influenza are the most common respiratory illnesses. However, local, state and national statistics for these diseases are difficult to ascertain because doctors and laboratories are not required to report them to public health authorities. This is because most people experience only mild, short-term illness and do not seek medical attention, the illnesses are difficult to differentiate, and most are treated symptomatically rather than curatively.
- Less common but more serious respiratory illnesses include pneumonia, pertussis (whooping cough) and tuberculosis.
- On average there are 2 cases of infectious tuberculosis in Benton County each year. These are actively managed and curative therapy is overseen by Public Health Nurses.
- Pertussis is a very contagious bacterial infection that causes a coughing illness which may last 6-10 weeks or longer. It is an endemic disease with epidemic peaks occurring every 2–7 years and has proven painfully persistent despite widespread childhood immunization.
- There has been a sharp rise of pertussis in the United States during 2012. Washington State has been particularly hard-hit and declared a pertussis epidemic in April 2012, reporting almost 10 times more cases of pertussis than 2011. Oregon has seen as many cases, but there have been twice as many pertussis cases in 2012 as there were in 2011.
- While Benton County sees less than a dozen cases of pertussis annually, a serious pertussis outbreak occurred in 2004 -2005 when 297 cases were medically confirmed. In addition, hundreds of people became ill with presumed pertussis, but were not laboratory tested (largely due to the cost of testing or the fact that a known infectious person lived in their home or shared their classroom or work). This outbreak resulted in dozens of students missing school, sports, and other activities for long periods of time. In addition, many parents struggled with lost sleep and work time as a result of caring for their sick children, or because they became sick themselves.

Foodborne Illnesses

The Centers for Disease Control and Prevention (CDC) estimate that each year 1 in 6 Americans (48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases.¹¹⁸

The leading causes of foodborne illness are norovirus, Salmonella, Campylobacter, and Clostridium perfringens. Norovirus, Salmonella, and Campylobacter are also among the leading causes of death due to foodborne illness.

On average, Benton County has five foodborne illness outbreak investigations each year. Sixteen Benton County residents were diagnosed with foodborne illnesses during the first 6-months of 2012.

Overall, norovirus is the most common outbreak source in Benton County. What makes the norovirus so dangerous (and common in close quarters like shared homes, apartments and fraternities/sororities) is that it is easily transmitted from infected people via contaminated food or water or by touching contaminated surfaces. This occurs through contact with human feces (stool). This type of contact is generally accidental and occurs when an infected person does not properly wash hands after using the bathroom and then touches food that others will eat.

E. coli infections, most commonly O157:H7, is another significant causative organism and around 5 to 10 percent of those who are diagnosed with the infection develop potentially life-threatening complications. Oregon's rate (1.8 per 1000,000 in 2011) has been consistently higher than that the United States as a whole (0.9 per 100,000 in 2011). Benton County had 8 reported cases in 2011.¹¹⁹

Reportable Infectious Diseases

All physicians, health care providers and laboratories in Oregon are required by law to report confirmed or suspect diagnoses of over 50 infectious diseases and conditions to their local health departments. Those reports are directed through counties to the Oregon Public Health Division which collects and distributes data to inform health departments, physicians and the public. Reporting enables appropriate public health follow-up for patients, helps identify outbreaks, and provides a better understanding of disease transmission patterns.

Some diseases are subject to restrictions on school attendance, day care attendance, patient care, and food handling.

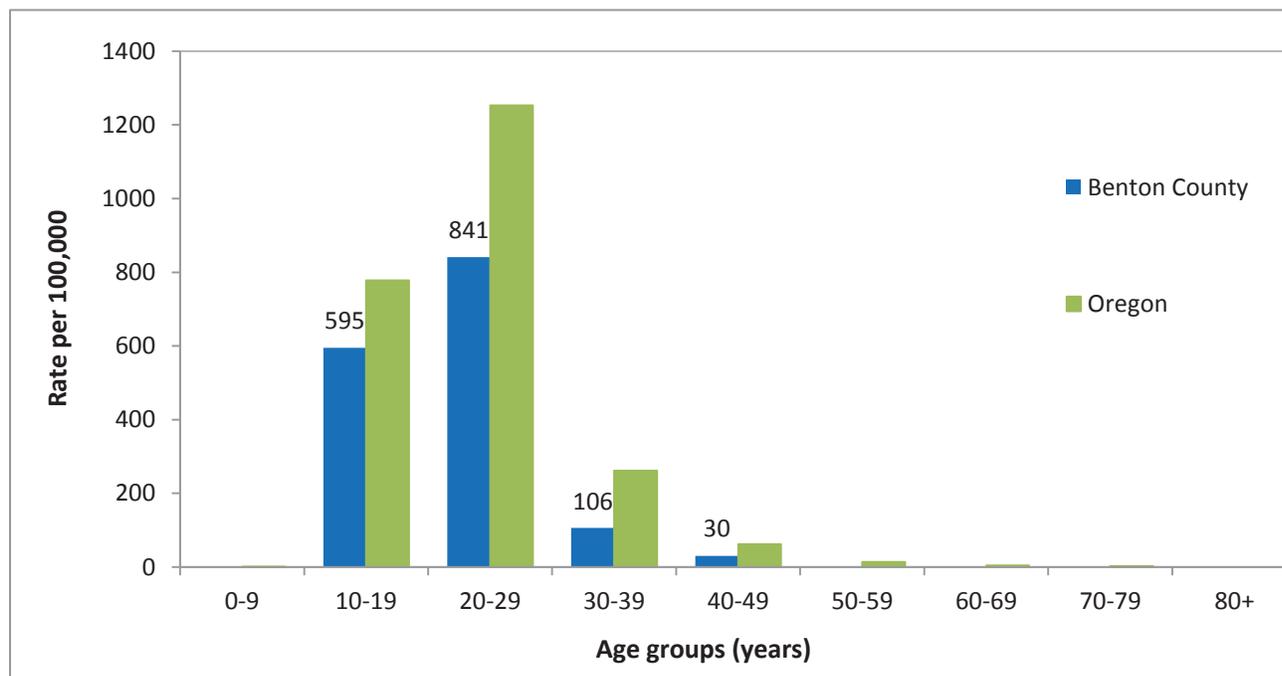
County health departments are required to imitate investigations of each report in a timely manner and all follow standardized "investigative guidelines" that assure standardized, evidence-based methodologies and interoperability between jurisdictions. Investigations are conducted in adherence with rigorous confidentiality guidelines, though to facilitate protection of the entire population, federal law exempts public health disease investigations from much of the standard medical confidentiality law (HIPPA).

Sexually Transmitted Infection

Chlamydia is the most common sexually transmitted infection (STI) in Oregon with infection rates increasing 11 percent from 2010 to 2012 and accounting for 59 percent of all reportable diseases in Oregon.

Benton County mirrors that increase with 306 cases reported during 2011 and 186 cases diagnosed during the first 6 months of 2012. STI's are particularly prevalent in Benton County because of the large population of young adults. Benton County Health Department works closely with Oregon State University (OSU) Student Health Services, and OSU has been recognized nationally for its outstanding sexual health and prevention programs.

Chlamydia incidence rates by age, Benton County, 2010



Source: Benton County Health Status Report, 2012

Transmission of STI's is made more serious given that chlamydia and gonorrhea infections in women can be asymptomatic and therefore may go undiagnosed. If left untreated, these infections may lead to pelvic inflammatory disease, which can cause tubal infertility, ectopic pregnancy and chronic pelvic pain.

Gonorrhea in Oregon has increased 38 percent since 2010. Most cases are in the Portland tri-county area, but there were 20 cases diagnosed in Benton County during the first 6 months of 2012, up from 18 cases in all of 2011. Multi-drug resistant gonorrhea has not yet been found in Benton County but is a growing problem nation-wide and poses an imminent public health challenge.

HIV/AIDS remains an important public health problem in Oregon. From 1981 through 2010, 8,753 Oregonians were diagnosed with HIV infection. Of those, 40 percent (3,540) have died. Fortunately death rates have decreased dramatically since the advent of effective antiretroviral therapies and HIV/AIDS is now managed as a serious but chronic disease. As a result, the number of Oregonians living with HIV infections has increased from 2,720 in 1997 to 5,213 in 2010. New HIV diagnoses in Oregon are most common among 35–39 year old males.¹²⁰

Zoonotic illnesses

Zoonotic diseases are infectious diseases that can be spread from animals to humans. There are many zoonotic diseases, and their threat to human health is growing due to increasing global movement of people and animals and the effects of human populations expanding into previously undeveloped wildlife habitats.

Climatic change may also lead to greater zoonotic diseases threats. Zoonotic diseases can cause symptoms such as diarrhea, muscle aches, and fever. Some diseases cause only mild illness while others can be life-threatening, and rabies is virtually 100 percent fatal if left untreated. Rabies is in endemic in the Oregon bat population.

Some zoonotic diseases are transmitted directly from animals to people, some result from contamination of the environment by animals, and others require a vector such a tick or mosquito. Examples of zoonotic diseases include:

- Bacterial - *Salmonella*, *E. coli*, leptospirosis
- Viral - Rabies, avian influenza
- Fungal - Ringworm, sporotrichosis
- Parasitic - Toxoplasmosis, larval migrans due to roundworms
- Vector-borne - West Nile virus, spread by mosquitoes, Lyme disease, spread by ticks

Zoonotic illnesses are a small but persistent cause of illnesses in Benton County. High rates of pet ownership and large numbers of rural livestock owners contribute to small but steady reports of these diseases. The presence of the Oregon State University College of Veterinary Medicine and its veterinary hospital are valuable local assets in the diagnosis and control of zoonotic illnesses in animals.

Injury and Violence

Community and Personal Safety

Personal Safety

Personal safety is dependent upon crime rates and other nontraffic-related hazards that exist in communities.¹²¹ Some evidence indicates that improving community safety may positively influence levels of physical activity in adults and children.¹²² Data regarding residents' perceptions of personal safety are not currently available; however, the 2009 Citizens Attitude Survey observed that a majority of respondents feel very or somewhat safe in Corvallis. Additional information regarding perceived personal safety of residents living in other parts of the county is needed for future assessment and planning.

Select responses regarding Personal Safety from the Corvallis Citizens' Attitude Survey, 2009

Do you feel...	Percentage Yes
Safe in your neighborhood during the day	97.0%
Safe in Corvallis downtown area during the day	96.0%
Safe from violent crime (e.g., rape, assault, robbery)	88.0%
Safe from environmental hazards	88.0%
Safe in your neighborhood after dark	84.0%
Safe in Corvallis downtown area after dark	70.0%

Source: www.corvallisoregon.gov

Injury

Injuries are the number one cause of death among people under the age of 44, and are the number one cause of disability at all ages. However, most of the events resulting in injury, disability or death are preventable.

In Benton County, the mortality rate due to accidents among men is 34.3. While overall in Benton County, the rate of unintentional injury deaths is 11.8, compared to 13.0 in the state.¹²³

According to Healthy People 2020, injuries and violence have an impact on the well-being of people by contributing to premature death, disability, poor mental health, high medical costs, and high productivity. Nationally, the leading causes of death from injury are a result of motor vehicle traffic accidents, unintentional poisoning, and firearms.

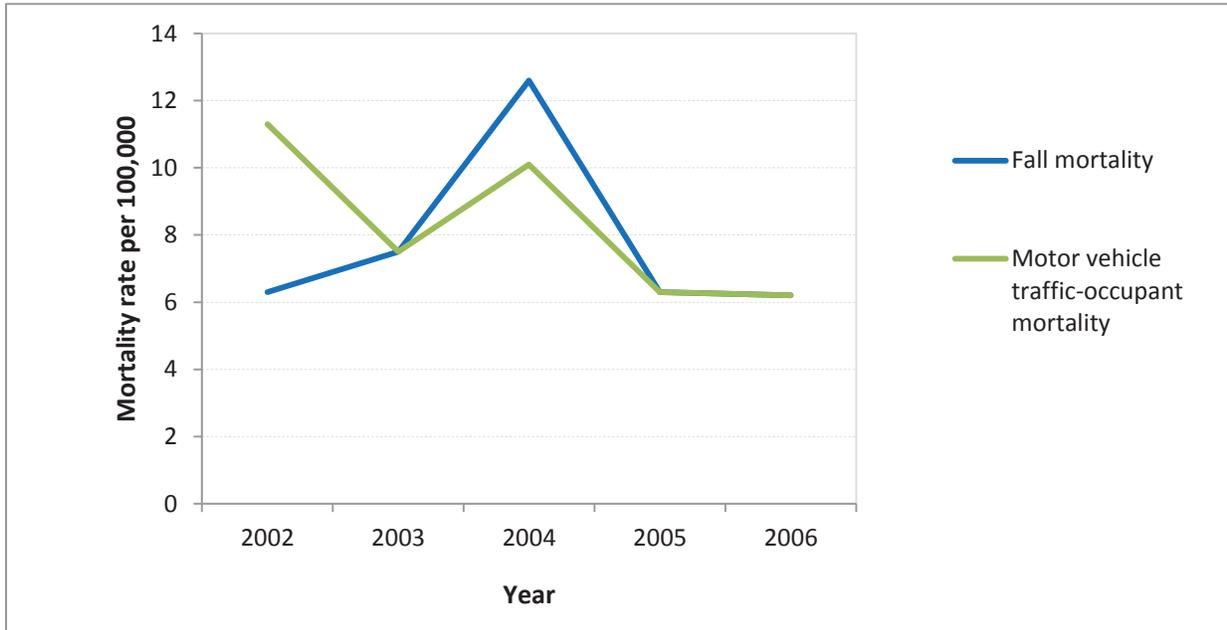
Unintentional Injury Mortality

In Oregon, injury is the third leading cause of death. It is also among the leading causes of hospitalization. For persons under 44 years of age, injury is the leading cause of death.¹²⁴

Overall, the leading causes of death resulting from injury in Oregon include suicide, motor-vehicle traffic accidents, unintentional falls, and unintentional poisonings. Out of 2,100 deaths in Oregon due to injury, approximately 1,400 are due to unintentional injuries.¹²⁵

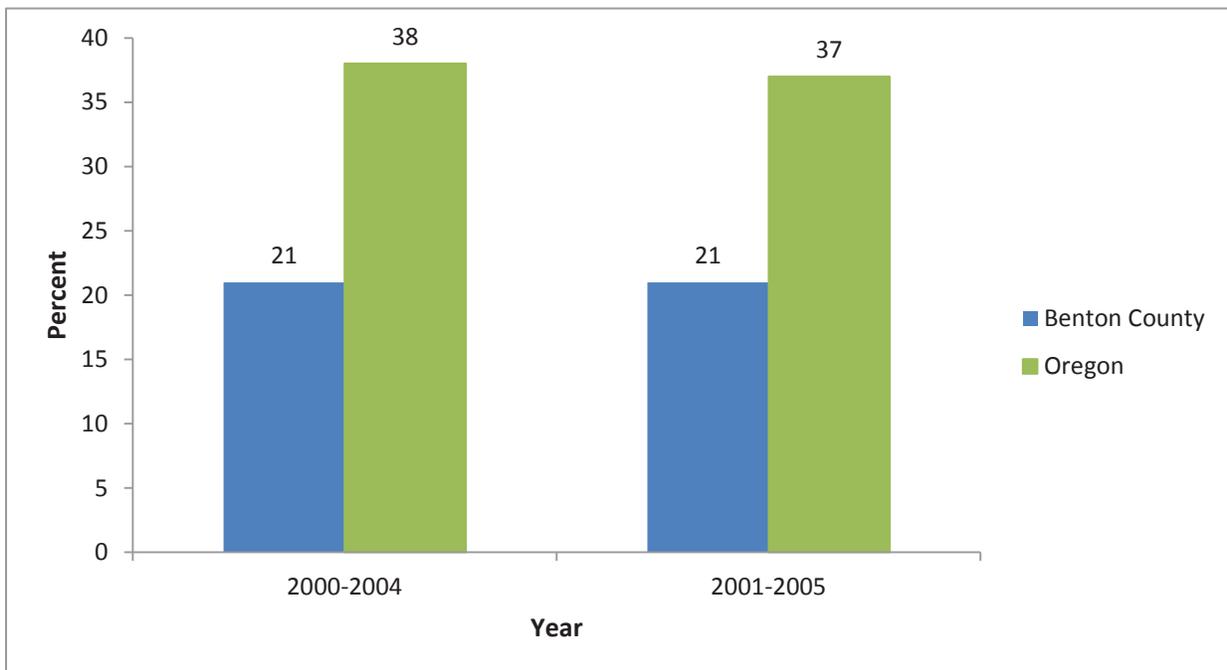
Mortality due to motor vehicle crashes in Benton County in 2001 (9.12) is below the *Healthy People 2010* target (9.2).¹²⁶ However, the number of fatalities more than doubled between 2001 and 2002.

Unintentional injury mortality rate per 100,000 in Benton County, 2002-2006



Source: Benton County Health Status Report, 2012

Percent of motor vehicle fatalities that are alcohol – involved in Benton County and Oregon, 2000-2005



Source: DHS: Addictions and Mental Health Division. State Epidemiological Outcomes Workgroup: Report on Alcohol, Illicit Drugs and Mental Health in Benton County, Oregon. 2000 to 2008.

Motor vehicle crashes pose the greatest risk for fatal injuries among Oregon residents. About 3 percent of Oregon adults report driving after having too much to drink on at least one occasion in the past month; and about 15 percent of Oregon youth rode with a parent or other adult who had been drinking on at least one occasion in the past month. Prevention programs that target driving after drinking alcohol may help to decrease motor vehicle fatalities.

Injury hospitalization rates per 100,000 by cause and age in Benton County, 2004-2006

Age	Fall	Motor vehicle traffic-occupant
1-4 years	65.8	N/A
5-14 years	44.4	20
15-24 years	22.3	36
25-34 years	32.9	36.2
35-44 years	17.9	28.6
45-54 years	68.6	20
55-64 years	89.1	N/A
65-74 years	319.1	70
75-84 years	1115.7	85
85 and older	2916	N/A

Source: Benton County Health Status Report, 2012

From 1987-2002, mortality from unintentional injury in Oregon increased by 75.5 percent. During the subsequent 3 years mortality due to unintentional injury declined by 49.0 percent.¹²⁷

Over the period, 2000-2005, the total mortality from unintentional injuries in Benton County was 130, and the mortality rate for this period was 28.7 people per 100,000. Except for the year 2002, Benton County has reported rates lower than the state of Oregon. Neither the state nor Benton County has achieved the 17.5 *Healthy People 2010* target for mortality due to unintentional injury.¹²⁸

Unintentional injury mortality is higher among males in most age groups. Females show higher mortality rates compared to males in the following age groups: 5-14; 45-54; and 75-84 years. The highest rate is among females, ages 75-84 years. Males in this age group have a rate equal to only two-thirds of the female rate. Some of these rates are based on very small counts and should be interpreted with caution.¹²⁹

Work-related Injury and Illness

Oregon's private sector workers suffer work-related injuries and illnesses at a rate of 3.9 for every 100 full-time employees. Recent incidence has been declining from a rate of 11.1 cases per 100 workers in 2008. In 2011, 18,691 disabling claims were made by Oregon workers.

Suicide

Suicide is the leading cause of injury-related death in the state and is the 9th leading cause of death for Oregonians. There are more deaths due to suicide in Oregon than due to car crashes. The suicide rate among Oregonians is 15.2 per 100,000. This is 35 percent higher than the national average.¹³⁰

Over 70 percent of persons who commit suicide have a diagnosed mental health disorder, alcohol and/or substance use problems, or are depressed at time of death. Despite the high prevalence of mental health problems, less than one third of male victims and just about half of female victims were receiving treatment for mental health problems at the time of death. Alcohol is known to decrease inhibitions and investigators believe that 30 percent of suicide victims use alcohol in the hours preceding their death.

Age

In general, suicide rates increase with age. Suicide among children under 10 is rare. In Oregon, the age-specific rate of suicide among men rises sharply after age 15 and reaches the first peak between the ages of 20 and 24. The rate decreases slightly between the ages of 25 and 29, then rises gradually and reaches a second peak around age 50. Rates decrease slowly between the ages of 50 and 69. After age 70, rates rise dramatically. The highest suicide rates are seen among those aged 85 and over.¹³¹

Suicide deaths and crude rates by age group and county, Oregon, 2003-2007

Age	Benton County	Oregon
All ages	12.5	15.7
1-24 years	7.5	8.9
25-44 years	18.5	17.9
45-64 years	16.1	22.5
> 65 years	16	24.4

Source: Suicides in Oregon: Trends and Risk Factors, Oregon Violent Death Reporting System, Injury and Violence Prevention Program, Office of Disease Prevention and Epidemiology, 2010

Sex, Race / Ethnicity

In Oregon, men have a greater risk of dying by suicide than women. In each age group, suicide rates are higher among males than among women. Overall men are 3.7 times more likely to die by suicide than women.

