

Oregon Healthcare Workforce Committee

AGENDA – November 4, 2015, 9:30 am – 12:30 pm
Wilsonville Training Center, Wilsonville, OR 97070
29353 SW Town Center Loop, E Room 111/112

Meeting Objective: Be up-to-date on changes within OHA and begin planning the work of the Committee for the next two years, to facilitate meaningful and positive change for Oregon’s healthcare workforce.

#	Time	Agenda Item	Presenter(s)	Action Item
1	9:30 – 9:40 (10')	Welcome, Introductions	David Pollack	
2	9:40 – 9:45 (5')	Approval: September 2nd meeting summary	David Pollack	X
3	9:45 – 10:05 (20')	Updates <ul style="list-style-type: none"> • OHPB updates • OHA updates • Other updates 	Carla McKelvey, OHPB Stephanie Jarem, OHA Marc Overbeck, OHA Members	
4	10:05 – 11:15 (70')	Committee Deliverables: Behavioral Health - Behavioral Health Integration - Behavioral Health Mapping	E. Dawn Creach, Children’s Health Alliance Mike Morris, OHA	X
5	11:15 – 11:25 (10')	Break	All	
6	11:25 – 11:55 (30')	Committee Deliverable: Provider Incentives	Marc Overbeck, OHA Oliver Droppers, OHA	
7	11:55 – 12:15 (20')	Committee Deliverable: Ongoing Workforce Capacity Reports	Marc Overbeck, OHA	
8	12:15 – 12:30 (15')	Public Comment	Any	
9	12:30	Adjourn: Next meeting Jan 6, 2016	David Pollack	

Meeting Materials

1. Agenda
2. Sept 2, 2015 meeting summary
3. Children’s Health Alliance presentation
4. Behavioral Health Workforce Profile (from July HCWF meeting)
5. HB 3396 presentation
6. Provider Demand Report
7. Ethnic Profiles Report

Oregon Healthcare Workforce Committee
September 2, 2015 from 9:30-12:30
At Wilsonville Training Center
DRAFT - Meeting Summary

Committee Members in Attendance:	Patrick Brunett Jeff Clark Jeff Papke Robyn Dreibelbis (By Phone)	David Nardone (By Phone) David Pollack Daniel Saucy Lita Colligan
Committee Members not in Attendance:	None	
Prospective Committee Members (subject to approval by Oregon Health Policy Board)	Annette Fletcher Troy Larkin	Janus Maybee Art Witkowski
OHA staff, OHWI, OCN	Stephanie Jarem Marc Overbeck Margie Fernando Oliver Droppers Suzanne Yusem	Jo Isgrigg, OHWI Jana Bitton, OCN
Others	Carla McKelvey, Oregon Health Policy Board member liaison, (By Phone) Margaret ?	

1	Welcome
	David Pollack, Chair, welcomed everyone to the committee, including members, prospective members, and the public.
2	Approval: July 22, 2015 meeting summary
	The meeting summary from July was approved, with the correction that Annette Fletcher should have been listed as a “pending” committee member rather than a committee member because her appointment has not been approved by the Health Policy Board. Maria Lynn from OIT’s name was misspelled and corrected.
	<i>Action Steps:</i> <ul style="list-style-type: none"> • <i>Margie will edit, finalize and file the summary.</i>
3	Updates
	Stephanie Jarem thanked Cathryn Cushing for her excellent work with this committee over the past year. She has accepted another position and has left the OHA. Her new position is as the lead staff for the GME Consortium, so she may periodically be returning to this

committee or collaborating with us on relevant issues. Stephanie and Marc Overbeck will be taking over the staffing of this committee. Stephanie's role will be mainly the liaison with the Oregon Health Policy Board, while Marc will take over the actual staffing of the committee. Margie Fernando will be the committee support person. Oliver Droppers will also be assisting this committee, focusing particularly on the deliverables for House Bill 3396.

The OHPB would like all committees to fill out a proposed membership composition to help them to determine the demographic composition of each committee based on gender, race, ethnicity and disability.

David would like suggestions and input from members on adding more members. Discussion on new membership included more rural representation, a payer member and representation from higher education. The question of a public member or representative from a consumer advocate group was also brought up.

It was noted that the Committee could also have "ad-hoc" members with whom to consult with on specific topics in order to achieve the deliverables the Committee is tasked with.

Stephanie updated the committee on the latest organizational chart of the OHA. The chart is a work in progress that reflects the change in leadership at the state. There are now 7 divisions under Lynne Saxton, the new OHA Director, as shown on the chart. To address the questions asked by the committee, staff will bring back answers regarding:

- *Whether Addictions and Mental Health commissioner appointees have been identified since this is a Federal requirement*
- *Whether monitoring Safety Net Clinics comes under Public Health and, if so, where does it reside?*
- *More clarification on the current portfolio under Oregon State Hospital and how coordination with the community and residential service system will be managed.*

Stephanie will bring more information once we get more updates on this transition process. The HCWF committee current roster in the web will eventually be updated to include the new committee members.

Marc thanked Jo Isgrigg and Suzanne Yusem for completing the 2014 Oregon Health Profession Profiles report which has been published and is now available on the website. Jo Isgrigg added that with Senate Bill 230, the mandatory reporting of licensing boards will increase from 7 to 17 boards, so this report will incorporate these in the future.

Carla McKelvey, Oregon Health Policy Board liaison, reported that at the OHPB meeting on Sept 1, 2015, the Board approved a new Charter for the Healthcare Workforce Committee (included in the packet). Additionally the Board would like to see:

	<ul style="list-style-type: none"> • An updated committee roster at their next meeting, and expressed a desire for more membership from the arena of higher education • Carla noted that the Board also discussed advancement in health care careers, and whether there were guidelines to look at barriers to having the right workforce in the right areas. <p>Relational Map of Workforce Groups</p> <p>Jo Isgrigg presented the relational map, and David explained the map to the committee for the newer members. David noted that the map ought to serve as a reminder to this committee of the affiliation with the larger world. He suggested it would be helpful to attach the map to the Charter and that he would be happy to explain this map to the Board at their next meeting as a guide.</p> <p><i>Jo Isgrigg will refine the map with the changes discussed.</i></p> <p>Patrick updated the committee on the Oregon Graduate Medical Education Consortium. Cathryn Cushing is heading up this consortium. The next step is the creation of separate 501C3 as they are currently operating under AHEC. This will allow them to establish a separate identity. They are having a legislative briefing with Senator Elizabeth Steiner Hayward on September 9, 2015. She is one of the advocates for this consortium. Patrick Brunett and Robyn Dreibelbis from this committee are participating in the consortium. They will bring updates to this group regularly.</p> <p>For prospective members, Patrick explained that this consortium was set up to find ways to increase access to care, with the objective of getting professionals to stay in the locations. They have an initial grant from MODA Health to get this started.</p>
4	<p>Committee Charter, HCWC Deliverables</p>
	<p>David explained there are three sets of deliverable in the new charter:</p> <ul style="list-style-type: none"> • Maintaining and reporting on existing reports generated by this committee. David indicated he plans to talk with Leslie Clement on how important it is that OHWI remains a part of this effort. • The report and recommendations on the provider incentive programs required in HB 3396. • Behavioral Health primary care integration initiative and Behavioral Health Mapping. <p>Marc specified that the two ongoing deliverables under “reports” are the projection of needed providers and the profile on the ethnic and language diversity of the health care workforce; the previous versions of these are available online.</p>

David encouraged members to identify, which, if any of the deliverables, they would like to engage with as Committee members. David also extended the invitation to the public listening that they are invited to join if they would like to contribute their expertise. This committee will play an important role in making sure that the deliverables are met, either directly, or is an advisory capacity, or, decide if it should be contracted out.