Among all suicide victims, 97 percent of suicides occur in whites. The age-adjusted suicide rate among whites is 15.8 per 100,000, which is almost double the rates observed among populations of other races. Overall white men have the highest suicide rate. This is mainly due to extremely high suicide rates among elder white men aged 60 and over. There are not significant differences in rates between white women and women of other races.¹³²

Veterans

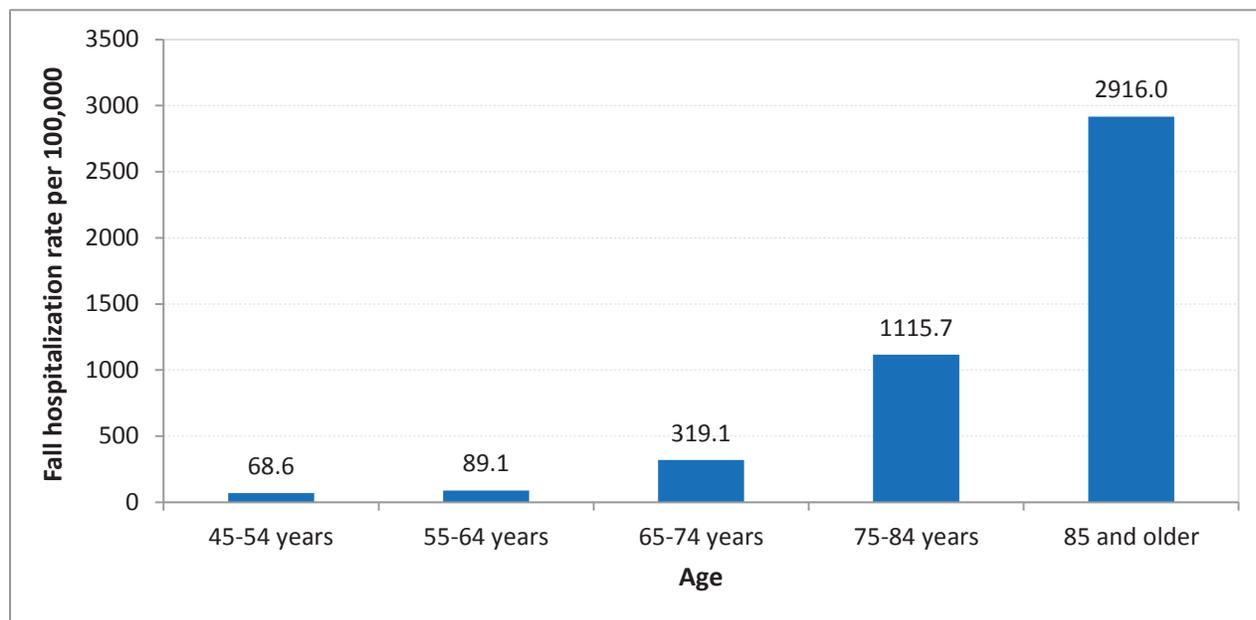
Approximately 27 percent of suicides occur among veterans. Male veterans have a significantly higher suicide rate than non-veteran males (45.7 vs. 27.4 per 100,000).¹³³

Preventing Falls

Falls are a major cause of injury and hospitalization, and the 10th leading cause of death among older Oregonians. Nearly one in three older adults fall each year, and 20-30 percent of those who fall suffer injuries. As common as they occur, injuries and deaths due to falls are not an inevitable consequence of aging; they can be prevented. Muscle weakness is a significant contributing factor in falls, so physical activity is widely viewed as among the most important interventions for preventing injuries related to falls among older adults.

Fall hospitalization rates increase drastically as adults age; the rate of fall hospitalizations for adults 75 years and older is more than 6 times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly 6 times more likely to be discharged into long term care compared to older adults hospitalized for other conditions. Between 2002 and 2006, the average cost for fall injury hospitalization among adults 65 years and older in Oregon was \$101 million per year.

Benton County hospitalization rates per 100,000 by age in Benton County, 2004 - 2006



Source: Benton County Health Status Report, 2012

Abuse among Vulnerable Adults

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse, caregiver neglect, and financial exploitation. The Oregon Cascades West Council of Governments (OCWCOG), Senior and Disability Services Unit manage an Adult Protective Services helpline for Linn, Benton and Lincoln counties. OCWCOG encourages the reporting of any suspected cases of abuse or neglect. Once contact with the Adult Protective Services Helpline is initiated, trained staff provide assessment, intervention, and referral services.

In 2010, the Oregon Department of Human Services Adult Protective Services received more than 27,000 reports of potential abuse.¹³⁴ Of those:

- 2,608 Oregon seniors and adults with physical disabilities experience abuse or self-neglect
- Fewer than 2 percent of residents in licensed care facilities are found to have been abused
- Neglect is the most common type of abuse experienced by seniors in facilities
- 85 percent of founded abuse occurs among seniors and adults with physical disabilities in their own homes and 15 percent occurs in licensed care settings.

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Conclusion: Meeting Challenges with Strengths

This community health assessment identifies concerns, challenges, and disparities in health status among Benton County's diverse communities and populations. These issues reveal that Benton County has many opportunities to improve health. Partners throughout the county will collaborate to address these needs through a Community Health Improvement Planning (CHIP) process in 2013.

However, an assessment of the county would not be complete without a description of the county's strengths and assets. In the context of a countywide health assessment, the concept of "strengths and assets" refers to the many types of human, social, economic, and organizational resources that stakeholders and community members can leverage to improve the health of all and ensure a healthy future for the county.

General Health Status

Benton County is considered to be one of the healthiest counties in the state. Benton County is ranked number 1 in the state of Oregon as the healthiest county- individuals are living longer and have a better quality of life¹³⁵. The Rankings consider factors that affect people's health within four categories: health behavior, clinical care, social and economic factors, and physical environment.

According to the 2012 *County Health Rankings* report, Benton County's strengths include:

- Percent of adults that report smoking ≥ 100 cigarettes and currently smoking (Rank: 2)
- Percent of adults that report a BMI ≥ 30 (Rank: 2)
- Percent of population under age 65 without health insurance (Rank: 1)
- Percent of population age 16+ unemployed but seeking work (lowest at 7.3%)
- Preventable Hospital Stays (Rank:1)

In addition, Benton County has a number of community resources that can be drawn upon to meet the identified challenges. Many of these resources are described in the 2010 United Way report, *Community Conversations about Need*¹³⁶ and are summarized on the next page.¹³⁷

Knowledge and skills in caring for and promoting health

- Benton County has strong tobacco ordinances and other population-based prevention care programs that reduce the onset and incidence of many illnesses.
- Benton County has a commitment to and many years of experience with effective partnerships across a wide variety of public and private sectors, including a unique partnership between county and city departments that has grown strong over ten years of experience of working on public health issues together (HACE).
- Benton County has a history of caring and extensive community involvement in offering low cost and/or free clinics for families.
- Benton County is particularly strong in offering excellent choices in medical care, dental care, vision care, elder care, medical clinics, doctors, nurse practitioners, and alternative medicine.

Social support networks

- Benton County has a long tradition of supporting diversity and inclusion, with an extensive list of non-profits, faith-based and University organizations that support building an inclusive community.
- Benton County has specialized support for people with mental illness, developmental disabilities, and addictions.
- Benton County provides specialized support for at-risk school children and teens and their caregivers (through Community Services Consortium and the Old Mill School, etc.)

Resources

- Benton County has an excellent basic framework to assist homeless persons (i.e. emergency shelter, transitional housing, and permanent affordable housing).
- Benton County is particularly strong in offering a wide choice in public schools, private schools, and alternative schooling opportunities.
- Benton County has several service providers which provide adult education (i.e. literacy, GED and parenting courses).
- Benton County is particularly strong in offering job seeking services, vocational training, and general support for unemployed persons.
- Benton County maintains safe, well-marked roads and bike lanes that help prevent traffic injuries and chronic disease.
- Benton County has a history of collaboration among various sectors to promote many successful and progressive transportation and built environment programs (i.e. Alternative mode options, Dial-A-Bus, PDX transit, Safety sidewalk and ramp program, Public Transit).

Appendix A: Benton County Public Health Assessment Survey Results, Demographics

Figure 1. Demographic information for Benton County Public Health Assessment Survey Respondents

Demographic	Survey No. (%)	Benton County (2010) No. (%)	p
Age group			<0.001
Younger than 18	2 (0.44%)	15,249 (17.80%)	
18 – 24	48 (10.60%)	19,656 (23.00%)	
25 – 34	94 (20.75%)	10,414 (12.20%)	
35 – 54	139 (30.68%)	19,333 (22.60%)	
55 – 64	92 (20.31%)	10,647 (12.40%)	
65 and older	52 (11.48%)	10,280 (12.00%)	
Did not answer	26 (5.74%)		
Gender			<0.001
Male	126 (27.8%)	42,868 (50.1%)	
Female	301 (66.5%)	42,711 (50.0%)	
Did not answer	26 (5.7%)		
Ethnicity			<0.001
Hispanic or Latino	44 (9.71%)	5,467 (6.40%)	
Non-Hispanic or Latino	372 (82.12%)	80,112 (93.60%)	
Did not answer	37 (8.17%)		
Race			<0.001
African American/Black	4 (0.88%)	759 (0.90%)	
American Indian/Alaska Native	4 (0.88%)	627 (0.70%)	
Asian/Pacific Islander	7 (1.55%)	4,642 (5.40%)	
White/Caucasian	358 (79.03%)	74,506 (87.10%)	
Other	31 (6.84%)	1,985 (2.30%)	
Multiple	10 (2.21%)	3,060 (3.60%)	
Did not answer	39 (8.61%)		
Primary Language Spoken at Home			<0.001
English	374 (82.56%)	72,651 (88.80%)	
Spanish	28 (6.18%)	4,418 (5.40%)	
Other	6 (1.32%)	4,827 (5.90%)	
Multiple	3 (0.66%)		
Did not answer	27 (5.96%)		
Education			<0.001
Less than High School Graduate	31 (6.84%)	4,263 (6.10%)	
High School Graduate	49 (10.82%)	11,144 (15.90%)	
Some College or Associate’s Degree	100 (22.08%)	29,035 (41.40%)	
Bachelor’s Degree	125 (27.59%)	14,626 (20.80%)	
Graduate Degree	121 (26.71%)	11,085 (15.80%)	
Did not answer	27 (5.96%)		

Marital Status		
Married	225 (49.67%)	32,580 (44.60%)
Partnered	41 (9.05%)	N/A
Divorced	46 (10.15%)	7,305 (10.00%)
Widowed	14 (3.09%)	2,191 (3.00%)
Single	95 (20.97%)	30,461 (41.70%)
Did not answer	32 (7.06%)	
Employment Status		
Employed full-time	157 (34.66%)	
Employed part-time	74 (16.34%)	
Unemployed	48 (10.60%)	
Disabled	27 (5.96%)	
Stay at home	33 (7.28%)	
Student	21 (4.64%)	
Retired	58 (12.80%)	
Other	8 (1.77%)	
Did not answer	27 (5.96%)	
Insurance		
Private	207 (45.70%)	
Public	109 (24.06%)	
Uninsured	83 (18.32%)	
Did not answer	49 (10.82%)	
Zip Code		
Corvallis	288 (63.58%)	
Not Corvallis	119 (26.27%)	
Did not answer	46 (10.15%)	
Income		
Less than \$20,000	125 (27.59%)	
\$20,000 to \$29,999	46 (10.15%)	
\$30,000 to \$49,999	72 (15.89%)	
\$50,000 to \$74,999	63 (13.91%)	
\$75,000 or more	107 (23.62%)	
Did not answer	40 (8.83%)	
Sexual Orientation		
Straight	373 (82.34%)	
Gay or Lesbian	13 (2.87%)	
Bisexual	19 (4.19%)	
Transgender	2 (0.44%)	
Other	4 (0.88%)	
Did not answer	42 (9.27%)	
Number of Children		
None	261 (57.62%)	
1	66 (14.57%)	
2	64 (14.13%)	
3	16 (3.53%)	
4 or more	13 (2.87%)	
Did not answer	33 (7.28%)	

Appendix B: Benton County Public Health Assessment Survey Results, Ability to Receive Health Care Services

Figure 1. The issue that has the GREATEST impact on the ability to receive health care services for people in Benton County is...

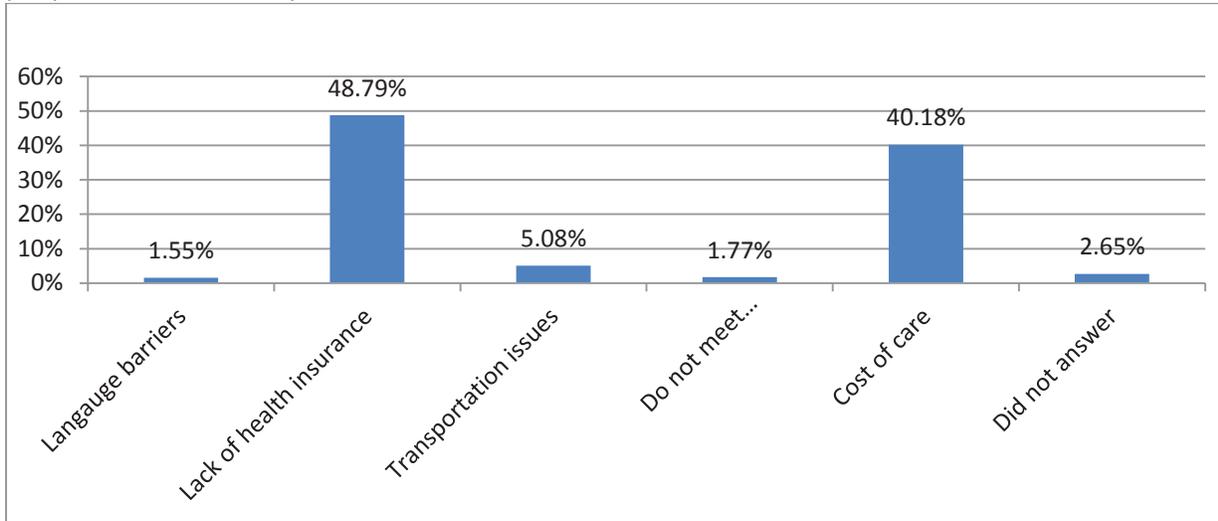


Table 1a. The issue that has the GREATEST impact on the ability to receive health care services for people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Language Barriers	Lack of health insurance	Transportation issues	Not meeting residency or citizen issues	Cost of care	Total
97321	North Albany	0 (0.0)	10 (50.0)	1 (5.0)	0 (0.0)	9 (45.0)	20
97324	Alsea	0 (0.0)	1 (50.0)	0 (0.0)	0 (0.0)	1 (50.0)	2
97326	Blodgett	0 (0.0)	5 (62.5)	3 (37.5)	0 (0.0)	0 (0.0)	8
97330	North Corvallis	2 (1.1)	106 (57.0)	4 (2.2)	6 (3.2)	68 (36.6)	186
97331	Oregon State University	1 (16.7)	1 (16.7)	2 (33.3)	0 (0.0)	2 (33.3)	6
97333	South Corvallis	1 (1.1)	38 (43.2)	4 (4.5)	2 (2.3)	43 (48.9)	88
97370	Philomath	0 (0.0)	14 (51.9)	0 (0.0)	0 (0.0)	13 (48.1)	27
97456	Monroe	0 (0.0)	11 (50.0)	2 (9.1)	0 (0.0)	9 (40.9)	22
Other	Other	2 (5.3)	15 (39.5)	2 (5.3)	0 (0.0)	19 (50.0)	38
Total		6 (1.5)	201 (50.6)	18 (4.5)	8 (2.0)	164 (41.3)	397

* 56 participants missing data

Table 1b. The issue that has the GREATEST impact on the **ability to receive health care services** for people in Benton County is...*(These results are stratified by income.)*

Income	Language Barriers	Lack of health insurance	Transportation issues	Not meeting residency or citizen issues	Cost of care	Total
Less than \$20,000	4 (3.2)	66 (53.7)	9 (7.3)	1 (0.8)	43 (35.0)	123
\$20,000 - \$29,999	1 (2.2)	25 (55.6)	1 (2.2)	1 (2.2)	17 (37.8)	45
\$30,000 – \$49,999	0 (0.0)	39 (54.2)	1 (1.4)	2 (2.8)	30 (41.7)	72
\$50,000 - \$74,999	1 (1.6)	24 (38.7)	1 (1.6)	2 (3.2)	34 (54.8)	63
\$75,000 and more	0 (0.0)	53 (50.5)	8 (7.8)	2 (1.9)	41 (39.8)	103
Total	6 (1.5)	206 (50.9)	20 (4.9)	8 (2.0)	165 (40.7)	405

* 48 participants missing data

Table 1c. The issue that has the GREATEST impact on the **ability to receive health care services** for people in Benton County is...*(These results are stratified by ethnicity.)*

Ethnicity	Language Barriers	Lack of health insurance	Transportation issues	Not meeting residency or citizen issues	Cost of care	Total
Hispanic or Latino	3 (7.0)	17 (39.5)	0 (0.0)	2 (4.7)	21 (48.8)	43
Non-Hispanic or Latino	3 (0.8)	191 (52.5)	17 (4.7)	6 (1.6)	147 (40.4)	364
Total	6 (1.5)	208 (51.1)	17 (4.2)	8 (2.0)	168 (41.3)	407

* 46 participants missing data

Appendix C: Benton County Public Health Assessment Survey Results, Health Care Services

Figure 2. The **health care service** that has the GREATEST impact on the health of people in Benton County is...

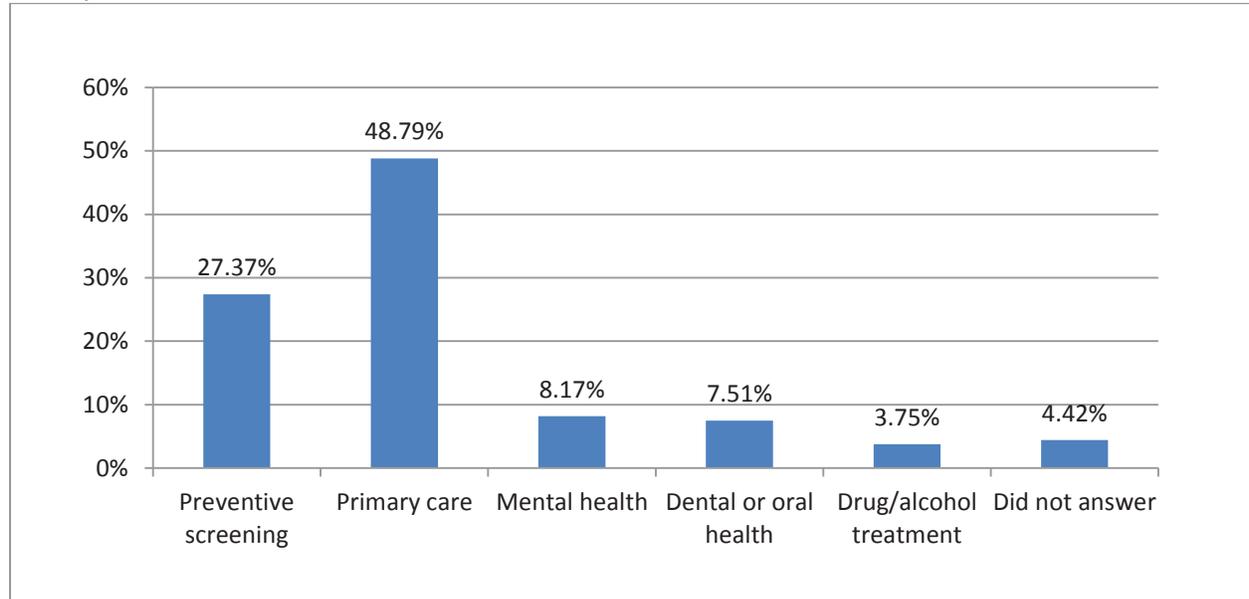


Table 2a. The **health care service** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Preventive Screening	Primary care	Mental health	Dental or oral health	Drug and alcohol treatment	Total
97321	North Albany	7 (35.0)	10 (50.0)	1 (5.0)	1 (5.0)	1 (5.0)	20
97324	Alea	0 (0.0)	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	2 (25.0)	5 (62.5)	1 (12.5)	0 (0.0)	0 (0.0)	8
97330	North Corvallis	50 (27.8)	95 (52.8)	17 (9.4)	13 (7.2)	5 (2.8)	180
97331	Oregon State University	1 (16.7)	3 (50.0)	2 (33.3)	0 (0.0)	0 (0.0)	6
97333	South Corvallis	24 (27.0)	49 (55.1)	5 (5.6)	7 (7.9)	4 (4.5)	89
97370	Philomath	8 (29.6)	13 (48.1)	2 (7.4)	1 (3.7)	3 (11.1)	27
97456	Monroe	5 (25.0)	6 (30.0)	1 (5.0)	6 (30.0)	2 (10.0)	20
Other	Other	14 (36.8)	19 (50.0)	3 (7.9)	2(5.3)	0 (0.0)	38
Total		111 (28.5)	201 (51.5)	33 (8.5)	30 (7.7)	15 (3.8)	390

* 63 participants missing data

Table 2b. The **health care service** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by income.)

Income	Preventive Screening	Primary care	Mental health	Dental or oral health	Drug and alcohol treatment	Total
Less than \$20,000	26 (22.4)	56 (48.3)	13 (11.2)	15 (12.9)	6 (5.2)	116
\$20,000 - \$29,999	15 (35.7)	19 (45.2)	1 (2.4)	7 (16.7)	0 (0.0)	42
\$30,000 – \$49,999	16 (22.5)	41 (57.7)	7 (9.9)	2 (2.0)	5 (7.0)	71
\$50,000 - \$74,999	19 (31.1)	35 (57.4)	5 (8.2)	0 (0.0)	2 (3.3)	61
\$75,000 and more	35 (33.7)	55 (52.9)	6 (5.8)	6 (5.8)	2 (1.9)	104
Total	111 (28.2)	206 (52.3)	32 (8.1)	30 (7.6)	15 (3.8)	394

* 59 participants missing data

Table 2c. The **health care service** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Preventive Screening	Primary care	Mental health	Dental or oral health	Drug and alcohol treatment	Total
Hispanic or Latino	14 (32.6)	17 (39.5)	4 (9.3)	7 (16.3)	1 (2.3)	43
Non-Hispanic or Latino	100 (28.2)	188 (53.1)	29 (8.2)	23 (6.5)	14 (4.0)	354
Total	114 (28.7)	205 (51.6)	33 (8.3)	30 (7.6)	15 (3.8)	397

* 56 participants missing data

Appendix D: Benton County Public Health Assessment Survey Results, Infectious Disease and Immunization

Figure 3. The **infectious disease and immunization** factor that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by zip code and income.)

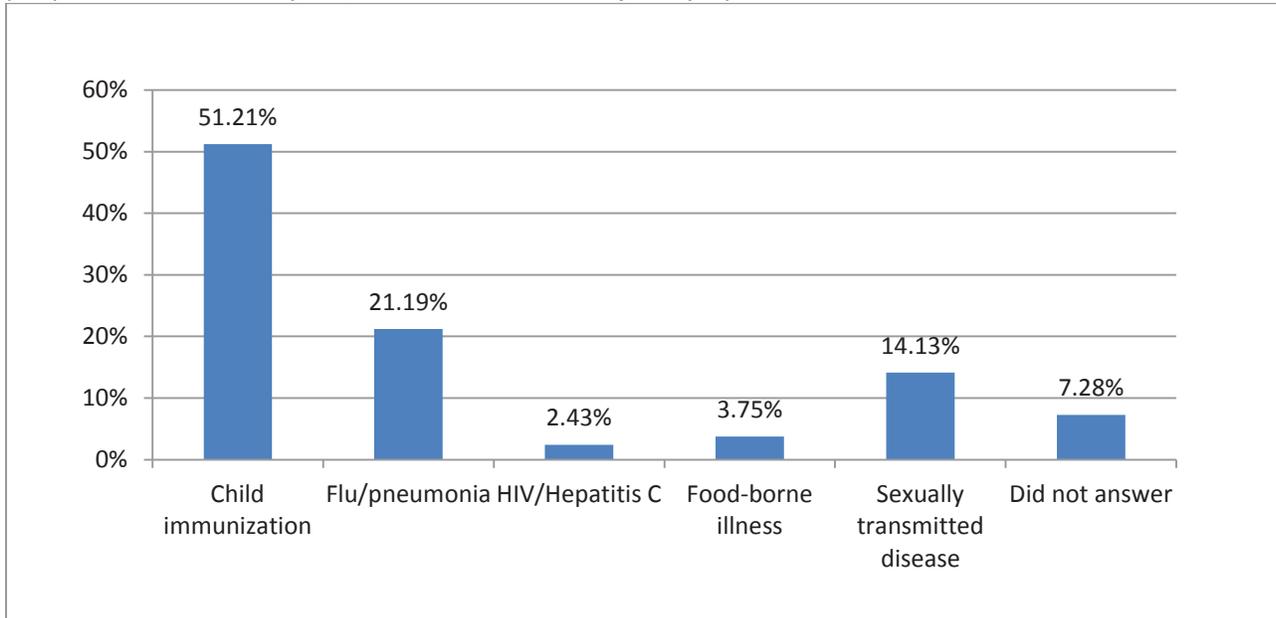


Table 3a. The **infectious disease and immunization** factor that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Childhood immunization	Flu and pneumonia	HIV and Hepatitis C	Food-borne illness	Sexually transmitted infections	Total
97321	North Albany	7 (35.0)	7 (35.0)	1 (5.0)	2 (10.0)	3 (15.0)	20
97324	Alea	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	5 (62.5)	3 (37.5)	0 (0.0)	0 (0.0)	0 (0.0)	8
97330	North Corvallis	105 (58.0)	35 (19.3)	7 (3.9)	9 (5.0)	25 (13.8)	181
97331	Oregon State University	4 (80.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (20.0)	5
97333	South Corvallis	47 (56.6)	21 (25.3)	1 (1.2)	4 (4.8)	10 (12.0)	83
97370	Philomath	16 (59.3)	7 (25.9)	0 (0.0)	2 (7.4)	2 (7.4)	27
97456	Monroe	10 (50.0)	6 (30.0)	1 (5.0)	0 (0.0)	3 (15.0)	20
Other	Other	14 (43.8)	6 (18.8)	1 (3.1)	0 (0.0)	11 (34.4)	32
Total		209 (55.3)	86 (22.8)	11 (2.9)	17 (4.5)	55 (14.6)	378

* 75 participants missing data

Table 3b. The **infectious disease and immunization** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by income.)*

Income	Childhood immunization	Flu and pneumonia	HIV and Hepatitis C	Food-borne illness	Sexually transmitted infections	Total
Less than \$20,000	52 (46.0)	30 (26.5)	8 (7.1)	2 (1.8)	21 (18.6)	113
\$20,000 - \$29,999	16 (39.0)	11 (26.8)	1 (2.4)	2 (4.9)	11 (26.8)	41
\$30,000 – \$49,999	39 (56.5)	19 (27.5)	1 (1.4)	2 (2.9)	8 (11.6)	69
\$50,000 - \$74,999	42 (72.4)	7 (12.1)	0 (0.0)	2 (3.4)	7 (12.1)	58
\$75,000 and more	65 (62.5)	24 (23.1)	1 (1.0)	7 (6.7)	7 (6.7)	104
Total	214 (55.6)	91 (23.6)	11 (2.9)	15 (3.9)	54 (14.0)	385

* 68 participants missing data

Table 3c. The **infectious disease and immunization** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by ethnicity.)*

Ethnicity	Childhood immunization	Flu and pneumonia	HIV and Hepatitis C	Food-borne illness	Sexually transmitted infections	Total
Hispanic or Latino	18 (42.9)	14 (33.3)	1 (2.4)	2 (4.8)	7 (16.7)	42
Non-Hispanic or Latino	198 (57.4)	77 (22.3)	8 (2.3)	13 (3.8)	49 (14.2)	345
Total	216 (55.8)	91 (23.5)	9 (2.3)	15 (3.9)	56 (14.5)	387

* 66 participants missing data

Appendix E: Benton County Public Health Assessment Survey Results, Maternal and Child Health

Figure 4. The **maternal and child health** factor that has the GREATEST impact on the health of children and families in Benton County is...

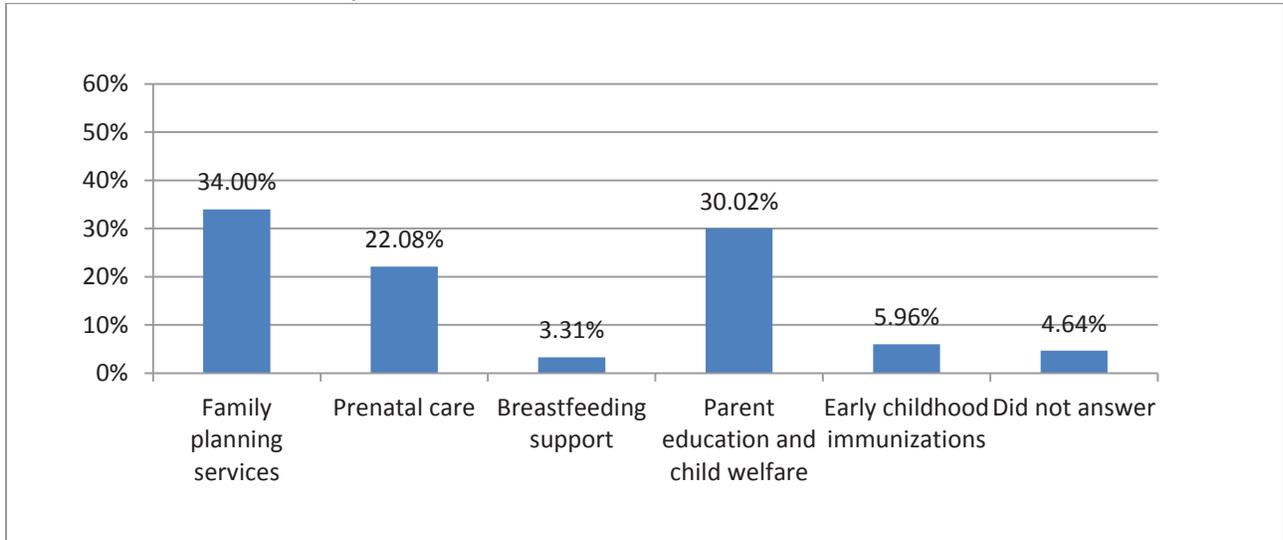


Table 4a. The **maternal and child health** factor that has the GREATEST impact on the health of children and families in Benton County is...*(These results are stratified by zip code.)*

Zip Code	City	Family planning services	Prenatal care	Breastfeeding support	Parent education and child services	Early childhood immunization	Total
97321	North Albany	6 (30.0)	5 (25.0)	1 (5.0)	7 (35.0)	1 (5.0)	20
97324	Alsea	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	3 (37.5)	0 (0.0)	1 (12.5)	3 (37.5)	1 (12.5)	8
97330	North Corvallis	70 (38.3)	45 (24.6)	8 (4.4)	50 (27.3)	10 (5.5)	183
97331	Oregon State University	3 (50.0)	1 (16.7)	0 (0.0)	1 (16.7)	1 (16.7)	6
97333	South Corvallis	27 (30.7)	25 (28.4)	4 (4.5)	26 (29.5)	6 (6.8)	88
97370	Philomath	8 (28.6)	5 (17.9)	1 (3.6)	13 (46.4)	1 (3.6)	28
97456	Monroe	5 (23.8)	0 (0.0)	0 (0.0)	13 (61.9)	3 (14.3)	21
Other	Other	11 (31.4)	10 (28.6)	0 (0.0)	13 (37.1)	1 (2.9)	35
Total		134 (34.3)	92 (23.5)	15 (3.8)	126 (32.2)	24 (6.1)	391

* 62 participants missing data

Table 4b. The **maternal and child health** factor that has the GREATEST impact on the health of children and families in Benton County is...*(These results are stratified by income.)*

Income	Family planning services	Prenatal care	Breastfeeding support	Parent education and child services	Early childhood immunizations	Total
Less than \$20,000	45 (38.1)	20 (16.9)	3 (2.5)	43 (36.4)	7 (5.9)	118
\$20,000 - \$29,999	13 (30.2)	10 (23.3)	2 (4.7)	15 (34.9)	3 (7.0)	43
\$30,000 – \$49,999	29 (42.0)	11 (15.9)	2 (2.9)	26 (37.7)	1 (1.4)	69
\$50,000 - \$74,999	17 (28.3)	13 (21.7)	3 (5.0)	19 (31.7)	8 (13.3)	60
\$75,000 and more	37 (34.9)	33 (31.1)	3 (2.8)	27 (25.5)	6 (5.7)	106
Total	141 (35.6)	87 (22.0)	13 (3.3)	130 (32.8)	25 (6.3)	396

* 57 participants missing data

Table 4c. The **maternal and child health** factor that has the GREATEST impact on the health of children and families in Benton County is...*(These results are stratified by ethnicity.)*

Ethnicity	Family planning services	Prenatal care	Breastfeeding support	Parent education and child services	Early childhood immunizations	Total
Hispanic or Latino	15 (36.6)	4 (9.8)	2 (4.9)	16 (39.0)	4 (9.8)	41
Non-Hispanic or Latino	128 (35.7)	88 (24.5)	13 (3.6)	109 (30.4)	21 (5.8)	359
Total	143 (35.8)	92 (23.0)	15 (3.8)	125 (31.3)	25 (6.3)	400

* 53 participants missing data

Table 4d. The **maternal and child health** factor that has the GREATEST impact on the health of children and families in Benton County is...*(These results are stratified by education.)*

Education	Family planning services	Prenatal care	Breastfeeding support	Parent education and child services	Early childhood immunizations	Total
Less than High School	5 (17.9)	6 (21.4)	0 (0.0)	15 (53.6)	2 (7.1)	28
High School Graduate	19 (41.3)	6 (13.0)	0 (0.0)	16 (34.8)	5 (10.9)	46
Some College or Associates Degree	37 (37.8)	19 (19.4)	2 (2.0)	33 (33.7)	7 (7.1)	98
Bachelor’s Degree or higher	86 (36.1)	61 (25.6)	12 (5.0)	67 (28.2)	12 (5.0)	238
Total	147 (35.9)	92 (22.4)	14 (3.4)	131 (32.0)	26 (6.3)	410

* 43 participants missing data

Appendix F: Benton County Public Health Assessment Survey Results, Family Health

Figure 5. The **family health** factor that has the GREATEST impact on the health of families in Benton County is...

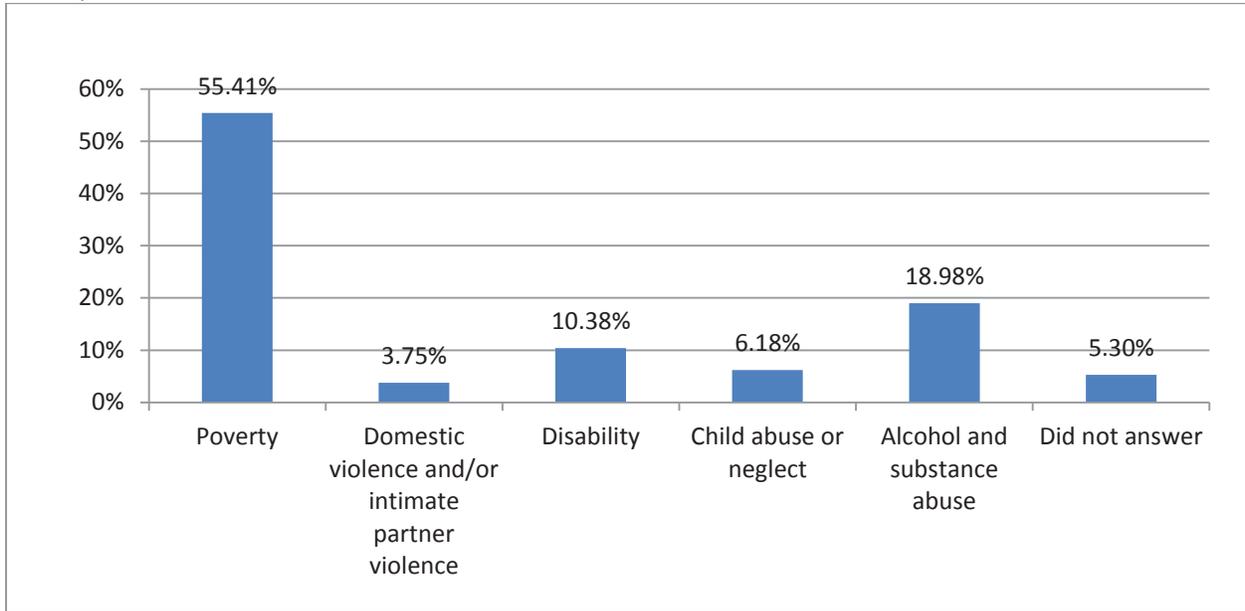


Table 5a. The **family health** factor that has the GREATEST impact on the health of families in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Poverty	Domestic violence and/or intimate partner violence	Disability	Child abuse or neglect	Alcohol and substance abuse	Total
97321	North Albany	10 (50.0)	0 (0.0)	2 (10.0)	3 (15.0)	5 (25.0)	20
97324	Alsea	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	5 (62.5)	0 (0.0)	0 (0.0)	0 (0.0)	3 (37.5)	8
97330	North Corvallis	107 (58.5)	8 (4.4)	19 (10.4)	15 (8.2)	34 (18.6)	183
97331	Oregon State University	3 (50.0)	1 (16.7)	0 (0.0)	2 (33.3)	0 (0.0)	6
97333	South Corvallis	49 (56.3)	3 (3.4)	17 (19.5)	3 (3.4)	15 (17.2)	87
97370	Philomath	19 (67.9)	0 (0.0)	1 (3.6)	2 (7.1)	6 (21.4)	28
97456	Monroe	8 (42.1)	0 (0.0)	3 (15.8)	0 (0.0)	8 (42.1)	19
Other	Other	22 (61.1)	2 (5.6)	4 (11.1)	2 (5.6)	6 (16.7)	36
Total		225 (57.8)	14 (3.6)	46 (11.8)	27 (6.9)	77 (19.8)	389

* 64 participants missing data

Table 5b. The **family health** factor that has the GREATEST impact on the health of families in Benton County is...(These results are stratified by income.)

Income	Poverty	Domestic violence and/or intimate partner violence	Disability	Child abuse or neglect	Alcohol and substance abuse	Total
Less than \$20,000	69 (58.5)	3 (2.5)	18 (15.3)	10 (8.5)	18 (15.3)	118
\$20,000 - \$29,999	25 (61.0)	0 (0.0)	7 (17.1)	2 (4.9)	7 (17.1)	41
\$30,000 – \$49,999	42 (60.0)	5 (7.1)	6 (8.6)	3 (4.3)	14 (20.0)	70
\$50,000 - \$74,999	39 (65.0)	5 (8.3)	5 (8.3)	3 (5.0)	8 (13.3)	60
\$75,000 and more	57 (54.3)	1 (1.0)	9 (8.6)	9 (8.6)	29 (27.6)	105
Total	232 (58.9)	14 (3.6)	45 (11.4)	27 (6.9)	76 (19.3)	394

* 59 participants missing data

Table 5c. The **family health** factor that has the GREATEST impact on the health of families in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Poverty	Domestic violence and/or intimate partner violence	Disability	Child abuse or neglect	Alcohol and substance abuse	Total
Hispanic or Latino	26 (61.9)	1 (2.4)	3 (7.1)	0 (0.0)	12 (28.6)	42
Non-Hispanic or Latino	205 (58.2)	12 (3.4)	42 (11.9)	27 (7.7)	66 (18.8)	352
Total	231 (58.6)	13 (3.3)	45 (11.4)	27 (6.9)	78 (19.8)	394

* 59 participants missing data

Appendix G: Benton County Public Health Assessment Survey Results, Behavioral Risk Factor

Figure 6. The **behavioral risk factor** that has the GREATEST impact on overall health of people in Benton County is...

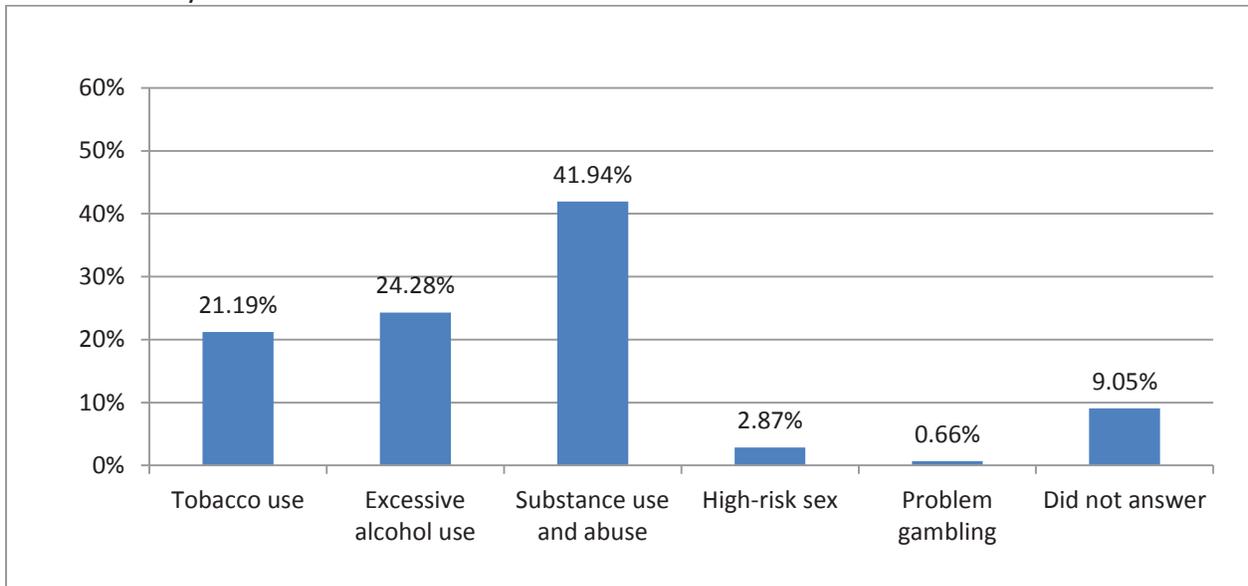


Table 6a. The **behavioral risk factor** that has the GREATEST impact on overall health of people in Benton County is...*(These results are stratified by zip code.)*

Zip Code	City	Tobacco use	Excessive alcohol use	Substance use and abuse	High-risk sex	Problem gambling	Total
97321	North Albany	4 (22.2)	7 (38.9)	7 (38.9)	0 (0.0)	0 (0.0)	18
97324	Alsea	0 (0.0)	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	3 (42.9)	2 (28.6)	2 (28.6)	0 (0.0)	0 (0.0)	7
97330	North Corvallis	45 (26.2)	46 (26.7)	74 (43.0)	5 (2.9)	2 (1.2)	172
97331	Oregon State University	2 (40.0)	1 (20.0)	1 (20.0)	1 (20.0)	0 (0.0)	5
97333	South Corvallis	14 (16.5)	26 (30.6)	41 (48.2)	3 (3.5)	1 (1.2)	85
97370	Philomath	5 (17.2)	5 (17.2)	19 (65.5)	0 (0.0)	0 (0.0)	29
97456	Monroe	5 (26.3)	5 (26.3)	8 (42.1)	1 (5.3)	0 (0.0)	19
Other	Other	9 (25.7)	7 (20.0)	17 (48.6)	2 (5.7)	0 (0.0)	35
Total		87 (23.4)	100 (26.9)	170 (45.7)	12 (3.2)	3 (0.8)	372

* 81 participants missing data

Table 6b. The **behavioral risk factor** that has the GREATEST impact on overall health of people in Benton County is...(These results are stratified by income.)

Income	Tobacco use	Excessive alcohol use	Substance use and abuse	High-risk sex	Problem gambling	Total
Less than \$20,000	17 (16.0)	29 (27.4)	54 (50.9)	4 (3.8)	2 (1.9)	106
\$20,000 - \$29,999	11 (25.6)	8 (18.6)	23 (53.5)	1 (2.3)	0 (0.0)	43
\$30,000 – \$49,999	14 (20.9)	20 (29.9)	28 (41.8)	4 (6.0)	1 (1.5)	67
\$50,000 - \$74,999	13 (21.7)	18 (30.0)	27 (45.0)	2 (3.3)	0 (0.0)	60
\$75,000 and more	32 (31.1)	26 (25.2)	43 (41.7)	2 (1.9)	0 (0.0)	103
Total	87 (23.0)	101 (26.6)	175 (46.2)	13 (3.4)	3 (0.8)	379

* 74 participants missing data

Table 6c. The **behavioral risk factor** that has the GREATEST impact on overall health of people in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Tobacco use	Excessive alcohol use	Substance use and abuse	High-risk sex	Problem gambling	Total
Hispanic or Latino	12 (30.0)	16 (40.0)	11 (27.5)	0 (0.0)	1 (2.5)	40
Non-Hispanic or Latino	80 (23.1)	84 (24.3)	167 (48.3)	13 (3.8)	2 (0.6)	346
Total	92 (23.8)	100 (25.9)	178 (46.1)	13 (3.4)	3 (0.8)	386

* 67 participants missing data

Appendix H: Benton County Public Health Assessment Survey Results, Behavioral Risk Factor

Figure 7. The **environmental quality** issue that has the GREATEST impact on the health of people in Benton County is...