HB3396—Provider Incentives Reform

As a background Marc and David explained this bill rose out of the work that this committee initiated in earlier years by looking at the varied provider incentive programs. HB3396 was approved to take a closer look at these programs to ensure that tax dollars are spent and it also extends the sunset on existing rural health care provider tax credits for two years and makes minor adjustments to the law concerning who may receive credits. Additionally it establishes the Health Care Provider Incentives Fund, with an allocation of \$180,000 towards its implementation.

Marc briefly reviewed the timeline required to get a final report to the Legislation by September 2016.

Marc will provide a further analysis of the breakdown of the different incentive programs to the committee. Oliver thanked Marc for putting together all the federal and state programs and work plan for the legislature and the board to show the effectiveness of these incentive programs.

*Once again, David would like members and prospective members who wish to participate in this **Provider Incentives Subcommittee** to let Marc know.*

Marc will put together a further breakdown of dollars and FTEs for each of the incentive programs.

Behavioral Health Deliverables

Steph and Marc are joining forces with additional policy analysts from the OHA Policy team and others to work on the report and recommendations for the integration of team based care. They are in the planning stages of how this work will be done. As noted in the charter, there are three pieces to this work:

- Bringing successful behavioral health integration pilots statewide. OHP staff have been working with the OHA Transformation Center to identify these pilots
- Addressing any gaps in education and curriculum, what are the best practices, looking at different models across the state on how others improve their team based care
- Policy changes needed to overcome barriers to behavioral and physical health. The OHPB wants to know how they can move forward to push legislation through to make this effective.

	<p>This report is due to the Legislature on July 2016.</p> <p>David added that there are initiatives around the state like the Primary Care Home Initiative headed by Nicole Merrithew and Pam Martin’s work that would be especially useful when thinking about integration. Also including a psychologist, social worker or others from similar disciplines would be a benefit to have on this sub-committee.</p> <p>Additionally, the Charter mentions a Behavioral Health Workforce Profile, which is already completed (and reviewed by the Committee at its July meeting).</p> <p>David reported that there is a Medicare Physician Fee Schedule Proposed Rule that has been posted for comments. The request refers to care models that would require alternative payment methods for behavioral health providers, especially those who provide consultation to other providers rather than direct patient care.</p> <p>David provided information on the 2015 Collaborative Family Healthcare Association conference that is being held in Portland from October 15-17, 2015. He encouraged members of the committee to attend if they can.</p>
5	Presentation and Discussion: Behavioral Health Pilots in Lane County
	<p>Dr Lynnea Lindsey-Pengelly, PhD, MSCP, Medical Services Director of Trillium Behavioral Health, gave a presentation on Behavioral Health Pilots in Lane County, and took questions from the Committee and staff.</p>
6	Public Comment
	<p>Maria Lynn Kessler from Oregon Institute of Technology expressed the need for payment reform in relation to Autism.</p>
7	Next Meeting
	<p>The next meeting of the Health Care Workforce Committee will be November 4, 2015 from 9:30 – 12:30.</p>

Integrated Health Care for Children & Families: Current Challenges and Opportunities



CHILDREN'S HEALTH *alliance*
CHILDREN'S HEALTH *foundation*

Health Care Workforce Committee
November 4, 2015

Introducing CHA and CHF

Who we are:

An alliance of 100+ private pediatricians in Oregon and Washington

Our goal:

Lead clinical improvement innovations and deliver the highest quality of care to children and their families

CHILDREN'S HEALTH *alliance*



CHILDREN'S HEALTH *foundation*

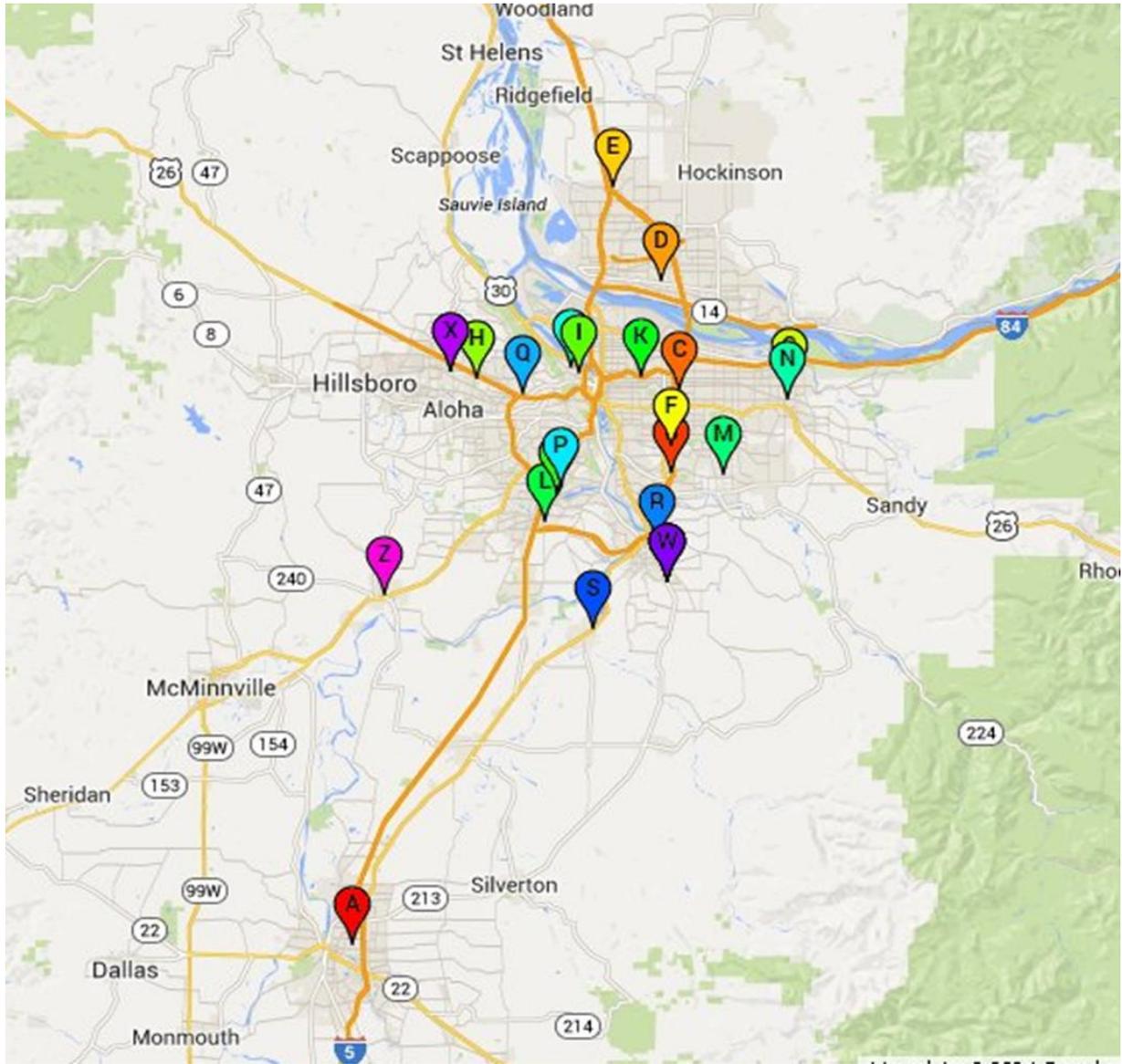
The Alliance and the Foundation work together to:

- Develop and implement transformational quality improvement programs
- Drive quality care delivery, care experience and cost management
- Offer clinical and strategic expertise about meaningful pediatric measures and actionable workflow solutions



CHA Pediatric Practice Sites

- Childhood Health Associates of Salem
- Clackamas Pediatric Clinic
- East Portland Pediatric Clinic
- Evergreen Pediatric Clinic - Main Office
- Evergreen Pediatric Clinic - Salmon Creek Office
- Metropolitan Pediatrics LLC- Happy Valley
- Metropolitan Pediatrics LLC- Gresham Office
- Metropolitan Pediatrics LLC- Westside Office
- Metropolitan Pediatrics LLC- Portland Office
- Olson Pediatric Clinic
- Oregon Pediatrics - Portland Office
- Oregon Pediatrics - Meridian Park Office
- Oregon Pediatrics - Happy Valley Office
- Pediatric Associates of Gresham P.C.
- Pediatric Associates Of The Northwest - Portland Office
- Pediatric Associates of the Northwest - Lake Oswego Office
- Sunset Pediatrics
- Willamette Falls Pediatric Group - Oregon City Office
- Willamette Falls Pediatric Group - Canby Office
- Ronald Clarke, MD
- Jo Anne Nielsen, MD
- James Resk, MD
- Troy Stoeber, MD
- Jack Rosenberg, MD
- Sandra Vilhauer, MD
- Kenneth Whittaker, MD



What do we mean by “behavioral health?”

An Umbrella Term that Encompasses:

- Mental health & substance abuse disorders
 - e.g., anxiety, depression, substance abuse, psychotic disorders, eating disorders, etc.
- Developmental disorders/disabilities
 - e.g., autism, ADHD, learning disabilities, developmental delay, communication & motor disorders, etc.
- Psychological well-being and behaviors
 - e.g., stress, substance use, prevention, habits, functioning, nutrition, exercise, relationships & attachment, resiliency, problem-solving, family factors, Adverse Childhood Experiences/trauma, etc.

What is Integrated Health Care?

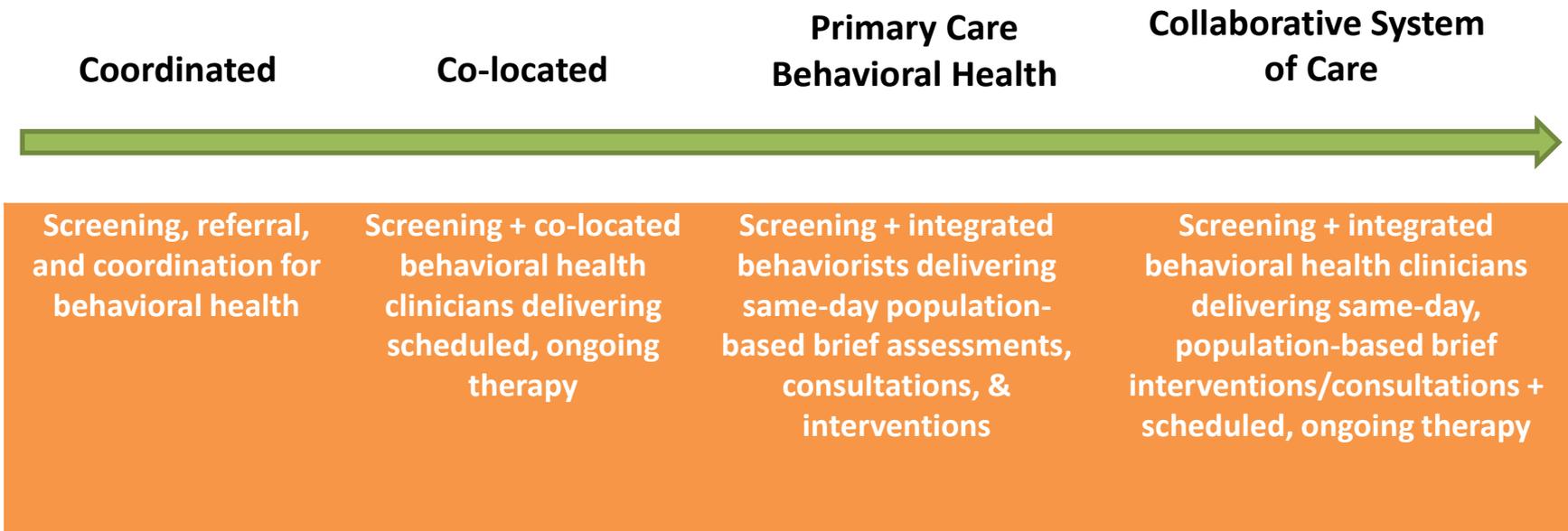
From SB832, As defined in amended ORS 414.025:

Integrated health care means care provided to individuals and their families in a patient centered primary care home or behavioral health home by licensed primary care clinicians, behavioral health clinicians and other care team members, working together to address one or more of the following: (A) Mental illness (B) Substance use disorders (C) Health behaviors that contribute to chronic illness (D) Life stressors and crises (E) Developmental risks and conditions (F) Stress-related physical symptoms (G) Preventive care (H) Ineffective patterns of health care utilization.