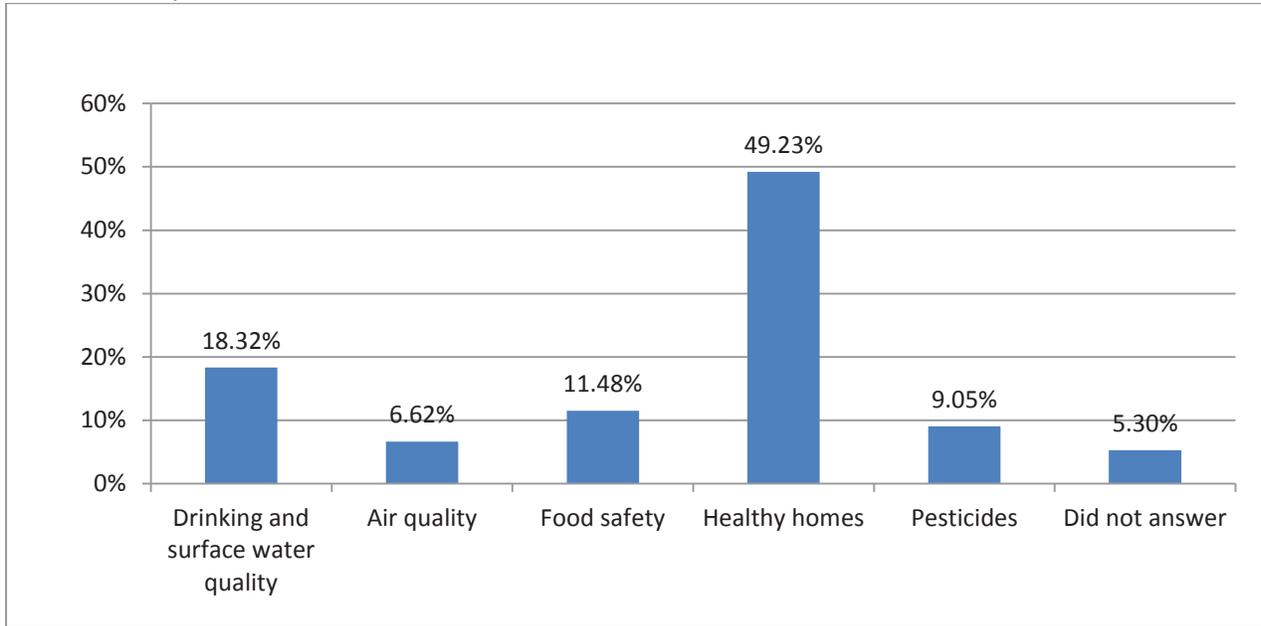


Table 7a. The **environmental quality** issue that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Drinking and surface water quality	Air quality	Food safety	Healthy homes	Pesticides	Total
97321	North Albany	3 (15.0)	3 (15.0)	3 (15.0)	10 (50.0)	1 (5.0)	20
97324	Alsea	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	2
97326	Blodgett	2 (25.0)	3 (37.5)	0 (0.0)	3 (37.5)	0 (0.0)	8
97330	North Corvallis	33 (18.0)	10 (5.5)	22 (12.0)	99 (54.1)	19 (10.4)	183
97331	Oregon State University	1 (20.0)	2 (40.0)	1 (20.0)	1 (20.0)	0 (0.0)	5
97333	South Corvallis	23 (25.8)	6 (6.7)	12 (13.5)	40 (44.9)	8 (9.0)	89
97370	Philomath	6 (21.4)	0 (0.0)	6 (21.4)	14 (50.0)	2 (7.1)	28
97456	Monroe	3 (15.8)	2 (10.5)	1 (5.3)	9 (47.4)	4 (21.1)	19
Other	Other	4 (11.8)	2 (5.9)	3 (8.8)	21 (61.8)	4 (11.8)	34
Total		75 (19.3)	28 (7.2)	48 (12.4)	199 (51.3)	38 (9.8)	388

* 65 participants missing data

Table 7b. The **environmental quality** issue that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by income.)

Income	Drinking and surface water quality	Air quality	Food safety	Healthy homes	Pesticides	Total
Less than \$20,000	15 (12.9)	5 (4.3)	9 (7.8)	75 (64.7)	12 (10.3)	116
\$20,000 - \$29,999	8 (20.0)	1 (2.5)	6 (15.0)	22 (55.0)	3 (7.5)	40
\$30,000 - \$49,999	14 (20.3)	2 (2.9)	11 (15.9)	32 (46.4)	10 (14.5)	69
\$50,000 - \$74,999	13 (21.0)	11 (17.7)	5 (8.1)	29 (46.8)	4 (6.5)	62
\$75,000 and more	24 (22.6)	9 (8.5)	16 (15.1)	47 (44.3)	10 (9.4)	106
Total	74 (18.8)	28 (7.1)	47 (12.0)	205 (52.2)	39 (9.9)	393

* 60 participants missing data

Table 7c. The **environmental quality** issue that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Drinking and surface water quality	Air quality	Food safety	Healthy homes	Pesticides	Total
Hispanic or Latino	7 (16.3)	2 (4.7)	5 (11.6)	26 (60.5)	3 (7.0)	43
Non-Hispanic or Latino	70 (19.7)	23 (6.5)	43 (12.1)	183 (51.5)	36 (10.1)	355
Total	77 (19.3)	25 (6.3)	48 (12.1)	209 (52.5)	39 (9.8)	398

* 55 participants missing data

Appendix I: Benton County Public Health Assessment Survey Results, Built Environment or Human-made Surroundings

Figure 8. The **built environment or human-made surroundings** factor that has the GREATEST impact on the health of people in Benton County is...

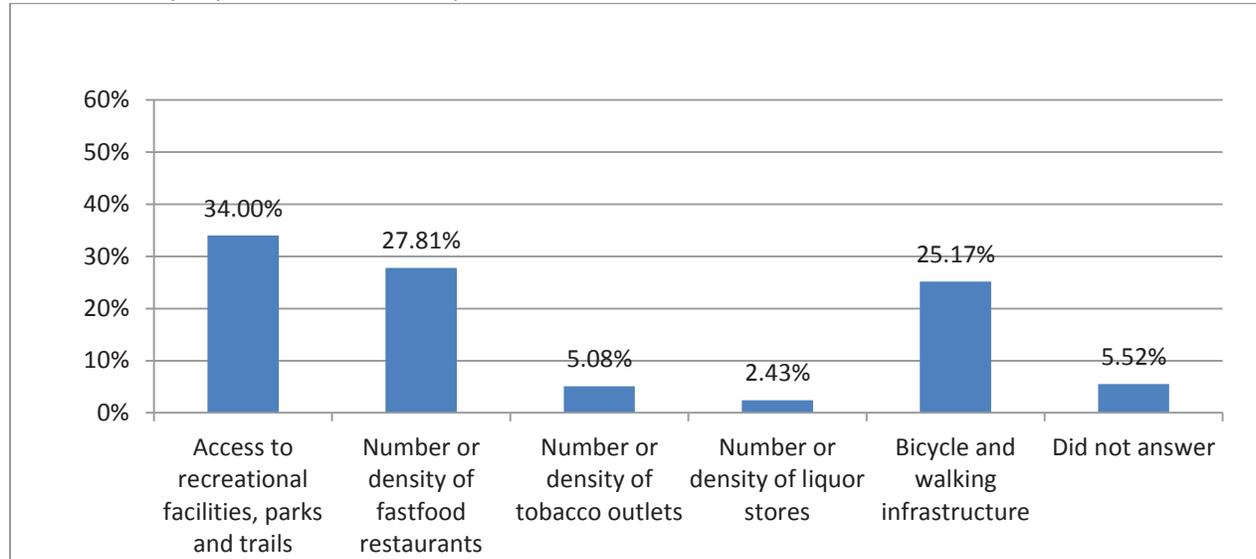


Table 8a. The **built environment or human-made surroundings** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by zip code.)*

Zip Code	City	Access to recreational facilities, parks and trails	Number of fast food restaurants	Number of places that sell tobacco	Number of liquor stores	Bicycle and walking paths and trails	Total
97321	North Albany	6 (30.0)	6 (30.0)	0 (0.0)	3 (15.0)	5 (25.0)	20
97324	Alsea	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1
97326	Blodgett	1 (12.5)	3 (37.5)	2 (25.0)	0 (0.0)	2 (25.0)	8
97330	North Corvallis	66 (35.9)	56 (30.4)	7 (3.8)	2 (1.1)	53 (28.8)	184
97331	Oregon State University	1 (20.0)	2 (40.0)	0 (0.0)	0 (0.0)	2 (40.0)	5
97333	South Corvallis	35 (39.8)	27 (30.7)	6 (6.8)	0 (0.0)	20 (22.7)	88
97370	Philomath	13 (46.4)	6 (21.4)	2 (7.1)	2 (7.1)	5 (17.9)	28
97456	Monroe	6 (31.6)	5 (26.3)	1 (5.3)	0 (0.0)	7 (36.8)	19
Other	Other	10 (29.4)	10 (29.4)	3 (8.8)	2 (5.9)	9 (26.5)	34
Total		139 (35.9)	115 (29.7)	21 (5.4)	9 (2.3)	103 (26.6)	387

* 66 participants missing data

Table 8b. The **built environment or human-made surroundings** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by income.)*

Income	Access to recreational facilities, parks and trails	Number of fast food restaurants	Number of places that sell tobacco	Number of liquor stores	Bicycle and walking paths and trails	Total
Less than \$20,000	35 (30.2)	42 (36.2)	8 (6.9)	4 (3.4)	27 (23.3)	116
\$20,000 - \$29,999	17 (40.5)	11 (26.2)	2 (4.8)	2 (4.8)	10 (23.8)	42
\$30,000 – \$49,999	31 (44.9)	13 (18.8)	5 (7.2)	2 (2.9)	18 (26.1)	69
\$50,000 - \$74,999	24 (38.1)	17 (27.0)	0 (0.0)	1 (1.6)	21 (33.3)	63
\$75,000 and more	34 (33.0)	34 (33.0)	5 (4.9)	2 (1.9)	28 (27.2)	103
Total	141 (35.9)	117 (29.8)	20 (5.1)	11 (2.8)	104 (26.5)	393

* 60 participants missing data

Table 8c. The **built environment or human-made surroundings** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by ethnicity.)*

Ethnicity	Access to recreational facilities, parks and trails	Number of fast food restaurants	Number of places that sell tobacco	Number of liquor stores	Bicycle and walking paths and trails	Total
Hispanic or Latino	15 9 (36.6)	12 (29.3)	4 (9.8)	2 (4.9)	8 (19.5)	41
Non-Hispanic or Latino	133 (37.0)	104 (29.0)	17 (4.7)	9 (2.5)	96 (26.7)	359
Total	148 (37.0)	116 (29.0)	21 (5.3)	11 (2.8)	104 (26.0)	400

* 53 participants missing data

Table 8d. The **built environment or human-made surroundings** factor that has the GREATEST impact on the health of people in Benton County is...*(These results are stratified by age group.)*

Age Group	Access to recreational facilities, parks and trails	Number of fast food restaurants	Number of places that sell tobacco	Number of liquor stores	Bicycle and walking paths and trails	Total
18 – 24	17 (38.6)	16 (36.4)	4 (9.1)	1 (2.3)	6 (13.6)	44
25 – 34	33 (35.5)	31 (33.3)	7 (7.5)	4 (4.3)	18 (19.4)	93
35 – 54	52 (38.2)	34 (25.0)	8 (5.9)	2 (1.5)	40 (29.4)	136
55 – 64	34 (40.5)	22 (26.2)	3 (3.6)	3 (3.6)	22 (26.2)	84
65 and older	10 (20.0)	17 (34.0)	1 (2.0)	1 (2.0)	21 (42.0)	50
Total	146 (35.9)	120 (29.5)	23 (5.7)	11 (2.7)	107 (26.3)	407

* 46 participants missing data

Appendix J: Benton County Public Health Assessment Survey Results, Behavioral Risk Factor

Figure 9. The **health behavior** that has the greatest impact on improving the health of people in Benton County is...

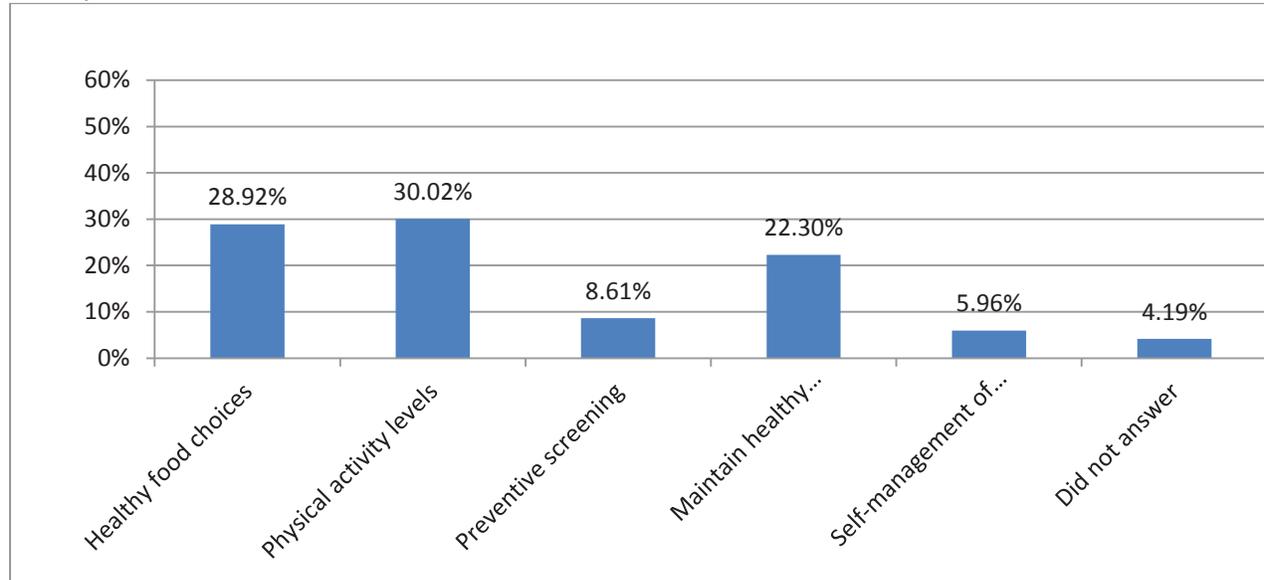


Table 9a. The **health behavior** that has the greatest impact on improving the health of people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Making healthy food choices	Physical activity	Getting preventive screening	Maintaining healthy weight	Self-management of chronic diseases	Total
97321	North Albany	7 (35.0)	4 (20.0)	1 (5.0)	6 (30.0)	2 (10.0)	20
97324	Alsea	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	3 (37.5)	2 (25.0)	0 (0.0)	3 (37.5)	0 (0.0)	8
97330	North Corvallis	55 (29.9)	59 (32.1)	19 (10.3)	40 (21.7)	11 (6.0)	184
97331	Oregon State University	1 (16.7)	1 (16.7)	1 (16.7)	2 (33.3)	1 (16.7)	6
97333	South Corvallis	28 (31.5)	26 (29.2)	8 (9.0)	19 (21.3)	8 (9.0)	89
97370	Philomath	9 (32.1)	11 (39.3)	0 (0.0)	8 (26.8)	0 (0.0)	28
97456	Monroe	5 (22.7)	7 (31.8)	3 (13.6)	7 (31.8)	0 (0.0)	22
Other	Other	6 (17.1)	13 (37.1)	3 (8.6)	9 (25.7)	4 (11.4)	35
Total		116 (29.4)	123 (31.2)	35 (8.9)	94 (23.9)	26 (6.6)	394

* 59 participants missing data

Table 9b. The **health behavior** that has the greatest impact on improving the health of people in Benton County is...(These results are stratified by income.)

Income	Making healthy food choices	Physical activity	Getting preventive screening	Maintaining healthy weight	Self-management of chronic diseases	Total
Less than \$20,000	40 (34.2)	37 (31.6)	14 (12.0)	22 (18.8)	4 (3.4)	117
\$20,000 - \$29,999	11 (25.6)	14 (32.6)	9 (20.9)	7 (16.3)	2 (4.7)	43
\$30,000 – \$49,999	25 (35.7)	26 (37.1)	6 (8.6)	9 (12.9)	4 (5.7)	70
\$50,000 - \$74,999	14 (22.2)	18 (28.6)	5 (7.9)	26 (41.3)	0 (0.0)	63
\$75,000 and more	30 (28.3)	30 (28.3)	1 (0.9)	32 (30.2)	13 (12.3)	106
Total	120 (30.1)	125 (31.3)	35 (8.8)	96 (24.1)	23 (5.8)	399

* 54 participants missing data

Table 9c. The **health behavior** that has the greatest impact on improving the health of people in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Making healthy food choices	Physical activity	Getting preventive screening	Maintaining healthy weight	Self-management of chronic diseases	Total
Hispanic or Latino	9 (22.0)	10 (24.4)	8 (19.5)	10 (24.4)	4 (9.8)	41
Non-Hispanic or Latino	112 (30.9)	118 (32.6)	29 (8.0)	82 (22.7)	21 (5.8)	362
Total	121 (30.0)	128 (31.8)	37 (9.2)	92 (22.8)	25 (6.2)	403

* 50 participants missing data

Table 9d. The **health behavior** that has the greatest impact on improving the health of people in Benton County is...(These results are stratified by age group.)

Age Group	Making healthy food choices	Physical activity	Getting preventive screening	Maintaining healthy weight	Self-management of chronic diseases	Total
18 – 24	15 (33.3)	15 (33.3)	4 (8.9)	8 (17.8)	3 (6.7)	45
25 – 34	33 (35.9)	24 (26.1)	11 (12.0)	19 (20.7)	5 (5.4)	92
35 – 54	43 (31.4)	48 (35.0)	10 (7.3)	28 (20.4)	8 (5.8)	137
55 – 64	23 (26.1)	27 (30.7)	7 (8.0)	26 (29.5)	5 (5.7)	88
65 and older	9 (18.4)	15 (30.6)	4 (8.2)	16 (32.7)	5 (10.2)	49
Total	123 (29.9)	129 (31.4)	36 (8.8)	97 (23.6)	26 (6.3)	411

Appendix K: Benton County Public Health Assessment Survey Results, Quality of Life

Figure 10. The **quality of life** factor that has the GREATEST impact on the community in Benton County is...

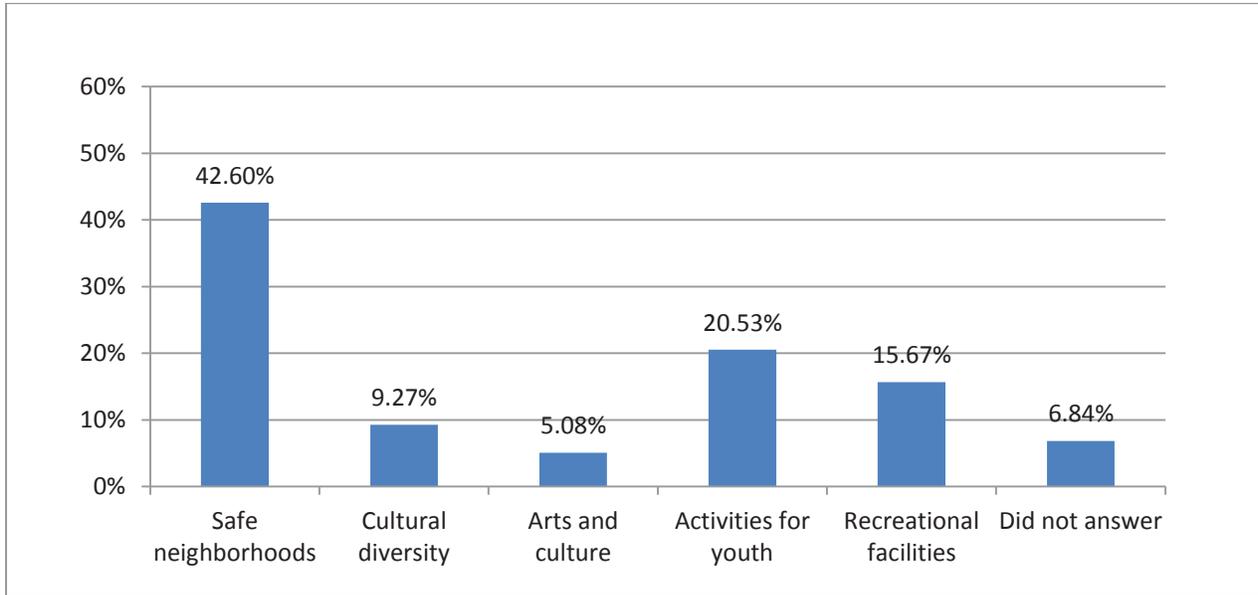


Table 10a. The **quality of life** factor that has the GREATEST impact on the community in Benton County is...*(These results are stratified by zip code.)*

Zip Code	City	Safe neighborhoods	Cultural diversity	Arts and culture	Activities for youth	Recreational facilities	Total
97321	North Albany	9 (45.0)	0 (0.0)	0 (0.0)	7 (35.0)	4 (20.0)	20
97324	Alsea	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	4 (50.0)	0 (0.0)	1 (12.5)	3 (37.5)	0 (0.0)	8
97330	North Corvallis	92 (51.7)	7 (3.9)	9 (5.1)	37 (20.8)	33 (18.5)	178
97331	Oregon State University	1 (20.0)	1 (20.0)	1 (20.0)	1 (20.0)	1 (20.0)	5
97333	South Corvallis	39 (44.8)	16 (18.4)	6 (6.9)	12 (13.8)	14 (16.1)	87
97370	Philomath	11 (37.9)	2 (6.9)	1 (3.4)	11 (37.9)	4 (13.8)	29
97456	Monroe	5 (23.8)	4 (19.0)	0 (0.0)	7 (33.3)	5 (23.8)	21
Other	Other	13 (38.2)	7 (20.6)	1 (2.9)	10 (29.4)	3 (8.8)	34
Total		175 (45.6)	38 (9.9)	19 (4.9)	88 (22.9)	64 (16.7)	384

* 69 participants missing data

Table 10b. The **quality of life** factor that has the GREATEST impact on the community in Benton County is...(These results are stratified by income.)

Income	Safe neighborhoods	Cultural diversity	Arts and culture	Activities for youth	Recreational facilities	Total
Less than \$20,000	45 (40.9)	14 (12.7)	5 (4.5)	29 (26.4)	17 (15.5)	110
\$20,000 - \$29,999	19 (42.2)	9 (20.0)	3 (6.7)	7 (15.6)	7 (15.6)	45
\$30,000 - \$49,999	27 (38.0)	7 (9.9)	4 (5.6)	20 (28.2)	13 (18.3)	71
\$50,000 - \$74,999	33 (53.2)	3 (4.8)	1 (1.6)	16 (25.8)	9 (14.5)	62
\$75,000 and more	56 (53.8)	6 (5.8)	7 (6.7)	16 (15.4)	19 (18.3)	104
Total	180 (45.9)	39 (9.9)	20 (5.1)	88 (22.4)	65 (16.6)	392

* 61 participants missing data

Table 10c. The **quality of life** factor that has the GREATEST impact on the community in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Safe neighborhoods	Cultural diversity	Arts and culture	Activities for youth	Recreational facilities	Total
Hispanic or Latino	14 (36.8)	8 (21.1)	3 (7.9)	10 (26.3)	3 (7.9)	38
Non-Hispanic or Latino	168 (46.8)	31 (8.6)	18 (5.0)	79 (22.0)	63 (17.5)	359
Total	182 (45.8)	39 (9.8)	21 (5.3)	89 (22.4)	66 (16.6)	397

* 56 participants missing data

Appendix L: Benton County Public Health Assessment Survey Results, Community Issue

Figure 11. The major **community issue** that has the GREATEST impact on public health planning is...

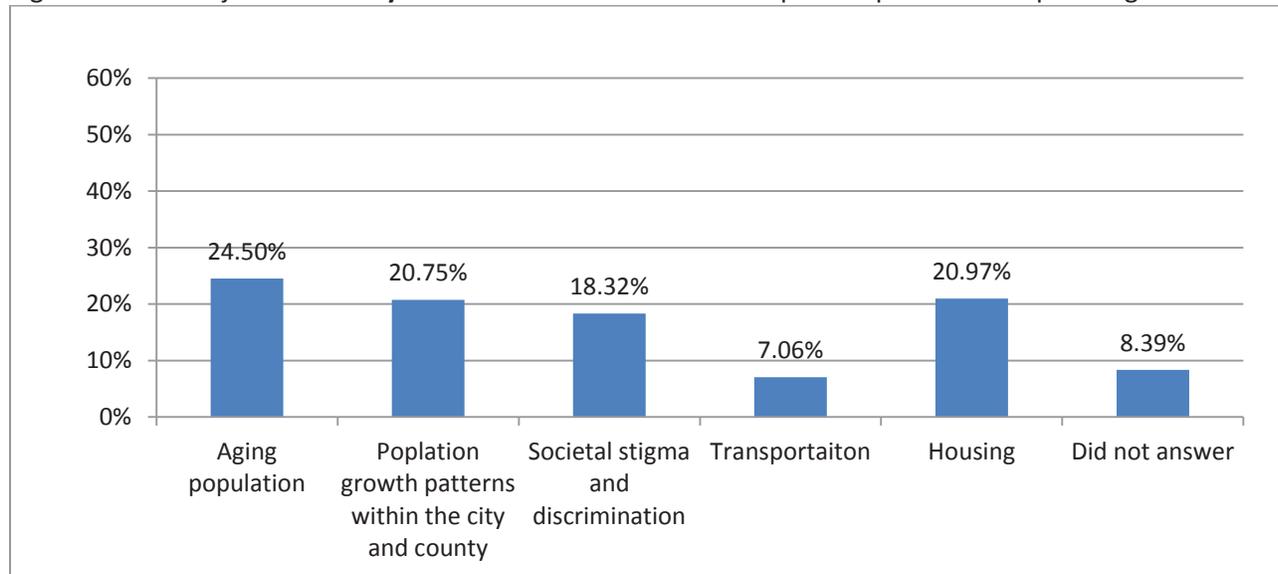


Table 11a. The major **community issue** that has the GREATEST impact on public health planning is...(These results are stratified by zip code.)

Zip Code	City	Aging Population	Population growth patterns	Societal stigma and discrimination	Transportation	Housing	Total
97321	North Albany	11 (55.0)	2 (10.0)	3 (15.0)	2 (10.0)	2 (10.0)	20
97324	Alsea	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	0 (0.0)	2 (28.6)	1 (14.3)	2 (28.6)	2 (28.6)	7
97330	North Corvallis	43 (23.9)	41 (22.8)	36 (20.0)	10 (5.6)	50 (27.8)	180
97331	Oregon State University	2 (40.0)	0 (0.0)	1 (20.0)	0 (0.0)	2 (40.0)	5
97333	South Corvallis	25 (29.4)	19 (22.4)	13 (15.3)	6 (7.1)	22 (25.9)	85
97370	Philomath	8 (32.0)	3 (12.0)	4 (16.0)	1 (4.0)	9 (36.0)	25
97456	Monroe	2 (9.5)	8 (38.1)	6 (28.6)	2 (9.5)	3 (14.3)	21
Other	Other	5 (14.3)	7 (20.0)	15 (42.9)	3 (8.6)	5 (14.3)	35
Total		96 (25.3)	84 (22.1)	79 (20.8)	26 (6.8)	95 (25.0)	380

* 73 participants missing data

Table 11b. The major **community issue** that has the GREATEST impact on public health planning is...(These results are stratified by income.)

Income	Aging Population	Population growth patterns	Societal stigma and discrimination	Transportation	Housing	Total
Less than \$20,000	15 (13.5)	25 (22.5)	27 (24.3)	9 (8.1)	35 (31.5)	111
\$20,000 - \$29,999	6 (14.3)	12 (28.6)	13 (31.0)	4 (9.5)	7 (16.7)	42
\$30,000 – \$49,999	19 (28.8)	17 (25.8)	12 (18.2)	4 (6.1)	14 (21.2)	66
\$50,000 - \$74,999	19 (31.1)	11 (18.0)	13 (21.3)	5 (8.2)	13 (21.3)	61
\$75,000 and more	42 (40.0)	19 (18.1)	16 (15.2)	6 (5.7)	22 (21.0)	105
Total	101 (26.2)	84 (21.8)	81 (21.0)	28 (7.3)	91 (23.6)	385

* 68 participants missing data

Table 11b. The major **community issue** that has the GREATEST impact on public health planning is...(These results are stratified by ethnicity.)

Ethnicity	Aging Population	Population growth patterns	Societal stigma and discrimination	Transportation	Housing	Total
Hispanic or Latino	7 (19.4)	1 (2.8)	21 (58.3)	1 (2.8)	6 (16.7)	36
Non-Hispanic or Latino	96 (27.3)	84 (23.3)	60 (17.0)	25 (7.1)	87 (24.7)	352
Total	103 (26.5)	85 (21.9)	81 (20.9)	26 (6.7)	93 (24.0)	388

* 65 participants missing data

Figure 11d. The **community issue** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by education.)

Education	Aging Population	Population growth patterns	Societal stigma and discrimination	Transportation	Housing	Total
Less than High School	6 (24.0)	3 (12.0)	11 (44.0)	0 (0.0)	5 (20.0)	25
High School Graduate	3 (6.8)	13 (29.5)	11 (25.0)	6 (13.6)	11 (25.0)	44
Some College or Associates Degree	19 (20.9)	19 (20.9)	14 (15.4)	6 (6.6)	33 (36.3)	91
Bachelor’s Degree or higher	76 (32.1)	53 (22.4)	45 (19.0)	17 (7.2)	46 (19.4)	237
Total	104 (26.2)	88 (22.2)	81 (20.4)	29 (7.3)	95 (23.9)	397

* 56 participants missing data

Appendix M: Benton County Public Health Assessment Survey Results, Community Investment

Figure 12. The **community investment** that has the GREATEST impact on the health of people in Benton County is...

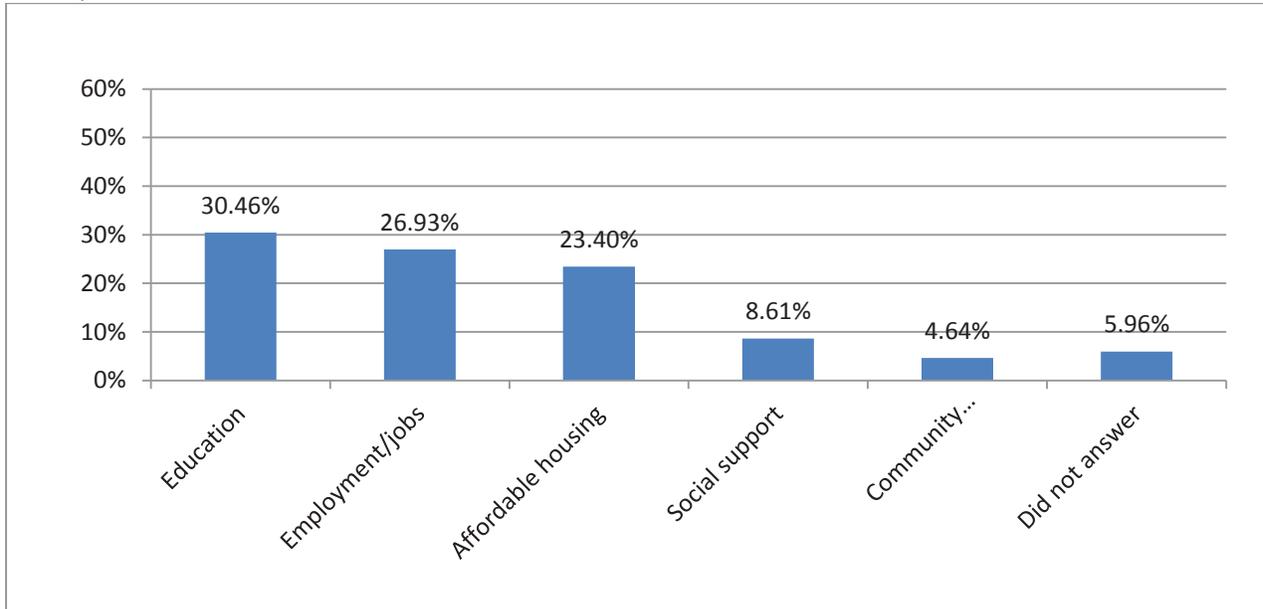


Figure 12a. The **community investment** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by zip code.)

Zip Code	City	Education	Jobs	Affordable housing	Social support	Community safety/crime	Total
97321	North Albany	4 (20.0)	10 (50.0)	3 (15.0)	1 (5.0)	2 (10.0)	20
97324	Alsea	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2
97326	Blodgett	2 (28.6)	5 (71.4)	0 (0.0)	0 (0.0)	0 (0.0)	7
97330	North Corvallis	55 (30.2)	47 (25.8)	51 (28.0)	22 (12.1)	7 (3.8)	182
97331	Oregon State University	1 (20.0)	1 (20.0)	3 (60.0)	0 (0.0)	0 (0.0)	5
97333	South Corvallis	31 (36.0)	22 (25.6)	21 (24.4)	9 (10.5)	3 (3.5)	86
97370	Philomath	11 (37.9)	8 (27.6)	7 (24.1)	0 (0.0)	3 (10.3)	29
97456	Monroe	8 (38.1)	6 (28.6)	7 (33.3)	0 (0.0)	0 (0.0)	21
Other	Other	7 (19.4)	13 (36.1)	8 (22.2)	6 (16.7)	2 (5.6)	36
Total		121 (31.2)	112 (28.9)	100 (25.8)	38 (9.8)	17 (4.4)	388

* 65 participants missing data

Figure 12b. The **community investment** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by income.)

Income	Education	Jobs	Affordable housing	Social support	Community safety/crime	Total
Less than \$20,000	30 (27.5)	30 (27.5)	31 (28.4)	13 (11.9)	5 (4.6)	109
\$20,000 - \$29,999	10 (22.2)	15 (33.3)	13 (28.9)	3 (6.7)	4 (8.9)	45
\$30,000 – \$49,999	25 (35.2)	21 (29.6)	18 (25.4)	6 (8.5)	1 (1.4)	71
\$50,000 - \$74,999	18 (29.0)	23 (37.1)	14 (22.6)	3 (4.8)	4 (6.5)	62
\$75,000 and more	40 (37.7)	24 (22.6)	25 (23.6)	14 (13.2)	3 (2.8)	106
Total	123 (31.3)	113 (28.8)	101 (25.7)	39 (9.9)	17 (4.3)	393

* 60 participants missing data

Figure 12c. The **community investment** that has the GREATEST impact on the health of people in Benton County is...(These results are stratified by ethnicity.)

Ethnicity	Education	Jobs	Affordable housing	Social support	Community safety/crime	Total
Hispanic or Latino	15 (36.6)	8 (19.5)	14 (34.1)	2 (4.9)	2 (4.9)	41
Non-Hispanic or Latino	115 (32.0)	105 (29.2)	85 (23.7)	37 (10.3)	17 (4.7)	359
Total	130 (32.5)	113 (28.3)	99 (24.8)	39 (9.8)	19 (4.8)	400

* 53 participants missing data

Appendix N: Benton County Health Department and Community Partner Sub-population Health Disparities and Lifespan Assessment Compilation (2006 to 2011)

Tobacco and Other related Chronic Disease Diseases Community Assessment (2007-2008)

The purpose of the community assessment and environmental scan was to inform Benton County in planning a population-based approach to reducing the burden of chronic diseases most closely linked to physical inactivity, poor nutrition, and tobacco use.

Assessing Social, Environmental and Behavioral Determinants of Health and Chronic Disease among Latinos in Benton County, Oregon: A Pilot Quantitative Approach

The purpose of this study was to examine the social, environmental, and behavioral determinants of health and chronic disease among Latinos living in Benton County.

Casa Latinos Unidos de Benton County Community Needs and Assets (2007)

The purpose of the assessment was to evaluate the health assets and needs of the Latino population in Benton County.

Climate Change Health Adaptation Plan (2012)

Identify health problems in relation to climate change. The information will lead to a completed Climate Health Adaptation Plan specific to Benton County Health Department. The main goal is to have a strategy in place that helps to mitigate climate change effects on the health of the community, and help support other climate change initiatives within the county and city.

Las Comidas Latina Nutrition Assessment (2007-2009)

The purpose of the assessment was to describe the level of household food insecurity, investigate factors influencing food insecurity, identifying dietary practices and food preferences, assess nutritional interests and needs and identify Latino in Linn and Benton County.

Voceros de Salud/Latino Health Ambassadors Final Report (2010)

An 18-month long community-based participatory project using a collaborative approach to research with the aim of combining knowledge with action and achieving social change to improve health outcomes and eliminate health disparities.

Rural Youth Engagement Assessment (2009-2012)

The purpose was to provide Creciendo en Salud Healthy Kids Healthy Communities Project with in-depth information on the perspectives of youth and youth-serving professionals on incorporating youth involvement and engagement in organizational decision making processes.

Benton County Lesbian, Gay, Transgender, Queer Health Assessment (2009-2010)

The purpose of the assessment was to gain a better understanding of the specific health resources and gaps among LGBTQ Benton County residents.

Benton County Mental Health Consumer Focus Groups (2009)

The goal of the assessment was to gain a better understanding of the premature death in mental health consumers in Benton County.

Benton County Strategic Prevention Framework Town Halls (2012)

The purpose was to assess different populations' opinions on the most important causes for the misuse of alcohol among young adults in Benton County.

Rural Healthy Aging Focus Group (2009)

Assess health resources and gaps among older adults living in rural areas of Benton County.

Benton Healthy Aging Coalition Town Halls (2012)

The purpose was to facilitate a process aimed at creating collaborative dialogue, sharing mutual knowledge and discovering new opportunities for action regarding healthy aging issues.

Benton County Assessment Dental Care Need

The purpose was to collect quantitative and qualitative information to inform the Benton County Oral Health Coalition on solutions to oral health needs among uninsured adults.

Report to Oregon Health Policy Board: Benton County Coordinated Care Community Meeting (2012)

The purpose is to document public input in response to the Oregon Health Authority's development of Coordinated Care Organizations.

Rural Grocery Store Owner and Customer Assessment (2011)

The purpose of survey was to explore the challenges faced by rural grocery store owners and community resident's access to a variety of affordable and healthful foods.

Linn-Benton Latino Housing Stakeholder (2012)

Key informant discussion on issues of faced by Latino residents regarding safe and affordable access to housing in Linn and Benton County.

Appendix O: Benton County Community Assessment Partnerships and Acknowledgements

Description Benton County Community Health Assessment Process:

In 2012, Benton County Health Department is engaging in a Public Health Assessment process. The vision of this process is a forward-looking community in which everyone has equitable opportunities for health, starting in the places where health begins – where we live, work, learn, and play.

The Public Health Assessment describes the current status of our diverse communities' health; define areas for improvement, focusing on those who face significant barriers to health; and identify organizations and community resources that can be used to improve health for the entire community.

Outreach efforts seeking community input include large community events, meetings with advisory committees and coalitions, and targeted outreach to harder to reach populations through web and paper surveys. These efforts, combined with the county's online Health Status Report (http://www.co.benton.or.us/health/health_status/index.php) and synthesis of cross-sectional and targeted assessments, the input gathered from community members helps to create a snapshot of community health that will inform the Community Health Improvement Plan, public health accreditation, and health care transformation that is happening at the state and local levels.

Community Assessment Partners and Acknowledgements:

Benton County Healthy Communities Coalition	Daniel Lopez, PhD, Consulting Organization
Benton County LGBTQ Health Coalition	Mental Health, Addition, and Developmental Disabilities Advisory Committee
Benton County Oral Health Coalition	Oregon Food Bank
Benton County Healthy Communities Coalition	Oregon State University Extension, Linn and Benton Counties
Benton County Public Health Advisory and Planning Committee	Organization Latinas Unidos
Benton Linn Health Equity Alliance	Samaritan Health Services
Benton Linn Healthy Aging Coalition	Ten Rivers Foodweb
Benton County Peer Wellness Program	The Partnership: To Reduce Excessive and Under-age Drinking
Center Against Rape and Domestic Violence	United Way of Benton and Lincoln Counties
Casa Latinos Unidos de Benton County	Voceros de Salud
Coast to Cascades Collaborative	Willamette Neighborhood Housing
Creciendo en Salud, Healthy Kids Healthy Communities	

Benton County Community Partner Resources

Assessment of Dental Care Needs in Benton County Adults, Community Health Centers of Linn and Benton Counties

<http://www.lwv.corvallis.or.us/Dental%20Needs%20Assessment%209-29-2011.pdf>

Benton County Health Status Report, 2012, Benton County Health Department

http://www.co.benton.or.us/health/health_status/index.php

City of Corvallis Parks and Recreation Cost Recovery and Master Plan Survey

<http://www.corvallisoregon.gov/index.aspx?page=252>

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Oregon State University Student Health Services Annual Report, 2010-2011

<http://studenthealth.oregonstate.edu/>

State Resources

Adult Protective Services Community and Facility Annual Report, 2010, Aging and People with Disabilities

<http://www.dhs.state.or.us/spd/tools/cm/aps/index.htm>

County Health Ranking and Roadmap, University of Wisconsin Population Health Institute

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Heart disease and stroke in Oregon: Update 2010

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State Plan for Alzheimer's Disease and Related Dementias in Oregon, 2012, SPADO Taskforce

http://www.alz.org/oregon/documents/spado_report.pdf

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Integrated Model of Care Matrix

Level of Care	Primary Care Medically Based Service Episodic Service as needed	Mild Mental Health Behaviorist 1-3 Sessions	Moderate Mental Health Brief Therapy 1-6 sessions	Serious Mental Health Outpatient Bi-Annual Review	Severe Mental Health Specialty Services Bi-Annual & Annual Review
Diagnostic Criteria - Functioning / Acuity	<ul style="list-style-type: none"> • Wellness & prevention • Procedure oriented services • Acute medical condition/problem • Testing • Inoculation • Wound care • Family planning • PSS Score of 2 or more on A –F or “Yes” on P-Cognition • GAF any score 	<ul style="list-style-type: none"> • Mild or transient sx's • Sleep problems • Transient pain • Mild medical condition • DX examples: Mild depression/anxiety • Parenting or relationship problems • PSS Score of 2 or less on A- F or “Yes” on P-Cognitive • GAF 71-80 	<ul style="list-style-type: none"> • Primary DX is mental health • Moderate medical co-morbidity • Non-compliance with medical treatment (i.e. not checking blood sugar) • DX examples: Moderate anxiety or depression, PTSD, moderate bipolar disorder, schizoaffective w/out major functional impairment • Moderate occupational, educational or relational impairment • PSS Score of 2 or 3 on any sx's on C-F or L and “Yes” on P-Cognitive • GAF Score or 61-70 	<ul style="list-style-type: none"> • Major mental illness • Multiple complex medical co-morbidities • Isolated or chaotic family/community environment • Requires active rehabilitative intervention to stabilize/avoid further deterioration • DX ex.: Schizophrenia, Schizoaffective or bipolar D/O, PTSD, Personality D/O, major depression / anxiety / OCD, substance abuse / dependence • Major social/ occupational impairment • PSS Score of 3-4 any sx's indicator C-H and; • 3-4 on at least 2 functional indicators A, B and I-O • GAF Score 41-60 	<ul style="list-style-type: none"> • Severe and persistent major mental illness • Danger of hospitalization • Serious emotional disorder • Serious functional impairment • Some impairment in reality testing • Major social / occupational impairment • Major impact on daily living / judgment / thinking • Bx is seriously influenced by delusions or hallucinations • Serious impairment in Communication • Some danger of hurting self or others • Failure to maintain minimal personal hygiene • Multiple, complex medical co-morbidities • Absence of support in community or family • Substance Abuse • PSS Score of 4-5 on any sx's indicator C-H and; • 4-5 on at least 2 functional indicators A, B and I-O • GAF Score 20-40