Behavioral Health Clinicians

As defined in amended ORS 414.025: “Behavioral health clinician” means: (a) A licensed psychiatrist; (b) A licensed psychologist; (c) A certified nurse practitioner with a specialty in psychiatric mental health; (d) A licensed clinical social worker; (e) A licensed professional counselor or licensed marriage and family therapist; (f) A certified clinical social work associate; (g) An intern or resident who is working under a board-approved supervisory contract in a clinical mental health field; or (h) Any other clinician whose authorized scope of practice includes mental health diagnosis and treatment.

Spectrum of Integrated Health Care Models at Children's Health Alliance/Foundation Practices



14 of 22 (65%) practice sites currently have on-site behavioral health clinician(s)

89 of 108 (82%) pediatricians work at a practice with at least one behavioral health clinician

Primary Care Practice Strategies to Provide Integrated, Whole Person Care

- **Screening**, referral, & coordination (must-pass PCPCH requirement)
- **Co-located** mental health clinicians delivering traditional mental health therapy
- **Primary Care Behavioral Health** - behavioral health clinicians delivering integrated same-day, population-based brief assessments, consultations, & interventions
- **Collaborative system of care*** delivering both same-day, population-based brief interventions and scheduled, ongoing therapy

*Term used by Millbank Memorial Fund in *Evolving Models of Behavioral Health Integration in Primary Care*. Chris Collins, Denise Levis Hewson, Richard Munger, and Torlen Wade, 2010. <http://www.milbank.org/uploads/documents/10430EvolvingCare/EvolvingCare.pdf>

Pediatric Behavioral Health – Unique Needs

- Evidence and belief that children and families are better served in the medical home where there is less stigma and a more whole-person approach to care
 - The medical home is a trusted provider where a relationship has been developed over the years
- Focus on prevention and early intervention often before there is a diagnosis
- Lack of community behavioral health providers that specialize in pediatrics and/or accept insurance
- Lack of follow-through on referrals and communication barriers with outside BH providers
- Not financially sustainable to hire a behavioral health provider if only reimbursement is through Health & Behavior codes
(rates are too low & inconsistently reimbursed)

Pediatric Behavioral Health

- July 2015 JAMA Psychiatry – large prospective, longitudinal study looking at common childhood behavioral health issues & adult functional outcomes
- Adult outcomes = serious chronic physical illness, dropping out of high school, being incarcerated or having a felony charge, being unemployed, and having multiple psychiatric disorders
- Children w/ diagnosable mental health disorder - **6 times** more likely to have at least one adverse adult outcome and **9 times** more likely to have 2 or more adverse outcomes
- Children w/ BH issues that didn't meet threshold for MH diagnosis - **3 times** more likely to have an adverse adult outcome and **5 times** more likely to have 2 or more adverse outcomes

William E. Copeland, PhD; Dieter Wolke, PhD; Lilly Shanahan, PhD; E. Jane Costello, PhD. Adult Functional Outcomes of Common Childhood Psychiatric Problems: A Prospective, Longitudinal Study. JAMA Psychiatry. Published online July 15, 2015. doi:10.1001/jamapsychiatry.2015.0730

From: **Adult Functional Outcomes of Common Childhood Psychiatric Problems: A Prospective, Longitudinal Study**

JAMA Psychiatry. Published online July 15, 2015. doi:10.1001/jamapsychiatry.2015.0730

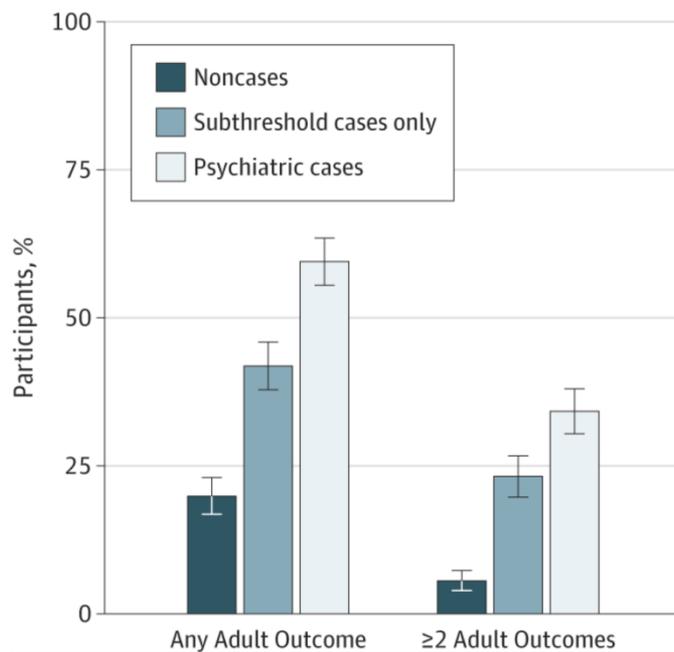


Figure Legend:

Associations Between Adult Outcomes and Childhood Diagnostic Groups The likelihood of having either any outcome or more than 1 outcome based on childhood psychiatric status. Error bars indicate standard error.

Barriers to Integrated Health Care

Top Challenges/Barriers Identified:

- Payment
- Credentialing/Contracting
- Behavioral Health Clinician Shortage
- Cultural & Practice Shift
- Mental Health/Physical Health Silos
- Physical Space at Primary Care Practices

A History of Separate and Parallel Systems

Medical Care

Mental Health Care

A forced (false) choice between:

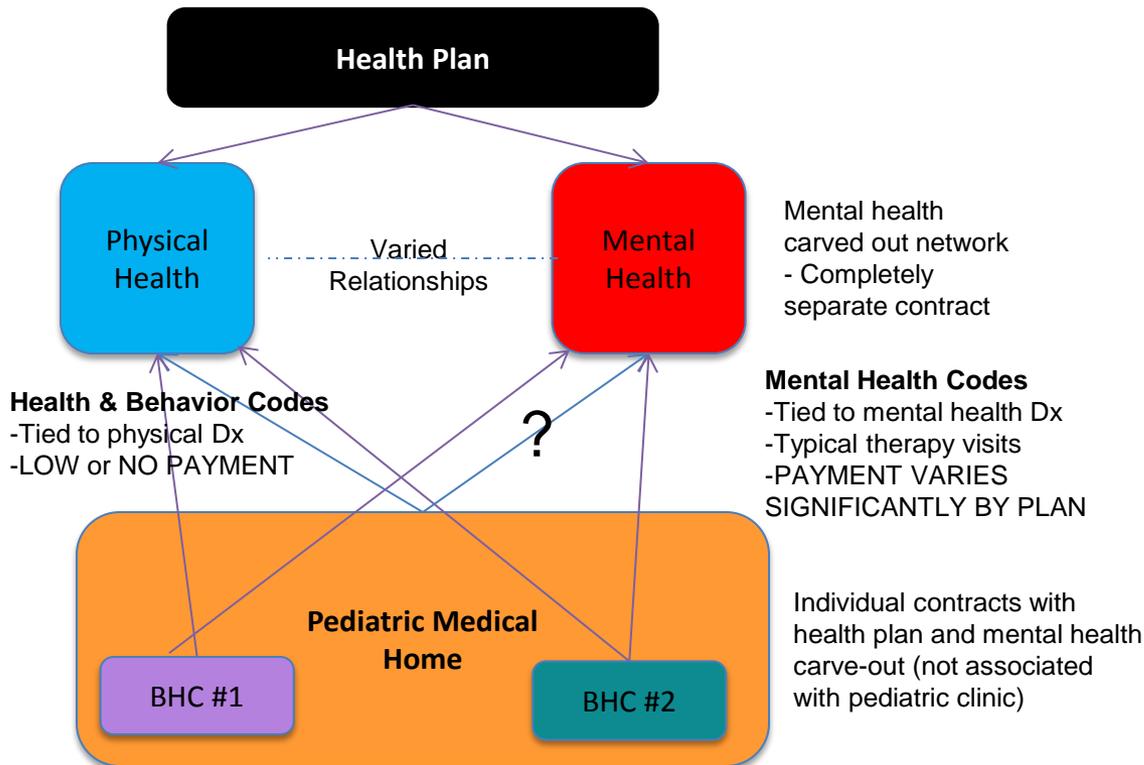
- 2 kinds of problems
- 2 kinds of clinicians
- 2 kinds of clinics
- 2 kinds of treatments
- 2 kinds of insurance

Original Source: CJ Peek 1996



Typical & Ideal Health Plan Structure

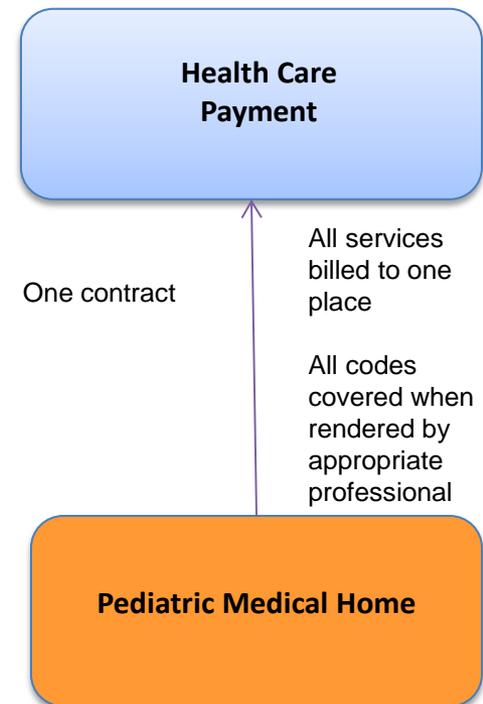
Typical Health Plan Structure*



Integrated Care:

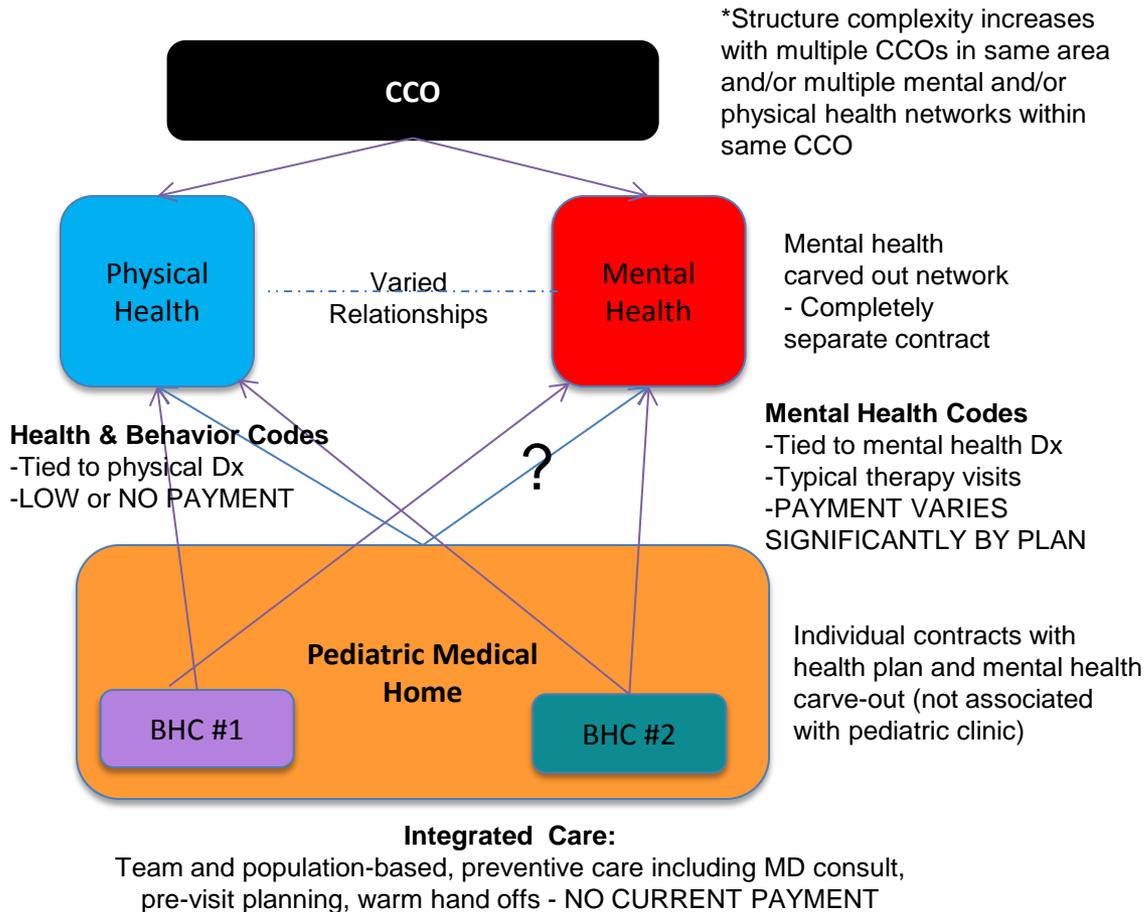
Team and population-based, preventive care including MD consult, pre-visit planning, warm hand offs - NO CURRENT PAYMENT