Integrated Model of Care Matrix

Level of Care	Primary Care Medically Based Service Episodic Service as needed	Mild Mental Health Behaviorist 1-3 Sessions	Moderate Mental Health Brief Therapy 1-6 sessions	Serious Mental Health Outpatient Bi-Annual Review	Severe Mental Health Specialty Services Bi-Annual & Annual Review
Services		<ul style="list-style-type: none"> • Assessment • Acute and episodic primary care services • Preventative Services • Chronic pain management • Pharmacy • Screening (i.e.) PhQ 9 or GAD 7; PhQ 15 • 1-3 Behavioral Sessions in Primary Care setting • Wellness focused Behavioral Intervention (e.g. Solution Focused or Cognitive Behavioral) • Development of exercise, diet or sleep hygiene plan • Supportive / empathic listening • Assertiveness or relaxation skills training • SBIRT (possible referral for substance abuse services) • Watchful Waiting 	<ul style="list-style-type: none"> • Assessment • 1-6 Brief therapy sessions (e.g. Solution Focused, Cognitive Behavioral) • Family therapy • Group therapy • Skills training • Assertiveness training • Medication management • Primary care prescribing • Standardized screening tools (i.e.) PhQ9, GAD 7, PhQ 15, Audit • Substance abuse treatment 	<ul style="list-style-type: none"> • Assessment • Review bi-annually • Individual therapy • Group therapy • Family therapy • Case management (e.g. obtain financial and health benefits) • Skills training (budgeting, cooking, household skills, assertiveness, social skills, medication training etc.) • Medication management • Peer support • Psychiatric prescribing • Respite as needed • Vocational training and referral • Standardized screening tools (i.e.) PhQ9, GAD 7, PhQ 15, Audit • Outpatient co-occurring substance abuse treatment 	<ul style="list-style-type: none"> • Assessment • Bi-annual and annual review • ACT services or intensive outpatient services • Peer support • Individual and group services • Supported housing • Medication training and support / daily dispense • Case management (e.g. obtain financial and health benefits) • Skills training (budgeting, cooking, household skills, assertiveness, social skills, medication training etc.) • Psychiatric and emergency prescribing • Respite as needed • Periodic hospitalization as needed • Consistent/Active rehabilitative interventions to stabilize/avoid further deterioration • Standardized screening tools (i.e.) PhQ9, GAD7, PhQ15, Audit, LOCUS, PASSAR (as needed) • Co-occurring AOD treatment

Benton
Health
Services

2012

Performance
Management
and Quality
Improvement
Framework

Approved/Endorsed by:

BHS Quality Steering Committee

Community Health Centers of Benton and Linn Counties Board

Public Health Planning and Advisory Committee

Mental Health, Addictions, Developmental Disabilities Advisory Committee

Date:

October 19, 2012

January 28, 2013

April 15, 2013

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Approval/Endorsement Signatures

Approved by Benton Health Services Quality Steering Committee

Signature

Date

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Date

Approved by Community Health Centers of Benton and Linn Counties Board

Signature

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Endorsed by Public Health Planning and Advisory Committee

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Endorsed by Mental Health, Addictions, Developmental Disabilities Advisory Committee

Signature

Date

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Table of Contents

1	Purpose	1
2	Guiding Principles	1
3	Definitions.....	2
4	Acronyms	4
5	Overview of BCHS Performance Management and Quality Improvement.....	4
6	Methodology	5
	6.1 Performance Standards	6
	6.2 Performance Measurement.....	6
	6.3 Improvement	7
7	Project Identification, Prioritization and Initiation.....	7
	7.1 “Big QI”	7
	7.2 Project Identification: “small qi”	8
	7.3 Prioritizing Improvement Opportunities	9
	7.4 Project initiation.....	9
8	Reporting, monitoring and sharing.....	10
9	Quality Improvement Model: PDSA and DMAIC	11
10	Governance, Structure, Roles and Responsibilities	12
	10.1 Oversight Roles and Responsibilities	12
	10.2 Leadership and Staff Roles and Responsibilities.....	14
	10.3 Membership of the Quality Steering Committee	15
11	Performance Management and Quality Improvement Training.....	16
12	Change Management.....	17
13	Record Keeping and Confidentiality	17
	Appendix A: A note about innovation.....	18
	Appendix B: Performance Improvement Priority Matrix.....	19
	Appendix C: Big QI, Little qi, and Individual qi	20
	Appendix D: Quality Improvement Activity Calendar.....	21
	Endnotes	22

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Performance Management and Quality Improvement Framework

1 Purpose

The purpose of the Benton County Health Services (BCHS) Quality Improvement Framework and Annual QI Plan is to provide context and guide processes for performance management (PM) and quality improvement (QI) activities at Benton County Health Services. Health Services include both Benton County Health Department and Community Health Centers of Benton and Linn Counties.

Policy Statement: BCHS is committed to linking its mission to performance measures and to systematically reporting, evaluating and improving the quality of programs, processes and client-centered services. Our goal is to achieve the best possible health outcomes and to make efficient and effective use of resources. To achieve this culture of continuous improvement, QI efforts are aimed at both organization-level (“Big QI”)¹ and program- or project- level (“Small QI”) initiatives.

2 Guiding Principles

Underlying principles that guide BCHS towards improved performance are:

- Alignment of performance improvement and quality improvement with mission, vision and values of BCHS
- Commitment to a collaboratively planned, systematic and organization-wide approach to improving organizational performance
- Collaborative approach to improvement that includes clinical and administrative leadership, the staff at all levels, clients and community members
- Transparency that leads to accountability to BCHS’ clients, regulatory and oversight bodies and other stakeholders
- Commitment to improving outcomes, processes and capacities – at every level in the organization
- Staff involvement in project selection, design and implementation
- Training investment to assure equipped, competent improvement teams
- Sharing and learning from improvement project successes and failures

3 Definitions

Aim statement is a written, measurable, and time-sensitive description of the accomplishments an improvement team expects to make from its improvement efforts. The Aim Statement answers the question: “What are we trying to accomplish?” For tips on writing an effective Aim Statement review page 1 of [“QI Planning Worksheet”](#).

Big QI refers to improvement initiatives that are identified in an annual QI plan and that have organization-wide or cross-functional, interdisciplinary scope. **Little qi** includes program-level initiatives and may include some cross-functional initiatives. Personal improvement goals (“i-qi”) are intended to tie to both “Big QI” and “small qi” projects.

Capacity means the ability of a work group, program, or organization to carry out its mission and essential services. This ability is made possible by specific program resources as well as by maintenance of the basic infrastructure of the public health system. Capacity means, for example, that you have sufficient staff, training, facilities, and finances, among other things.² Organizational capacity is a critical predictor of an organization's effectiveness and ability to implement and sustain new programs and policies.

DMAIC is a framework used for reducing variability in a process. The five phases in the DMAIC model are: **Define, Measure, Analyze, Improve, Control**.

Lean Six Sigma: is a combined business management strategy to improve quality. “Lean” and “Six Sigma” are complementary strategies. **Lean** focuses on improving the efficiency of a process by distinguishing value-added steps from non-value-added steps, and eliminating waste so that every step adds value to the process. **Six Sigma** focuses on reducing variability in a process and is built on a five-phase framework referred to as DMAIC.

Outcome means a change, or lack of change, in the health of a defined population that is related to a public health intervention – such as the tests, investigations, or educational services you offered as part of your process, above. Outcomes can be of three types:

Health Status Outcome. A change, or lack of change, in physical or mental status.

Social Functioning Outcome. A change, or lack of change, in the ability of an individual to function in society.

Consumer Satisfaction. The response of an individual to services received from a provider or program.³

Process means the things that are done by defined individuals or groups – or to, for, or with individuals or groups – as part of the *provision* of public health services. Process means all the things we do in public health practice; for example, conducting educational classes, performing a test or procedure, investigating a complaint, crunching data, or meeting with community groups.⁴

Performance Management is the practice of actively using performance data to improve capacities, processes and health outcomes. It includes setting performance standards, as well as measuring, improving, and reporting performance.

Plan-Do-Study-Act (PDSA) is an iterative four-stage problem-solving model for improving a process or carrying out change. PDSA stems from the scientific method (hypothesize, experiment, evaluate). A fundamental principle of PDSA is iteration. Once a hypothesis is supported or negated, executing the cycle again will extend what one has learned.⁵

Quality Assurance focuses on systematic monitoring and evaluation of programs and services to assure compliance with requirements of federal, state, grantors, and accrediting agencies in regard to quality.

Quality Improvement is an integrative process that links knowledge, structures, processes and outcomes to enhance quality throughout an organization. The intent is to improve the level of performance of key processes and outcomes within an organization.⁶ It is designed to create a culture of shared learning and cooperation where both data and team knowledge are used to

- improve access to services
- quality of care, service delivery and clinical outcomes
- integration and coordination with providers, community partners, and key stakeholders
- outreach and prevention activities
- customer and employee satisfaction

Quality Improvement Plan (QIP): identifies specific areas of current operational performance for improvement within the agency. These plans can and should cross-reference one another, so a quality improvement initiative that is in the QIP may also be in the Strategic Plan.⁷

Quality Methods: builds on an assessment component in which a group of selected indicators [selected by an agency] are regularly tracked and reported. The data should be regularly analyzed through the use of control charts and comparison charts. The indicators show whether or not agency goals and objectives are being achieved and can be used to identify opportunities for improvement. Once selected for improvement, the agency develops and implements interventions, and re-measures to determine if interventions were effective. These quality methods are frequently summarized at a high level as the Plan/Do/Study/Act (PDSA) or Shewhart Cycle.⁸

Quality Tools: are designed to assist a team when solving a defined problem or project. Tools will help the team get a better understanding of a problem or process they are investigating or analyzing. Some basic QI tools will be available on the Bentranet at some future time.⁹

Six Sigma: see “*Lean Six Sigma*” above.

Strategic Planning and Program Planning and Evaluation: Generally, Strategic Planning and Quality Improvement (Big QI) occur at the level of the overall organization, while Program Planning and Evaluation are program specific activities that feed into the Strategic Plan and into Quality Improvement. Program evaluation alone does not equate with Quality Improvement unless program evaluation data are used to design program improvements and to measure the results of the improvements as implemented.¹⁰

4 Acronyms

BCHS	Benton County Health Services
BCHS	Benton County Health Department
CHA	Community Health Assessment
CHIP	Community Health Improvement Plan
DMAIC	Define, Measure, Analyze, Improve, Control
HER	Electronic Health Record
HP2020	Healthy People 2020
HRSA	Health Resources and Services Administration
i-QI	Individual, personal improvement goals
NPHSP	National Public Health Performance Standards Program
PCPCH	Patient Centered Primary Care Home
PDSA	Plan-Do-Study-Act
PHAB	Public Health Accreditation Board
PM	Performance Management
QA	Quality Assurance
QI	Quality Improvement
QIP	Quality Improvement Plan
QSC	Quality Steering Committee
Q-Team	Quality Improvement Advisors
SMART	Specific, Measurable, Attainable, Relevant, Timely

5 Overview of BCHS Performance Management and Quality Improvement

Annually BCHS reviews data and assesses performance in the key areas identified below. BCHS' performance is assessed using performance standards to identify strengths and weaknesses and opportunities for improvement are identified. Improvement opportunities are prioritized and translated into system's level initiatives (Big 'QI'). The Quality Steering Committee (QSC) sets goals and communicates direction through the annual Quality Improvement Plan (QIP). These strategies are translated into performance measures that cascade into program-level (Little 'qi') and individual-level quality improvement action plans across the organization. Managers and staff identify measures related to their specific action plans. Plans and processes are executed and measured using small improvement cycles. Performance is measured, analyzed and used to drive decisions for additional actions. Improvement activities are shared in order to learn from both successes and failures. Successful improvement strategies are used to spread improvement to other areas of the organization.

6 Methodology

BCHS uses an approach to quality improvement that is consistent with performance management strategies¹¹. The following four components provide a framework for BCHS quality improvement.

Performance Standards are generally accepted, objective standard of measure such as a rule or guideline against which an organization's level of performance can be compared.¹² They are used to set a level of performance that is desired or expected.

Performance Measurement is the regular collection and reporting of data to track work produced and results achieved.¹³ Capacities, processes, or outcomes may be measured.

Improvement of outcomes and processes is based on analysis of quantitative and qualitative data.

Reporting, monitoring and sharing of performance indicators and improvement results are monitored and shared with leadership, staff, community partners, clients, regulatory groups and other stakeholders.



Figure 1: Turning Point Performance Management System¹⁴

6.1 Performance Standards

Standards set a level of performance that is desired or expected. In public health and primary care, standards may describe population health status, client health status, client care, and agency systems, and infrastructure. BCHS identifies standards for core areas including:

Population- and client-focus:

- quality of individual and population health
- access to services (note to be removed later: includes healthcare, EH, DD, etc.)
- opportunities to make choices that lead to a long healthy life
- per-capita cost of care

Organizational/operational focus:

- leadership and governance
- workforce capability, environment, engagement and development
- work processes
- financial performance

Quality Indicators

Standards are available from sources such as Healthy People 2020 (HP2020), Meaningful Use, Patient Centered Primary Care Home (PCPCH), Public Health Accreditation Board (PHAB), Health Resources and Services Administration (HRSA), National Public Health Performance Standards Program (NPHPSP), etc. BCHS also benchmarks against similar organizations. Quality indicators may include:

- population health indicators
- clinical standards
- other professional benchmarks
- regulatory standards set by oversight agencies
- accreditation standards
- expectations of clients and staff

6.2 Performance Measurement

BCHS evaluates performance by measuring its outcomes, processes and capacities against internal and external indicators. Performance is assessed:

Annually	to determine if improvement initiatives have met their goals; to track trends over time; to identify gaps; and develop the next QI Plan and set realistic goals for improvement
Quarterly	to monitor improvements continuously and determine whether they have met their goals; and to identify areas where additional QI activity may be required
Weekly/Monthly	to determine if a test of change is successful or whether adjustments are needed to achieve improvement; to monitor incremental improvements over time; and to measure stability of a process over time

Comparison of BCHS performance against indicators is quantified by incremental degrees. In addition, monitoring quality indicators provide a means for communicating success within the organization and to external stakeholders.

Data used in the assessment of BCHS' quality of care and organizational performance is collected from many different sources including results from client surveys, audit and accreditation reviews, community health assessments, national/state/local health status reports, clinical information systems, internal incident and complaint logs, financial information systems, employee surveys, and input from partners and external stakeholders.

6.3 Improvement

Improvement initiatives are identified on both an annual basis and on an ongoing basis and are encouraged at all levels in the organization. Performance information is used to determine areas for additional analysis and to set priorities.

In an effort to communicate clearly about QI projects, BCHS differentiates between “Big QI”, “little qi” and “individual qi” (“i-qi”). “Big QI” refers to improvement initiatives that are identified in an annual QI plan and that have organization-wide or cross-functional, interdisciplinary scope. “Little qi” includes program-level initiatives and may include some cross-functional initiatives. Personal improvement goals (“i-qi”) are intended to tie to both “Big QI” and “small qi” projects; the link from “Big QI”/“little qi” to individual performance will be strengthened in the future.

7 Project Identification, Prioritization and Initiation

7.1 “Big QI”

The Quality Improvement Plan (QIP) identifies specific areas of current operational performance for improvement. The QIP is reviewed and updated on an annual basis to reflect priorities in both the population/client and the organizational focus areas (see *Performance Standards* above). Selection and prioritization of “Big QI” initiatives is led by the Quality Steering Committee (QSC) and is guided by the principles described below (*Prioritization*).

Expected outcomes for each of the selected priorities are identified by the program areas that will be involved in making the improvement. Oversight responsibilities of senior leadership and the QSC add an element of accountability for setting goals that are both realistic and challenging. When the QIP is complete with initiatives and goals, the QIP is reviewed and approved by the CHC Board and is shared with BCHD advisory groups and Board of Health for their information.

Approved “Big QI” initiatives cascade to department- and inter-departmental initiatives aimed at operationalizing “Big QI” improvements. At the department- and program-level, strategies are identified and set to help achieve initiatives identified in the QI Plan. Aim statements are documented using SMART principles (specific, measurable, attainable, relevant, timely). Specific

actions, resources and performance indicators are identified for the program-level initiatives; baselines are established as a basis for evaluating the degree of improvement.

In addition to the annual QIP, BCHD conducts a Community Health Assessment (CHA) and develops a Community Health Improvement Plan (CHIP) every 3-5 years. Community partners are engaged in assessment as well as improvement planning and implementation. A portion of the BCHD strategic plan is aligned with the specific improvement areas identified in the CHIP. A similar process is followed by CHC by conducting a community needs assessment to identify key populations and services to target. Prioritization focuses on community health and capacity-building priorities.

7.2 “Small qi”

Performance and quality improvement are encouraged at all levels in the organization and are not limited to the “Big QI” initiatives. “Small qi” activities include interdepartmental or multi-disciplinary representation in most instances. (Note: “small qi” does not indicate the “size” of a project. Rather it is an indicator of initiatives that are not identified as an organization level initiative.) Initiatives that address gaps identified by audits, compliance with OARs, accreditation requirements, and other regulatory and/or compliance requirements generally are managed at the program or service level as a “small qi” project.

Opportunities for process improvement identified at the unit, department, or service level, which do not involve other areas, are acted upon using systematic process improvement techniques within the department. Departmental initiatives are prioritized based upon the process's relevance to the department's mission, impact upon patient safety and care or other department-specific factors. As with other projects, project leads are encouraged to establish quality, cost or service targets as appropriate for the improved or redesigned process, establish time frames for completion, use QI improvement tools and methods, and work with leadership to allocate resources for project completion.

QSC encourages staff-driven improvement ideas and allows improvement initiatives to be tested and implemented without formal involvement of the QSC. The QSC is available to provide guidance and support and actively engages in helping to prioritize initiatives if and when intervention is needed. However, to effectively manage organizational resources and keep communication flowing, management staff regularly shares improvement project ideas, project updates, and new project information with their peers, with leadership, and among staff. All managers are encouraged to document their improvement initiatives so they can be tracked and accounted for.

7.3 Prioritizing Improvement Opportunities

BCHS uses a prioritization and selection process for potential Big QI improvement projects. Prioritization sharpens organizational focus and is used to ensure availability of resources for the improvement. A Performance Improvement Priority Matrix (Appendix B) is used to guide prioritization of organization-wide opportunities for improvement, and as necessary to decide where to allocate resources where there are competing demands for limited resources. The priority matrix can also be used as a tool for ranking improvement efforts identified through trend analysis of incident, grievance, and satisfaction reports.

Improvement initiatives are prioritized based on several factors including:

- Impact on client-centered values (safety, care, access, outcomes, satisfaction)
- Impact on health equity
- Alignment with the mission, values and vision of BCHS, BCHD and CHC
- Scope and extent of the process in question
- High risk, problem prone outcomes or process, or one where variation has historically been a problem
- Extent to which the improvement is a requirement of regulatory or oversight bodies
- Availability of resources (data, time, staff, money, skill, etc.)

7.4 Project initiation

Senior leadership leads the way for “Big QI” projects by endorsing and supporting the initiatives, articulating how the initiatives align with organizational values, allocating resources, and removing barriers as needed. The project lead and team are encouraged to develop a Project Charter that includes the following.

- Identify the project vision and objectives
- Define the complete scope of the project
- List all of the critical project deliverables
- State the customers and project stakeholders
- List the key roles and their responsibilities
- Create an organizational structure for the project
- Document the overall implementation plan
- List any risks, issues and assumptions

“Little qi” projects can be initiated by any staff member with the approval of their supervisor. Staff is encouraged to document improvement projects on a PDSA worksheet available on the Bentranet. PDSA worksheets can be provided on an informational basis to the QSC, in order to develop awareness of various work groups operating within the organization and to identify the potential of coordinating similar efforts across work units. The QSC may initiate formation of a “little qi” project to fill an identified need or strategic initiative. If there is a question as to whether a work group should be chartered as an organization level group, the issue should be brought to the QSC for a decision.

8 Reporting, monitoring and sharing

BCHS is committed to transparency and using data to measure and monitor the quality of outcomes, processes and capacities. Capacity for collecting, validating, reporting, interpreting and using data for improvement is under development.

Incidents and client concerns are monitored on a daily basis and reported on a quarterly basis to the Quality Steering Committee (QSC). Issues that need immediate attention are addressed immediately; in addition, trends are monitored and shared with staff on an as needed basis.

Performance indicators selected to measure performance of small tests of change are reported and monitored by quality improvement teams with a frequency relevant to the test and determined by the improvement team. Program-level and team-level goals that feed into accomplishing “Big QI” goals are monitored at the program- or team-level. Reporting and monitoring will be shared with the QSC at its quarterly meeting.

Indicators selected to track broad “Big QI” initiatives are reported and monitored by improvement teams, operational leadership teams, relevant staff meetings, with advisory groups and boards, and with the Quality Steering Committee (QSC). Progress is reported to and monitored by the QSC on a quarterly and annual basis.

Results of process improvement initiatives will be communicated as appropriate throughout the organization in an effort to share ideas, gain a better understanding of relevant processes, encourage collaboration, instill concepts of continuous improvement into the organizational culture, and to stimulate creative and innovative improvement initiatives.

As BCHS deepens its capacity to collect, validate and report data and increases acceptance of the value of data for shining a light on improvement opportunities and successes, the process of reporting, monitoring and sharing will become more robust. This will include development of a quality dashboard that includes a comprehensive set of measures or indicators tied to client and organizational performance requirements.