Ideal Health Plan Structure

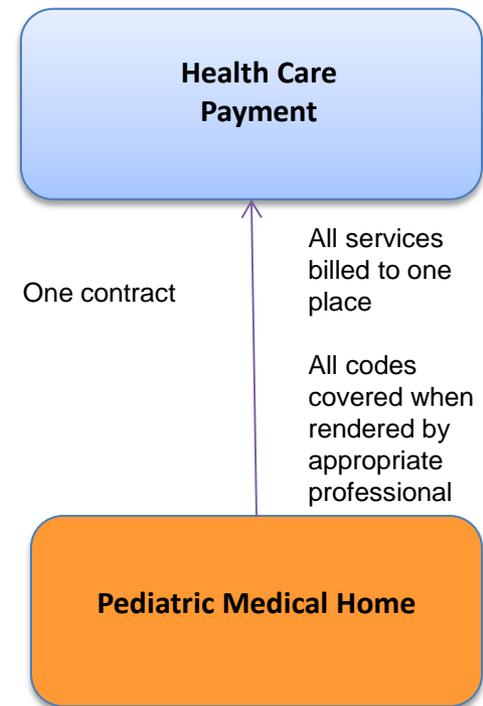


Typical & Ideal CCO Structure

Typical CCO Structure*



Ideal CCO Structure



Current FFS/Encounter-based Mechanisms for Integrated Health Care Payment

Health & Behavior Codes

- Requires a physical health diagnosis – does not allow for preventive BH care or those at risk, making it more difficult in pediatrics
- Many insurance plans do not reimburse at all
- For plans that do, reimbursement is very low
- BH clinician must be credentialed with the physical health side of each insurance plan

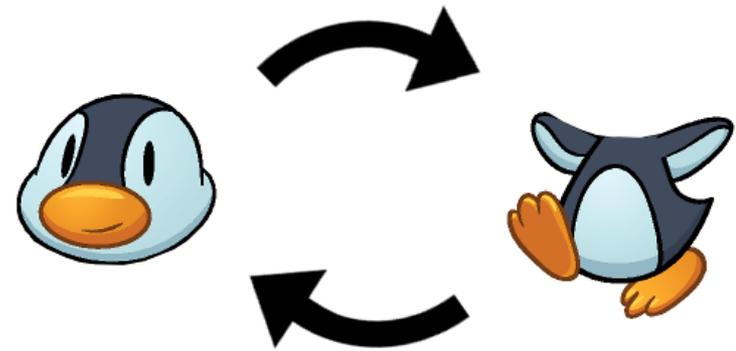
Mental Health Codes

- Requires mental health diagnosis - pediatric clinicians are reluctant to diagnose and label a child with a mental health disorder only so they can receive payment for providing care
- Cumbersome documentation requirements
- BH clinician must be credentialed with the mental health side of each insurance plan
- Plans often deny reimbursement if diagnosis was made prior to seeing a clinician at practice (e.g., ADHD)

Payment for Integrated Health Care



CHA/F Activities Supporting Integrated Health Care



- New Pediatric Integrated Care Collaborative launched in 2015 (Members only, but some sessions are open to broader community)
- **Convening multi-stakeholder pediatric Integrated Care Solutions Workgroup to address barriers**
- Community Education/Networking Forums – e.g., Linking Pediatric Primary Care & Behavioral Health and Improving Adolescent Health
- Targeting ACEs through Resiliency Initiative
- Sharing & developing resources, tools, current evidence and best practices, etc. for CHA/F website
- Collaboration & connecting with others working on integrated care
- Member of the Integrated Behavioral Health Alliance of Oregon
- Contracts with health plans, pilot projects (e.g. FamilyCare pilot), and writing grants

CHA-FamilyCare 2015 Pilot Project

Goals:

- Move toward population and evidence-based, brief approaches
- Help practices move from co-located BH to integrated part of primary care team
- Help support integrated services, prevention, and early intervention (not typically reimbursed under FFS):
 - Same-day consultations, brief assessments & interventions
 - Warm-hand offs
 - Pre-visit planning & team huddles
 - Consultations between primary care & behavioral health clinicians

CHA-FamilyCare Pilot Project

- 9 practice sites participating
- Measurement/accountability framework aligned with the Triple Aim
- “Outcomes” are very challenging
- Patient & family experience is important element of Triple Aim that is often overlooked

2014 CHA Patient Experience of Care Survey: CAHPS Clinician and Group with Patient-Centered Medical Home Items for Children (n = 4,471)

	CHA Integrated Care Practices	Comparison CHA Practices
Growth & Development Composite Domain	69%*	62%
Prevention & Safety Composite Domain	64%*	57%
Self-Management Support Composite Domain	36%*	32%
Individual Q: Spoke with anyone in provider's office about normal behaviors	82%*	75%
Individual Q: Spoke with anyone in provider's office about child's moods and emotions	67%*	59%
Individual Q: Spoke with anyone in provider's office about child's ability to get along with others	55%*	48%
Individual Q: Anyone at provider's office ask if there are things that make it hard for you to take care of your child's health	23%	21%
Individual Q: Spoke with anyone in provider's office about household problems affecting the child	45%*	41%
Individual Q: Anyone at provider's office talked about specific goals for your child's health	49%*	43%

* Difference between integrated and comparison practices is statistically significant at $p < .05$

Integrated Health Care Solutions Workgroup

- Convened monthly from January 2015 – present
- Wide array of expert child health stakeholders
- Developing an issue brief to provide a unified voice for changes that will support integrated health care at primary care practices throughout Oregon
- Focused on considerations for children & families
- Plan to finalize brief by early 2016

Organizations Represented on the Solutions Workgroup

Children's Health Alliance/ Children's Health Foundation (CHA/CHF)
Oregon Pediatric Society (OPS)
Oregon Pediatric Improvement Partnership (OPIP)
Oregon Academy of Family Physicians (OAFP)
Oregon Health Authority (OHA)
FACT Oregon - Family & Community Coming Together
Western Psychological Services
Integrated Behavioral Health Alliance of Oregon (IBHAO)
Oregon Council of Child & Adolescent Psychiatry (OCCAP)
NAMI Multnomah
Oregon Psychological Association (OPA) Healthcare Reform Task Force

Workforce Issues Identified by the Solutions Workgroup

- BH clinician shortage, especially those trained to care for unique needs of young children - insurance network barriers compound this issue
- Insurance Fragmentation & Excessive Administrative Burden - reports of ↑ community BHCs not accepting any insurance
- Need to move beyond professional training silos based on licensure towards team-based primary care training models
- Need workforce training strategies to address education systems as well as re-training current workforce
- Payment for BH services does not support competitive clinician salaries, leads to excessive turnover

Proposed solutions to come...

Thank You!



CHILDREN'S HEALTH *alliance*
CHILDREN'S HEALTH *foundation*

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Oregon’s Licensed Behavioral/Mental Health Care Workforce

A Profile of Selected Behavioral/Mental Health Occupations

An important goal of transforming health care includes improving access to and the integration of behavioral/mental health care services into primary care. As this work progresses, understanding the supply and composition of Oregon’s behavioral/mental health workforce is imperative.

There are a variety of professionals who engage in health promotion, prevention therapies, and treatment of behavioral/mental health issues.¹ Using the workforce data from the state’s *Licensed Health Professional Database*², this report focuses on those health providers with prescriptive authority (psychiatrists, advanced nurse practitioners and physician assistants with a practice specialty or setting in psychiatry/mental health) and those without prescriptive authority (registered nurses who practice in psychiatry/mental health settings, licensed clinical social workers, licensed professional counselors,

licensed marriage and family therapists, and licensed psychologists). Unfortunately, a significant amount of data were unavailable for Oregon’s licensed social workers, counselors and therapists, and psychologists, which limits the report’s findings (see the Data Sources and Methodology section for details).

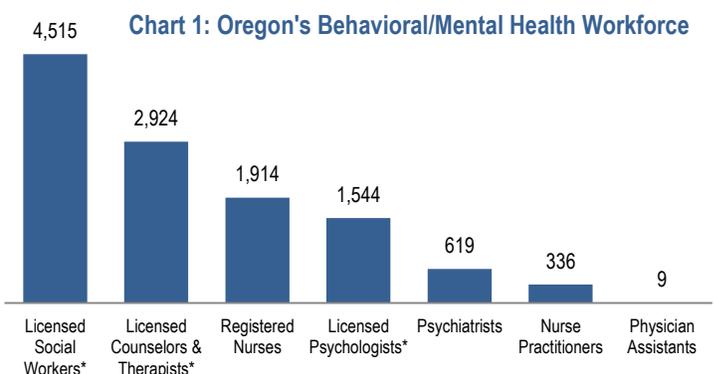
The providers profiled in this report are only a segment of the behavioral/mental health workforce. There are a number of health and social service providers for whom workforce data are not collected. These include, for example, Qualified Mental Health Associates, Qualified Mental Health Professionals, Certified Alcohol Drug Counselors, and peer counselors.^{3,4,5,6} It is also important to note that primary care clinicians who diagnose and treat behavioral and mental health disorders are not represented in this report.^{7,8}

Licensed Health Care Professionals Engaged in Behavioral/Mental Health

Behavioral and mental health services are provided by many different professions, each of which has its own training and area of expertise.⁹ Though all of these professionals play a role in assessment and treatment of behavioral health, there are a select number of providers who can also prescribe medications, including physicians, nurse practitioners, and physician assistants. In 2014, 6% of physicians (619) were psychiatrists, while 15% of all nurse practitioners (336) and 0.8% of physician assistants (9) indicated psychiatry or mental health as their practice specialty.

Six percent (1,914) of registered nurses identified a practice area in behavioral health care. There were

also 4,515 clinical social workers, 2,924 professional counselors and marriage and family therapists, and 1,544 psychologists licensed in Oregon; however, it is not known how many were practicing in the state.



*Results are based on available data and may not be generalized to the profession as a whole.

Geographic Distribution

More than half of the behavioral/mental health clinicians with prescriptive authority were located in the Portland Metro region in 2014 (see Table 1). This included 61% of psychiatrists and 57% of nurse practitioners. Similarly distributed, 49% of registered nurses who worked in psychiatry/mental health settings were located in the Portland Metro region.

This imbalance in regional distribution emphasizes

the need for integration of behavioral health services into primary care settings, especially in areas outside of the Portland Metro region.

Without the complete count of licensed counselors and therapists, social workers, and psychologists who actively practice in Oregon, it is impossible to accurately describe the geographic distribution of this segment of the behavioral/mental health workforce.

Table 1: Regional Distribution of Selected Behavioral/Mental Health Workforce in Oregon

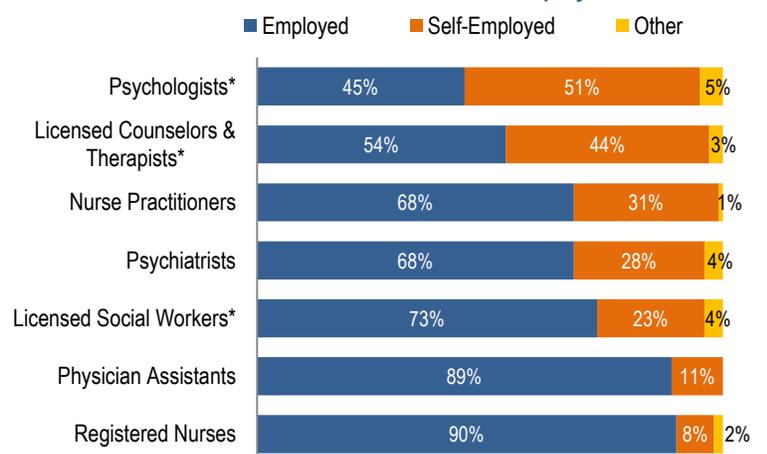
Oregon Region	Behavioral/Mental Health Clinicians with Prescriptive Authority			Registered Nurses	Total	% of Statewide Total in Region
	Psychiatrists	Nurse Practitioners	Physician Assistants			
Portland Metro (Clackamas, Multnomah, Washington)	376	190	2	929	1,497	52%
Northwest (Benton, Clatsop, Columbia, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill)	114	62	0	518	694	24%
Southwest (Coos, Curry, Douglas, Jackson, Josephine, Lane)	85	48	3	309	445	15%
Central (Crook, Deschutes, Gilliam, Hood River, Jefferson, Klamath, Lake, Sherman, Wasco, Wheeler)	35	23	1	88	147	5%
Eastern (Baker, Grant, Harney, Malheur, Morrow, Umatilla, Union, Wallowa)	9	13	3	66	91	3%
Missing	-	-	-	4	4	0.1%
Total	619	336	9	1,914	2,878	100%

Employment Characteristics

A large portion of behavioral/mental health providers were self-employed in 2014 (see Chart 2). Based on available information, the professions with the largest percentage of self-employed individuals were psychologists (51%) and licensed counselors and therapists (44%).

Behavioral health providers worked in a variety of care settings (see Table 2). Except for registered nurses, the most common setting for the majority of behavioral health care providers was an office or clinic. For registered nurses, the most common setting was a hospital, followed by an office/clinic setting.

Chart 2: Behavioral Health Workforce Employment Status



*Results are based on available data and may not be generalized to the profession as a whole.