9 Quality Improvement Model: PDSA and DMAIC

There are several accepted methodologies for making improvement outcome, process and/or capacity improvements. Using a methodology ensures consistency in approach and that critical steps are not missed. No one method is best for everyone or all situations. Two models used most commonly by Benton County Health are PDSA and Six Sigma DMAIC.

The “Plan / Do / Study / Act” (PDSA) Improvement Model, recognized by the Institute of Medicine, Institute of Healthcare Improvement and other governing and advisory organizations, is utilized in performance improvement activities. This methodology produces specific, identifiable improvements and provides for:

- rapid cycle improvement
- in small steps
- and allows for measurement “as you go”.

The methodology addresses three fundamental questions:

- What are you trying to accomplish?
- How will you know a change is an improvement?
- What changes will likely lead to an improvement?

The steps outlined in this methodology are:

<u>Plan</u>	<ul style="list-style-type: none"> ▪ Identify a process to improve ▪ Organize to improve it ▪ Clarify current knowledge ▪ Understand variation ▪ Select an improvement
<u>Do</u>	<ul style="list-style-type: none"> ▪ Pilot the improvement
<u>Study</u>	<ul style="list-style-type: none"> ▪ Evaluate the pilot
<u>Act</u>	<ul style="list-style-type: none"> ▪ Standardize the improvement ▪ Start over

Within PDSA, the Six Sigma DMAIC model is used to further guide improvement efforts; the model guides the process through five phases:

- **Define:** Develop a clear project charter that identifies processes to be improved that are relevant to customer needs and that will provide significant benefits to the hospital.
- **Measure:** Determine the baseline and target performance of the process, define key input and output variables and validate the measurement system.
- **Analyze:** Use data to find the root cause of the problem; to understand and quantify their effect on process performance.
- **Improve:** Identify process improvements to optimize process outputs and reduce variation.
- **Control:** Document, monitor and assign accountability for sustaining gains made by the process improvements.

Additional Lean tools may be used to drive out waste, improve quality, reduce cost and eliminate variation.¹⁵

10 Governance, Structure, Roles and Responsibilities

Everyone has a role in BCHS's performance management and quality improvement efforts.

BCHS recognizes the interest of and valuable contribution of its stakeholders in performance and quality improvement planning, as well as ongoing implementation of those plans. The structure used to support quality improvement reflects BCHS' commitment to engaging our clients, staff and community partners in continuous improvement and a collaborative, systems approach to quality.

- The Community Health Center of Benton and Linn Counties Board of Directors and Benton County Board of Commissioners have oversight responsibility and authority for the QA/QI activities for the Community Health Center and Health Department, respectively.
- The directors of Benton County Health (BCHD) and the Community Health Centers (CHC) have charged all staff with the responsibility to engage in actions that contribute to a culture of quality.
- The Quality Steering Committee (QSC) sets the strategic direction for high-level (Big QI) quality activities at BCHS. The QSC provides guidance and oversight for carrying out the purpose and scope of the quality improvement framework and annual plan.
- Management Team members are responsible for supporting QI efforts and for promoting, training, challenging and empowering BCHS employees to participate in the practices and processes of QI.
- Members of BCHD and CHC advisory groups/boards are involved with QI planning processes by reviewing plans, suggesting additions and/or improvements to the plan, and approving the annual QI Plan. They receive periodic updates on QI performance, plans and activities and are invited to provide feedback. CHC Board receives quarterly progress reports on the strategic plan as well as QI updates at least two times a year.
- Clients and community partners may be involved during the assessment process through meetings, surveys, key informant interviews, focus groups, email and/or social media. Their input is integrated into planning.

10.1 Oversight Roles and Responsibilities

CHC Board of Directors and BC Board of Commissioners have oversight responsibility and authority for the QA/QI activities for the Community Health Center and Public Health Department, respectively. As such, they:

- review a summary of performance improvement activities and outcomes on an annual basis
- provide feedback and suggestions on the needs of the community
- approve allocation of resources when appropriate to implement needed system changes to achieve the highest possible outcomes
- approve and participate in implementation of key governance processes that are the most important to the safety and excellence in health outcomes of the people we serve
- assure that there is adequate opportunity for input by community members served by the two Departments

Quality Steering Committee members are responsible for helping to create a quality improvement culture. In this culture, employees use quality improvement principles and tools in their day-to-day work, with support and guidance from leadership. Members of the QSC are not directly responsible for managing project activities, but provide guidance and oversight for those who do. This includes:

- encouraging quality improvement at all levels in the organization and showing genuine interest in improvement initiatives
- actively supporting collaboration among and across departments
- recommending program and process improvements
- serving as executive sponsors for improvement projects
- encouraging use and adoption of data-driven performance measures
- analyzing measured outcomes and making evidence-based recognitions and recommendations
- responding to specific requests for QSC assistance
- identifying and reviewing implementation issues
- helping balance conflicting priorities and resources
- encouraging and facilitating investment in development of quality improvement capability and capacity
- recognizing and celebrating both individual and team accomplishments
- conducting a quarterly quality performance review and preparing an annual report

In addition to QI activities, the QSC oversees systematic monitoring and evaluation of programs and services to assure compliance with requirements of federal, state, grantors, and accrediting agencies with regard to quality. The QSC may delegate day-to-day responsibility for QA activities but ultimately is accountable for:

- reporting, tracking, monitoring and investigating incidents (see policy on “Incident Response and Reporting”)
- responding to complaints and grievances
- assuring staff are credentialed
- conducting clinical record reviews

Health Department advisory committees and the Health Center governing board serve as extensions of the QSC, providing a richer representation of the community in providing guidance for QI activities.

10.2 Leadership and Staff Roles and Responsibilities

Quality improvement is the responsibility of all staff. One of BCHS' organizational aims is to identify, develop and include position-specific competencies in job descriptions and performance evaluations. The roles and responsibilities described below will guide development of position-specific competencies.

All Staff

1. Apply QI principles and tools to daily work.
2. Participate in QI project work as assigned or agreed upon by supervisor.
3. Develop an understanding of basic QI principles & tools through QI orientation and training.
4. With program manager, identify program areas for improvement and suggest improvement actions to address identified projects; evaluate project ideas using established criteria including alignment with organizational goals and project prioritization methods.
5. Identify QI training needs and coordinate training through supervisor.

Program Managers/Management Staff

1. Develop and document improvement strategies that address the initiatives identified in the annual QI plan (Big QI); test improvement strategies; collect, analyze and review performance data results for the initiatives; implement and spread changes.
2. Lead change with respective program teams and encourage appropriate use and application of QI tools and methods.
3. Monitor and report progress on Big QI projects.
4. Coordinate with Improvement Manager to identify projects or processes to improve and assist with development of QI project proposal.
5. Develop and document program-specific improvement plans to comply with OARs, accreditation requirements, and all other regulatory and/or compliance requirements.
6. Document QI activities and efforts.
7. Identify staff training needs, participation in QI training, and competency with identified QI competencies. Identify staff for quality advisor team and/or advance QI training opportunities.
8. Apply QI principles and tools to daily work.

Health Systems Improvement Manager

1. Lead, coordinate, support, and guide organization-level quality improvement.
2. Lead development of an annual QI Plan with input from senior leadership, managers, and staff; advisory groups/boards; and community improvement planning partners.
3. Assist program managers with program-level improvement planning.
4. Collaborate with appropriate leadership to integrate QI principles into policies/protocols (e.g. job descriptions/competencies, performance review, training; policy, procedure, and process development).
5. Provide technical assistance to QI projects at all staff levels of BCHS.
6. Encourage documentation of QI activities and projects (aim, objectives, measures, planning/implementation, and QI project results).
7. Identify continuing education resources.
8. Provide quarterly written updates on core projects to Quality Steering Committee.

9. Serve in an advisory capacity in addressing problems encountered by QI project teams and QI advisors/team leads.
10. Identify and promote strategies to develop “culture of QI” (e.g., change management, creativity theory).
11. Apply QI principles and tools to daily work.

Quality Improvement Advisors (Q-Team)

1. Provide QI expertise and guidance for QI project teams.
2. Provide QI training to new and existing staff.
3. Assist program managers in development of program level QI activities.
4. Advocate for QI and encourage a culture of learning and QI among staff.
5. Apply QI principles and tools to daily work.

Leadership Staff

1. Provide leadership for organizational vision, mission, strategic plan and direction related to performance improvement and quality improvement efforts.
2. Facilitate involvement of key stakeholders in PI/QI activities including management- and staff-level employees; advisory groups and board members; and community partners.
3. Promote a learning environment and be a champion for QI among staff, clients/patients, advisory groups/board members, and community partners.
4. Assure all staff has access to resources to carry out QI projects and training.
5. Apply QI principles and tools to daily work.

10.3 Membership of the Quality Steering Committee

The Quality Steering Committee is composed of eight permanent members and two non-permanent members; non-permanent members are appointed by the executive directors. Non-permanent members serve two-year terms and have demonstrated ability to identify, design, measure and implement service delivery and organizational changes and/or have expertise or proven interest in quality improvement activities.

Permanent staff:

- Medical Director, Community Health Centers
- Medical Director, Specialty Mental Health Clinic
- Deputy Director, Public and Environmental Health ?????
- Deputy Director, Clinical Operations
- Executive Director, Community Health Centers
- Executive Director, Health Department
- Chief Financial Officer, Health Services
- Health Systems Improvement Manager, Health Services

Advisory group participation:

- Members of the CHC board and advisory groups are encouraged to attend QSC meetings.
- Quarterly reports of the QSC are provided to advisory boards; advisory boards are expected to review the quarterly report and acknowledge their review by providing their feedback to the QSC.

11 Performance Management and Quality Improvement Training

Training is essential to developing and maintaining a culture of quality. The goal of training is long-term adoption and integration of performance management and quality improvement into day-to-day work.

Orientation to PM and QI will be developed for new employees. The goal of orientation is to (a) communicate the organizational commitment to PM/QI, (b) introduce some key concepts and terminology, (c) describe Big QI and little qi in the BCHS context, and (d) identify next steps and resources for more involvement with QI.

Training opportunities are offered to staff and management in a variety of formats and on a variety of PM/QI topics including meeting facilitation, performance management, quality improvement tools and methods (e.g. PDSA, Lean/DMAIC, rapid cycle improvement, model for improvement), using data for improvement, and change management. Guiding principles for training include (a) using just-in-time instruction to bridge didactic with engaged learning and spreading and (b) transfer of training as a way to spread and effectively apply new knowledge. Training methods include self-study, instructor-led training using internal and external instructors, online training, workshops/conferences, coaching, and project-focused/hands-on training.

Training needs will be solicited from managers and staff by the systems improvement manager. Training will be developed or training sources identified to meet organizational needs.

Intermediate- and advanced-level training will be offered to interested staff and particularly to Q-Team members to develop their skills to lead other staff in QI efforts. Training will include both conceptual and experiential learning. Additionally, boards and advisory group members will be introduced to PM/QI principles as needed.

12 Change Management

Understanding and managing change are essential to effectively building a culture of quality. “In order for a quality improvement process to bring about real, sustainable business improvements, it is imperative that managers at all levels of the organization have the ability and willingness to deal with the tough issues associated with implementing major change. They must be capable of guiding their organization safely through the change process.”¹⁶ BCHS is committed to understand and manage change using proven change management principles. Peter Senge’s concepts of a learning organization and John Kotter’s change model are used as guiding principles for staff as they lead change.

John Kotter’s change model takes both head and heart into consideration. “The core of the matter is always about changing the behavior of people, and behavior change happens in highly successful situations, mostly by speaking to people's feelings. This is true even in organizations that are very focused on analysis and quantitative measurement.”¹⁷ [Kotter’s eight-step change model](#) is summarized below with additional explanation available online.

1. **Increase urgency** – Help others see the need for change; make objectives real and relevant.
2. **Build the guiding team** - Get the right people in place with the right emotional commitment, and the right mix of skills and levels.
3. **Get the vision right** – Create a vision and strategy to help direct the change effort; focus on emotional and creative aspects necessary to drive service and efficiency.
4. **Communicate for buy-in** – Make sure as many as possible understand and accept the vision and the strategy.
5. **Empower action** - Remove obstacles, enable constructive feedback and lots of support from leaders - reward and recognize progress and achievements.
6. **Create short-term wins** - Set aims that are easy to achieve - in bite-size chunks. Follow through with those achievements. Finish current stages before starting new ones.
7. **Never let up** - Foster and encourage determination and persistence - ongoing change - encourage ongoing progress reporting - highlight achieved and future milestones.
8. **Make change stick** – Articulate the connections between the new behaviors and organizational success, and develop the means to ensure leadership development and succession. Weave change into culture.

13 Record Keeping and Confidentiality

Meeting Minutes: The QSC will document business conducted at meetings. Standing Sub-Committees are required to document business conducted at meetings. Time-limited, ad-hoc workgroups or other sub-committees will document business as requested.

Confidentiality: Any client specific information generated by the Quality Steering Committee may be shared in accordance with HIPPA regulations. Violation of this confidentiality may result in disciplinary action if it involves staff, and/or removal from participation in the Quality Management Committee or sub-committee.

Appendix A: A note about innovation

In addition to improvement ideas, innovation is encouraged and fostered at BCHS. “A corporate culture dominated by Six Sigma management theory will be primarily inclined toward inwardly focused, continuous improvement types of innovation activity – process, customer service, systems, operations, and so on. The objective is small, incremental innovations that add up. A culture that fosters disruptive innovation is going to be more entrepreneurial, more outwardly focused on new markets, technologies, and business models. The objective is to find big new growth platforms that add significant chunks of revenue and profit. The obvious conclusion for many organizations is, ‘We need both!’”¹⁸

Appendix B: Performance Improvement Priority Matrix

This tool is used by the Quality Steering Committee to prioritize organization-wide improvement initiatives and as necessary to decide where to allocate resources when there are competing demands for limited resources.

	3 - Strong impact	2 - Some impact	1 - Weak Impact	0 - No Impact						
Opportunity for Improvement	Legal – Regulatory– Compliance	High Volume	High Risk / Safety / Liability	Problem Prone	Effect on Cost or Staff Time	Impact on Clinical Outcomes	Impact on Population Health	Organization Mission / Strategic Plan	Patient Satisfaction	Total Score
Implement Electronic Health Record (EHR)	3	3	2	1	1	2	2	3	2	19

Appendix C: Big QI, Little qi, and Individual qi

From “The Continuum of Quality Improvement in Public Health” by John W. Moran, Grace Duffy, Kim McCoy and Bill Riley.

Table 2: Macro, Meso, Micro, and Individual Mapped to Big, Little and Individual QI					
Topic	Big ‘QI’—Organization-Wide		Little ‘qi’—Program/Unit		Individual ‘qi’
Improvement	System Focus		Specific Project Focus		Daily Work Level Focus
Quality Improvement Planning	Tied to the Strategic Plan		Program/Unit Level		Tied to Yearly Individual Performance
Evaluation of Quality Processes	Responsiveness to a Community Need		Performance of a Process Over Time		Performance of Daily Work
Quality Improvement Goals	Cut Across All Programs and Activities		Delivery of a Service		Daily Work
	Strategic Plan		Individual Program/Unit Level Plans		Individual Performance Plans
System Level →	Macro	Meso	Micro	Individual	
Quality Tools →	Advanced	QFD/Lean Six Sigma		Basic	

Appendix D: Quality Improvement Activity Calendar

Function	Responsible Staff	Frequency	Date
Quality Steering Committee Meetings	Health Systems Improvement Manager	quarterly	July, October, January, April
Incident and Client Concern Reporting	Health Systems Improvement Manager	quarterly	July, October, January, April
Client Experience	Health Systems Improvement Manager	quarterly	July, October, January, April
Staff Engagement	Health Systems Improvement Manager	quarterly	July, October, January, April
QI Planning, Next Fiscal Year	Management Team and QI Advisors Quality Steering Committee		February/March April
QI Plan Approval for Next Fiscal Year	Quality Steering Committee	annually	June
	CHC Board	annually	January
QI Plan Endorsement for Next Fiscal Year	PHP Advisory Committee	annually	February
	MHADD Advisory Committee	annually	March
QI Plan Review, Past Year and Intro for Next Year	Board of Commissioners	annually	September
QI Plan, Performance Review of Current Initiatives	Quality Steering Committee	quarterly	October, January, April, July
	CHC Board	semi-annually	October, April
	PHP Advisory Committee	semi-annually	October, April
	MHADD Advisory Committee	semi-annually	October, April
	Board of Commissioners	annually	September
External Audits			
HRSA Five-Year Review	Community Health Centers	every 5 years	last review, 2011
NCQA Accreditation Review	Community Health Centers	tbd	
PH Triennial Review	Public Health	every 3 years	last review, 2012
MH Triennial Review	Mental Health	every 3 years	last review, 2011
PH Accreditation Site Visit	Public Health	every 5 years	anticipated 2014
CCO Audit/Review	All	tbd	

Endnotes

¹ See Appendix C “The Continuum of Quality Improvement in Public Health” by John W. Moran, Grace Duffy, Kim McCoy and Bill Riley, *The Quality Management Forum*, American Society for Quality, Winter 2010, vol 35, no. 4, www.asq-qm.org, pp. 1, 3-9.

²Based on: National Research Council. E. B. Perrin, J. S. Durch, and S. M. Skillman, eds., *Health Performance Measurement in the Public Sector: Principles and Policies*

³ Based on: National Research Council. E. B. Perrin, J. S. Durch, and S. M. Skillman, eds., *Health Performance Measurement in the Public Sector: Principles and Policies*

⁴ Based on: National Research Council. E. B. Perrin, J. S. Durch, and S. M. Skillman, eds., *Health Performance Measurement in the Public Sector: Principles and Policies*

⁵ Embracing Quality in Local Public Health, Michigan’s QI Guidebook

⁶ PHAB Acronyms and Glossary of Terms, 2009

⁷ PHAB Acronyms and Glossary of Terms, 2009

⁸ PHAB Acronyms and Glossary of Terms, 2009

⁹ The Public Health QI Handbook, Bialek, et al

¹⁰ PHAB Acronyms and Glossary of Terms, 2009

¹¹ The Turning Point Performance Management model xyz, Malcolm Baldrige Framework

¹² The National Partnership for Reinventing Government. *Serving the American Public: Best Practices in Performance Measurement. Benchmarking Study Report.* (Washington, D.C.: Government Printing Office, 1997.)

¹³ Virginia Department of Planning and Budget. Planning and Evaluation Section. *Virginia’s Handbook on Planning & Performance* (Richmond: 1998).

¹⁴http://www.phf.org/resourcestools/Documents/Turning_Point_Performance_Management_Framework_2012_Refresh_Changes.pdf

¹⁵Identify and Eliminate Waste:

1. Overproduction (creating reports no one reads)
2. Waiting (waiting while phone call is in a queue, waiting for signatures)
3. Motion (searching for scanned documents/medication)
4. Transport
5. Over processing (ordering more lab tests than what is required)
6. Inventory (excessive office supplies, medication in excess of usage)
7. Errors (redraws, wrong patient, medication errors)

5S

1. Sorting (when in doubt move it out)
2. Set – items in order (a place for everything and everything in its place)
3. Shine (clean is lean)
4. Standardize (reduce variation through standardization)
5. Sustain through education and communication
- 6.

¹⁶ H. James Harrington, “Organizational Change Management: The Driver Of Quality”, *Harrington-institute, Inc.*, p. 2.

¹⁷ John Kotter, “The Head and the Heart”, *Kotter International*.

¹⁸ “Debate: Six Sigma vs. Innovation” by Jeneanne Rae, *Business Week*, February 27, 2007.



Integrated Model of Care Matrix

Level of Care	Primary Care Medically Based Service Episodic Service as needed	Mild Mental Health Behaviorist 1-3 Sessions	Moderate Mental Health Brief Therapy 1-6 sessions	Serious Mental Health Outpatient Bi-Annual Review	Severe Mental Health Specialty Services Bi-Annual & Annual Review
Outcomes Measures		<ul style="list-style-type: none"> • Resolution or reduction in distress/somatic sx's levels as evidenced by self report • Improvement in level of functioning • R/O of mental health Dx • Mental health DX is not primary focus of services • Development of wellness plan • Identification of necessary supports to maintain improvement • Reduced score PHQ 9, PhQ 15, GAD7, etc • Continue with episodic primary care services 	<ul style="list-style-type: none"> • Reduction in the level of reported distress • Overall improvement in level of functioning • Reduced impairment in social and occupational settings • Improved relationships • Demonstrated increase in coping skills associated with management of mental health sx's • Development of wellness/relapse prevention plan • Increased contact with necessary supports to maintain improvement • Reduced scores on PhQ9, GAD, PhQ15, AUDIT etc. • Reduced scores on PSS • Transition to episodic primary care services 	<ul style="list-style-type: none"> • Reduction in the level of reported distress • Overall improvement in level of functioning • Demonstrated increase in coping skills associated with management of mental health sx's • Development of wellness/relapse prevention plan • Efforts to obtain employment • Avoidance of homelessness and/or housing stability • Identification of necessary supports to maintain improvement • Reduced scores on PhQ9, GAD7, PhQ15, AUDIT etc. • Reduced scores on PSS • Transition to primary care services for continuing medication management 	<ul style="list-style-type: none"> • Reduction in service need/ level of reported distress • Overall improvement in level of functioning • Demonstrated increase in coping skills associated with management of mental health sx's • Demonstrated increase in day to day functionality • Development of wellness/relapse recovery/ prevention plan • Avoidance of homelessness and/or housing stability • Identification of necessary supports to maintain improvement • Reduced scores on PhQ9, GAD7, PhQ15, AUDIT etc. • Reduced scores on PSS • Reduction of ACT Services but continued intensive Services or • Transition to Standard Outpatient Services

Addictions and Mental Health Division
January 21, 2014

Biennial Implementation Plan Amendment Template

CMHP: Benton County
 Program: Crisis Expansion

Budget Item	Jan. 1, 2014 – Jun. 30, 2014	July 1, 2014 – Jun. 30, 2015
Personnel <i>(including FTEs, Classification of staff and associated costs)</i>	QMHA=\$39,983.50 QMHP=\$45,048.50	QMHA=\$79,967.00 QMHP=\$90,097.00
Travel=Mileage	\$678.00	\$1356.00
Equipment= Cell phones and laptops	\$1356.00	\$2712.00
Supplies/flex fund	\$2065.75	\$4131.50
Consultants/Contracts/training	\$250.00	\$500.00
Other Costs: (please list)	In direct Administration costs= \$59,700.48 On Call after hours Stipend =\$39,975.00	Indirect Administration costs= \$29,850.00 On Call After Hours Stipend=\$79,950.00
Totals	\$189,051.00	\$288,552.00
Overall Project Cost		\$477,603.00
Revenue Identify expected revenues; i.e., Medicaid	<ul style="list-style-type: none"> • Oregon Health Plan - \$179,178.00 • MHS20 -\$84,001.00 • MHS 25-\$68,544.00 	

billing/encounters)	<ul style="list-style-type: none"> • MHS 24-\$73,326.00 Medicaid Billing; 	
Number of individuals Intended to be Served	360	720

**Budget Narrative: Expanded Mobile Crisis Grant Benton County
January 1, 2014 – June 30, 2015**

1. Salaries and Wages:

a. Community Crisis Liaisons (QMHP's): (1.0 FTE, To Be Hired)

i. Annual Salary: \$54,933.00 (Benton only)

- First 6 months at Step 1 –\$25.77/hour: \$53,598.00
- Second 6 months at Step 2 - \$27.05/hour: \$56,268.00.00

ii. Job Description: Community Crisis Liaisons will work collaboratively with Law Enforcement and social service agencies by responding directly to community requests for mobile crisis services. The Community Crisis Liaison will focus on anticipating and reduce crises events by providing brief interventions, screenings and evaluations, and follow up case management to community members in need of crisis services.

2. Fringe Benefits: [Calculated at 64% of annual salary]

a. Community Crisis Liaison (QMHP's): (2.0 FTE, To Be Hired)

i. Annual Fringe: \$35,153.86

- First 6 months at Step 1-\$16.49/hour; \$34,302.00
- Second 6 months at Step 2-\$17.31/hour; \$36,005.00

3. On Call After Hours Stipend (Total: \$159,900.00) (Annual amount to be divided equally between Linn and Benton)

a. Community Crisis Liaisons (QMHP's): Additional Stipend Compensation

b. Stipend amount is the payment method that pays voluntary daytime staff members that work overnight as on call workers. It is in excess of annual salary and includes the following payment rates:

- On Call Weekdays: \$64.00/day-Benton
- On Call Weekends: \$107.00/day-Benton
- Face to Face Contact: \$107.00/per contact-Benton

ii. Job Description: This stipend payment applies to Community Crisis Liaisons providing services as described above and work over night and receive compensation based variably on whether they:

- Carry the pager and get no request for crisis services on the weekday
- Carry the pager and get no request for crisis services on the weekend
- Carry the pager and get a request for crisis services on the weekday

- Carry the pager and get a request for crisis services on the weekend.

4. Salaries and Wages:

a. Community Crisis Case Managers (QMHA's): (1.0 FTE, To Be Hired)

i. Annual Salary: \$48,755.50

- First 6 months at Step 1- \$22.87/hour: \$47,570.00
- Second 6 months at Step 2 - \$24.01/hour: \$47,941.00

ii. Job Description: The Community Crisis Case Manager (QMHA) will work in conjunction with the Community Crisis Liaison to ensure there is robust outreach, follow up and case management services provided to individuals in crisis or transitioning from crisis to other types of services. Case management services will include ensuring access to benefits, enrollment in mental health services, access to housing, employment and/or respite services, as well as referral and linkage with already existing providers, resources and other community options.

5. Fringe Benefits:[Calculated at 64% of annual salary]

a. Community Crisis Case Manager (QMHA's): (1.0 FTE, To Be Hired)

i. Annual Fringe: \$31,210.50

- First 6 months at Step 1-\$14.64/hour; \$30,451.00
- Second 6 months at Step 2-\$15.37/hour; \$31,970.00

6. Travel (Total: \$1,356.00 annually)

a. In-region travel for community crisis and case management services: \$1,356.00.

(4,800 miles annually at .565/mile)

- This represents a hundred mile a month increase per county per month. (100 miles x 2 counties = 200 miles)
- This monthly increase annually becomes 2,400 additional miles per county and subsequently 4,800 additional miles for the region annually.

b. Justification: With the increase in access to crisis services being made available to the general region it is expected that there will be an increased need for mobile response into the community requiring a concomitant need for increased mileage reimbursement to staff.

7. Trainings and Meetings (Total: \$500 annually)

a. Crisis training for new crisis staff (\$250 per training/per person)

i. Crisis work requires specific skills such as the ability to deescalate client behavior, provide rapid diagnosis, risk assessment and mental status conditions. In additions workers require knowledge of a variety of therapeutic interventions such as Acceptance and Commitment Therapy, Brief Crisis Resolution and the CASSII. Training will be essential for new staff members.

8. Equipment and Supplies (Total: \$2,712.00 annually)

a. Cell phones (Total: \$1,248.00) Fourth phone free with contract

- Cost/month: \$52.00 (per person)
- Cost/annually: \$624.00 (per person)

b. Laptops (Total: \$1,464.00)

- i. Cost/month: \$61.00 2 G bandwidth capacity (per person)
- ii. Cost/annually: \$732.00 (per person)

9. Flex Fund-Supplies (Total: \$4,132.00 annually)

- a. Supplies may include bus tickets, medication, clothing and other items that will assist them to provide outreach services and to establish rapport with individuals that are somewhat resistive to engagement in services.

10. Total Direct Expenses: \$258,702.00 (annually)

11. Total Indirect Expenses: \$59,700.00 (one time only)

- a. indirect expenses have been calculated at 12% of Direct Expenses (\$517,405.00)

Total Funds Requested: \$577,105 (18 months)

*Note: Protocall Crisis Phone Service is a contractual requirement of IHN-CCO and will be provided as an in-kind resource to support crisis services by the CCO.

Timeline for Program Implementation

January/February 2014

- Notify HR of Grant Award
- Complete position establishment request template for BOC
- Post Positions
- Identify office space for new hires and work with LE regarding work stations
- Identify Cost Center, revenue and expenditure categories

March 2014

- Conduct interviews
- Hire staff
- Schedule Supervision
- Purchase equipment (laptops, phones)
- Begin to develop contracts with Linn County
- Consult County Counsel on upcoming and developing contracts

April 2014

- Complete contract modifications
- Begin working with contract department to adapt/modify forms
- Complete adaptation of forms for program
- Develop/modify process for funds distribution
- Execute contracts between Linn and Benton
- 1st quarter reports to state

May 2014

- Schedule meetings with Community partners (LE, shelters, schools) to discuss grant and begin collaborative process
- Establish inter-county protocols
- Produce first quarterly general ledger report
- Evaluate Progress and processes up to the current point
- Establish process for cross county use of crisis/respice beds

June 2014

- Develop data collection, tracking and reporting processes
- Evaluate Progress and processes up to the current point
- Establish process for cross county use of crisis/respice beds

July 2014

- Develop protocols to serve clients not enrolled in mental health services
- Develop protocols for community to access mobile crisis staff
- Develop protocols for safety of mobile crisis staff
- Meet with county ACT teams and begin to develop program interface processes
- Distribute crisis cards to community partners (LE, schools, shelters)

August 2014

- Crisis line information published in 211 system
- Crisis line (Protocall) to be systematic with Linn/Benton Co
- Secure email between counties be established (CareAccord)
- Continue collaboration with law enforcement
- Set up scheduled ride-alongs, trainings, meetings
- Finalize protocols for accessing crisis mobile teams and safe response
- Finalize screening/assessment forms

September 2014

- Continue to refine processes
- Evaluate intended and unintended outcomes
- Continue to focus on collaborative processes with community
- Continue to evaluate
- Continue to refine

October 2014

- Submit 2nd quarter report
- Continue to refine data collection and reporting processes
- Provide training as needed

November 2014

- Survey partners to determine level of satisfaction
- adjust processes as needed

December 2014

- Continue to improve relations and collaborations with community partners
- Continue to improve data collections processes
- 3rd Quarter reports

Addictions and Mental Health Division
January 21, 2014

Biennial Implementation Plan Amendment Template

CMHP: Benton County

Program: Rental Assistance Program

Budget Item	Jan. 1, 2014 – Jun. 30, 2014	July 1, 2014 – Jun. 30, 2015
Personnel <i>(including FTEs, Classification of staff and associated costs)</i>	1.0 FTE Res Spec. =\$80,000; 1.0 FTE Peer Specialist =\$42,000	1.0 Res. Spec=\$120,000; 1.0 FTE Peer Specialist=\$63,000
Rental Assistance/direct Assistance	\$180,000	\$270,000
Move In Assistance	\$30,000	\$45,000
Supplies		
Consultants/Contracts		
Other Costs: (please list)	Administrative Fee=\$49,800	Administrative Fee=\$74,700
Totals	\$381,800	\$572,700
Overall Project Cost		
Revenue Identify expected revenues; i.e., Medicaid billing/encounters)	30% of income from residents, Medicaid billing and 1915i	
Number of individuals Intended to be Served	12	30

Budget Narrative:

- Please provide a description of the program and any unusual expenditures
- Please provide an implementation timeline for this program.

Rental Assistance Program Benton County January 1, 2014 – June 30, 2015

1. Salaries and Wages:

a. Housing Specialist (QMHA): (1.0 FTE, To Be Hired)

i. Annual Salary @ 1.0 FTE : \$48,755.50

- First 6 months at Step 1- \$22.87/hour: \$47,570.00
- Second 6 months at Step 2 - \$24.01/hour: \$47,941.00

- ii. Job Description:** The Housing Specialist will work with community providers at the Homeless Drop-In Center, at the Adult Services team meeting and other locations to identify and screen individuals that meet criteria for services from the Rental Assistance Program. Services will also include housing searches, application support, and a variety of skills training services activities to ensure individuals in the program have a successful experience as renters. Other case management services will include ensuring access to benefits, enrollment in mental health services as needed, advocacy with landlords, access to housing, employment and/or respite services, as well as referral and linkage with already existing providers, resources and other community options.

2. Fringe

a. Housing Specialist (QMHA): (1.0 FTE, To Be Hired)

i. Annual Fringe @1.0 FTE: \$31,210.50

- First 6 months at Step 1-\$30,451
- Second 6 months at Step 2-\$31,970

3. Salary and Wages:

a. Housing Peer Specialist (Peer Specialist): (1.0 FTE To Be Hired)

i. Annual Salary @ 1.0 FTE: \$34,794.00

- First 6 months at Step 1-\$16.36 /hour; \$34,032.00
- Second 6 months at Step 2-\$17.09/hour; \$35,556.00

- ii. Job Description:** The Housing Peer Specialist will work in tandem with the Housing Specialist QMHA. The Peer Specialist will be situated at the Drop-In Center primarily with the intent that this person will become familiar with those individuals that would benefit from housing but are entirely disengaged from the mental health system. The role of the peer is to share life experiences and support individuals by providing a positive role model as a person in recovery. Peers can also assist with housing search, application completion, advocacy and a host of other services. For some individuals the peer will likely be the primary point of contact.

4. Fringe

a. Housing Peer Specialist (Peer Specialist): (1.0 FTE To Be Hired)

- i. Annual Fringe @ 1.0 FTE: \$22,268.13
 - First 6 month Step at \$21,780.42
 - Second 6 month Step at \$22,755.84

5. Direct Housing Assistance: (30 slots @ \$500 per person for 18 months)

a. Total Rental Assistance amount is \$270,000.00

- i. **Explanation:** The rental assistance program has as its goal assisting individuals to remain stable and in their homes. If individuals are successful renters that they will be in their homes for the entire 18 month period of the grant, thus the formula of 18 slots @ \$500 per person for 18 months is the result of this rational.

6. Move-in Assistance: (30 slots @ \$1,000 per person over 18 months)

a. Total Move in assistance amount is \$30,000.00

- i. **Explanation:** The amount of move in assistance is determined by the number of persons being served with funding from this program. It will not exceed 18 and it is expected that individuals will be in their homes the entire 18 months.

5. Total Indirect Expense over 18 months: \$74,700.00

Indirect expenses have been calculated at 15% of Direct Expenses (\$498,000.00)

Total Funds Requested: \$572,700.00 (18 months)

Timeline

January 2014

- Notify HR of Grant Award
- Complete position establishment request template for BOC
- Identify office space for new hires
- Notify Community partners of award status

February 2014

- Begin working with contract department to adapt/modify forms
- Work with County compliance officer to ensure county forms are appropriate for Rental Assistance Program
- Consult County Counsel on upcoming and developing contracts
- Identify Cost Center, revenue and expenditure categories
- Post Positions

March 2014

- Begin to develop contracts with partner counties
- Complete adaptation of forms for program

- Systematize process for establishing contracts with landlords
- Execute contracts with Linn and Lincoln
- Establish inter-county protocols
- Develop data collection, tracking and reporting processes
- Develop/modify process for funds distribution
- Interview staff

April 2014

- Hire Staff
- Develop referral forms to be used by community partners
- Schedule meetings with community partners
- Train partners
- Develop protocols to serve clients not enrolled in mental health services
- Meet with county ACT teams and begin to develop program interface processes
- Establish protocols for interface with AMHI funding
- Systematize step down process with hospital liaison and ENCC
- Systematize process for step down from residential treatment levels of care

May 2014

- Develop and train on entrance and exit inspection check list
- Modify rent calculation sheet
- Develop scope of work for new positions and train staff
- Schedule supervision for staff
- Begin collaborative process with community partners to identify and screen potential program participants
- Establish a location and schedule for attendance at community sites for county staff to engage with potential applicants

June 2014

- As needed begin housing search
- As needed begin conducting regular visits and providing skills trainings to clients
- Sign clients up for HUD as needed
- Reach out to the community rental associations and develop rental resources
- Develop Flex Fund loan repayment process and incentive standards for loan forgiveness
- Develop standards and protocols for systematic rental assistance program documentation

- Identify and publish resource list for staff and clients in program

July 2014

- Develop curriculum for two groups
 - “Looking for a home”
 - “Being Successful in the Community”
- Begin providing support for Lincoln by assisting in Start-up of Lincoln program
- Produce first quarterly general ledger report
- Report to state as needed
- Evaluate Progress and processes up to the current point
- Establish Interface with supported employment program, including referral etc
- Establish “Looking for a home” group
- Establish timeline for transfer responsibility for Lincoln program the Lincoln County

August 2014

- Continue to refine processes
- Add 1915i services option as a resource
- Continue to enroll clients
- Establish “Begin Successful in the Community” group
- Fill at least 10 rental slots

September 2014

- Complete program transfer to Lincoln County
- Proceed with hiring protocol for Lincoln County
- Share working documents with Lincoln County

October 2014

- Continue to evaluate
- Continue to refine
- Report to state as needed
- Enroll more people

November 2014

- Enroll more people
- Continue to focus on support employment program
- Fill at least 20 slots
- Submit 4th quarter report
- Identify process to manager flex slots
- Continue to refine data collection and reporting processes

December 2014

- Continue to support Lincoln as needed
- Evaluate progress and adjust processes as needed
- Continue to encourage employment as an option
- Work with those individuals who now have HUD vouchers to achieve independent housing as needed
- Increase focus on supporting more independence for RAP participants

Addictions and Mental Health Division
January 21, 2014

Biennial Implementation Plan Amendment Template

CMHP: Benton County

Program: Crisis Expansion

Budget Item	Jan. 1, 2014 – Jun. 30, 2014	July 1, 2014 – Jun. 30, 2015
Personnel <i>(including FTEs, Classification of staff and associated costs)</i>	QMHA=\$39,983.50 QMHP=\$45,048.50	QMHA=\$79,967.00 QMHP=\$90,097.00
Travel=Mileage	\$678.00	\$1356.00
Equipment= Cell phones and laptops	\$1356.00	\$2712.00
Supplies/flex fund	\$2065.75	\$4131.50
Consultants/Contracts/training	\$250.00	\$500.00
Other Costs: (please list)	In direct Administration costs= \$59,700.48 On Call after hours Stipend =\$39,975.00	Indirect Administration costs= \$29,850.00 On Call After Hours Stipend=\$79,950.00
Totals	\$189,051.00	\$288,552.00
Overall Project Cost		\$477,603.00
Revenue Identify expected revenues; i.e., Medicaid	<ul style="list-style-type: none"> • Oregon Health Plan - \$179,178.00 • MHS20 -\$84,001.00 • MHS 25-\$68,544.00 	

billing/encounters)	<ul style="list-style-type: none"> • MHS 24-\$73,326.00 Medicaid Billing; 	
Number of individuals Intended to be Served	360	720

**Budget Narrative: Expanded Mobile Crisis Grant Benton County
January 1, 2014 – June 30, 2015**

1. Salaries and Wages:

a. **Community Crisis Liaisons (QMHP's)**: (1.0 FTE, To Be Hired)

i. **Annual Salary: \$54,933.00 (Benton only)**

- First 6 months at Step 1 –\$25.77/hour: \$53,598.00
- Second 6 months at Step 2 - \$27.05/hour: \$56,268.00.00

ii. **Job Description:** Community Crisis Liaisons will work collaboratively with Law Enforcement and social service agencies by responding directly to community requests for mobile crisis services. The Community Crisis Liaison will focus on anticipating and reduce crises events by providing brief interventions, screenings and evaluations, and follow up case management to community members in need of crisis services.

2. Fringe Benefits: [Calculated at 64% of annual salary]

a. **Community Crisis Liaison (QMHP's)**: (2.0 FTE, To Be Hired)

i. **Annual Fringe: \$35,153.86**

- First 6 months at Step 1-\$16.49/hour; \$34,302.00
- Second 6 months at Step 2-\$17.31/hour; \$36,005.00

3. On Call After Hours Stipend (Total: \$159,900.00) (Annual amount to be divided equally between Linn and Benton)

a. **Community Crisis Liaisons (QMHP's)**: Additional Stipend Compensation

b. **Stipend amount is the payment method that pays voluntary daytime staff members that work overnight as on call workers. It is in excess of annual salary and includes the following payment rates:**

- **On Call Weekdays:** \$64.00/day-Benton
- **On Call Weekends:** \$107.00/day-Benton
- **Face to Face Contact:** \$107.00/per contact-Benton

ii. **Job Description:** This stipend payment applies to Community Crisis Liaisons providing services as described above and work over night and receive compensation based variably on whether they:

- Carry the pager and get no request for crisis services on the weekday
- Carry the pager and get no request for crisis services on the weekend
- Carry the pager and get a request for crisis services on the weekday

- Carry the pager and get a request for crisis services on the weekend.

4. Salaries and Wages:

a. Community Crisis Case Managers (QMHA's): (1.0 FTE, To Be Hired)

i. Annual Salary: \$48,755.50

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ii. Job Description: The Community Crisis Case Manager (QMHA) will work in conjunction with the Community Crisis Liaison to ensure there is robust outreach, follow up and case management services provided to individuals in crisis or transitioning from crisis to other types of services. Case management services will include ensuring access to benefits, enrollment in mental health services, access to housing, employment and/or respite services, as well as referral and linkage with already existing providers, resources and other community options.

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6. Travel (Total: \$1,356.00 annually)

a. In-region travel for community crisis and case management services: \$1,356.00.
(4,800 miles annually at .565/mile)

- i.** This represents a hundred mile a month increase per county per month. (100 miles x 2 counties = 200 miles)
- ii.** This monthly increase annually becomes 2,400 additional miles per county and subsequently 4,800 additional miles for the region annually.

b. Justification: With the increase in access to crisis services being made available to the general region it is expected that there will be an increased need for mobile response into the community requiring a concomitant need for increased mileage reimbursement to staff.

7. Trainings and Meetings (Total: \$500 annually)

a. Crisis training for new crisis staff (\$250 per training/per person)

- i.** Crisis work requires specific skills such as the ability to deescalate client behavior, provide rapid diagnosis, risk assessment and mental status conditions. In additions workers require knowledge of a variety of therapeutic interventions such as Acceptance and Commitment Therapy, Brief Crisis Resolution and the CASSII. Training will be essential for new staff members.

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a. Cell phones (Total: \$1,248.00) Fourth phone free with contract

- i.** Cost/month: \$52.00 (per person)
- ii.** Cost/annually: \$624.00 (per person)

b. Laptops (Total: \$1,464.00)

- i. Cost/month: \$61.00 2 G bandwidth capacity (per person)
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9. Flex Fund-Supplies (Total: \$4,132.00 annually)

- a. Supplies may include bus tickets, medication, clothing and other items that will assist them to provide outreach services and to establish rapport with individuals that are somewhat resistive to engagement in services.

10. Total Direct Expenses: \$258,702.00 (annually)

11. Total Indirect Expenses: \$59,700.00 (one time only)

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Total Funds Requested: \$577,105 (18 months)

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- Establish inter-county protocols
- Produce first quarterly general ledger report
- Evaluate Progress and processes up to the current point
- Establish process for cross county use of crisis/respice beds

June 2014

- Develop data collection, tracking and reporting processes
- Evaluate Progress and processes up to the current point
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- Develop protocols to serve clients not enrolled in mental health services
- Develop protocols for community to access mobile crisis staff
- Develop protocols for safety of mobile crisis staff
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- Distribute crisis cards to community partners (LE, schools, shelters)

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- Crisis line information published in 211 system
- Crisis line (Protocall) to be systematic with Linn/Benton Co
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- Finalize protocols for accessing crisis mobile teams and safe response
- Finalize screening/assessment forms

September 2014

- Continue to refine processes
- Evaluate intended and unintended outcomes
- Continue to focus on collaborative processes with community
- Continue to evaluate
- Continue to refine

October 2014

- Submit 2nd quarter report
- Continue to refine data collection and reporting processes
- Provide training as needed

November 2014

- Survey partners to determine level of satisfaction
- adjust processes as needed

December 2014

- Continue to improve relations and collaborations with community partners
- Continue to improve data collections processes
- 3rd Quarter reports