Table 2: Top Three Work Settings by Behavioral Health Profession

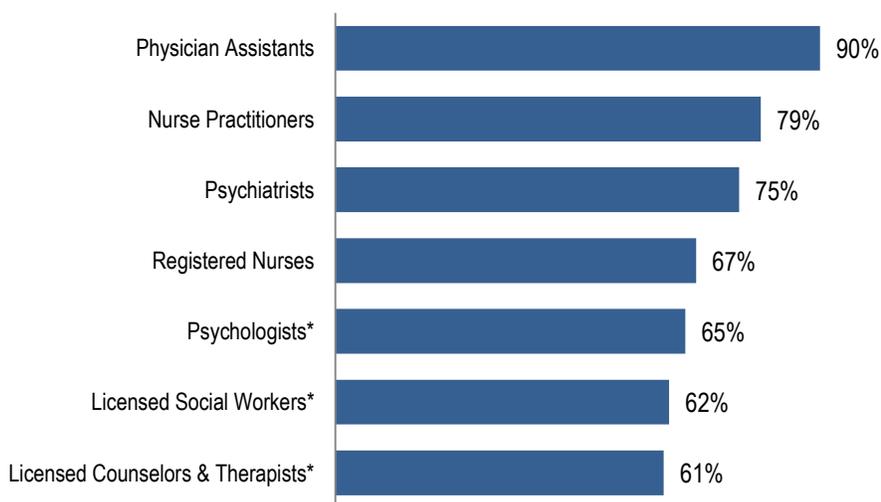
Profession	Percentage of Profiled Profession Working in Top Three Most Frequently Reported Work Settings					
	Office/Clinic		Private Practice		Hospitals	
Psychiatrists	35.1%	30.7%	25.5%			
Physician Assistants	55.6%	22.2%	22.2%			
Nurse Practitioners	53.9%	10.7%	8.9%			
Registered Nurses	43.4%	14.9%	5.5%			
Psychologists*	60.8%	4.2%	3.7%			
Licensed Counselors & Therapists*	53.7%	8.3%	4.1%			
Licensed Social Workers*	29.9%	9.1%	7.4%			

Not all behavioral/mental health providers worked full-time. Only 60% of the profiled providers reported working more than 30 hours a week (see Table 3). Furthermore, not all of their time was spent in direct patient care (see Chart 3). On average, physician assistants reported that they spent 90% of their time in direct patient care. Nurse practitioners spent an average of 79% of their time in direct patient care.

Table 3: Percent of Profiled Profession Working Part-Time (1-30 Hours) or Fulltime (31-51+ Hours) per Week on Average

Profession	1-30 Hours	31-51+ Hours	Missing
Licensed Social Workers*	29.8%	70.0%	0.2%
Registered Nurses	23.4%	62.4%	14.2%
Psychiatrists	36.7%	62.0%	1.3%
Psychologists*	39.7%	60.1%	0.3%
Licensed Counselors & Therapists*	43.2%	56.5%	0.3%
Physician Assistants	44.4%	55.6%	0.0%
Nurse Practitioners	34.8%	50.3%	14.9%

Chart 3: Average Percent of Time in Direct Patient Care by Behavioral/Mental Health Profession



All of the profiled behavioral health providers reported engaging in activities outside of direct patient care, including teaching/training, research, and management/administration. Licensed social workers spent 62% of their time in direct patient care and 19% of their time in management activities. Licensed counselors and therapists spent 61% of their time in direct patient care and 20% of their time in management activities.

*Results are based on available data and may not be generalized to the profession as a whole.

Age and Future Practice Plans

As a whole, 46% of the behavioral/mental health workforce profiled in this report was 55 years of age or older (see Chart 4). Of the available data for psychologists, 56% were 55 years of age or older. Similarly, over half of the nurse practitioners were 55 years of age or older.

Chart 4: Age Range of Behavioral/Mental Health Professionals

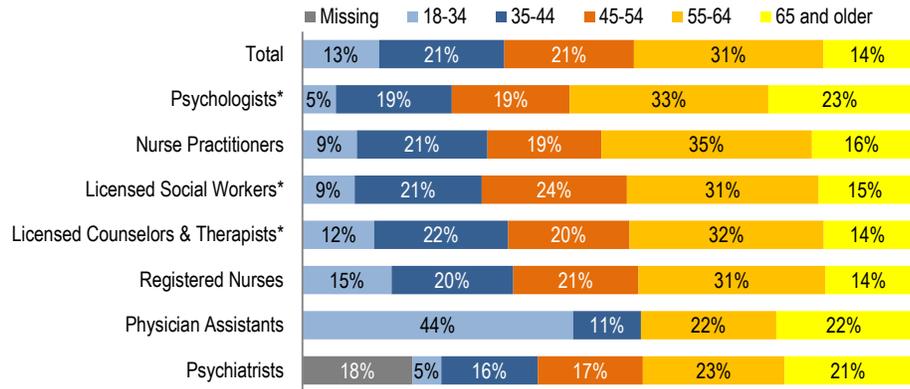


Table 4: Behavioral/mental health professionals who intend to reduce hours, retire, leave practice, or move from Oregon within the next two years

Profession	Count	Percent of Profession
Nurse Practitioners	55	16%
Registered Nurses	218	11%
Psychologists*	53	14%
Licensed Counselors & Therapists*	70	11%
Licensed Social Workers*	92	11%
Psychiatrists	31	9%
Physician Assistants	0	-
Total	519	12%

Despite so many of the behavioral/mental health workforce approaching or past traditional retirement age, the available data suggested few plan to leave the profession or reduce their practice hours within the next two years. In fact, 76% of the behavioral health workforce aged 55 or older reported intentions to maintain or increase work hours.

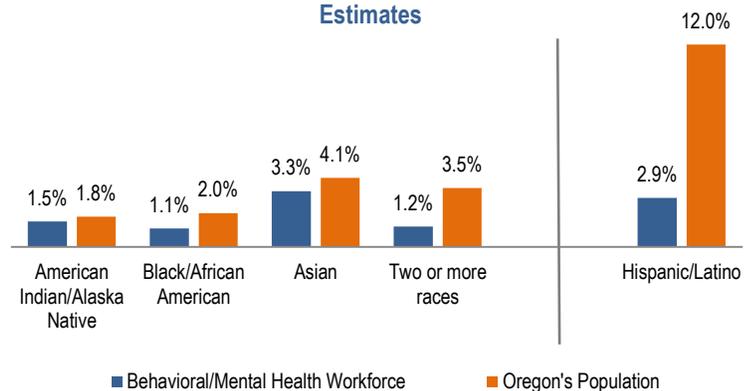
Overall, only 12% of the profiled behavioral health workforce for all ages reported an intention to reduce hours, move out of Oregon, retire, or leave the practice within the 2014-2015 timeframe (see Table 4). It is unclear if missing data from licensed social workers, counselors and therapists, and psychologists might alter these findings.

Race and Ethnicity

Racial diversity within the behavioral/mental health workforce appears to somewhat mirror that of Oregon's population (see Chart 5).¹⁰ Eighty-six percent of the profiled behavioral/mental health workforce identified as Caucasian/White, as compared with 88% of the state's population. Three percent of these providers identified as Asian, 1% as American Indian/Alaskan Native, and 1% as Black/African American.

Three percent of the behavioral health workforce identified as Hispanic/Latino, significantly lower than the population of Oregon at 12%.

Chart 5: Race and Ethnicity of the Behavioral/Mental Health Workforce as Compared to State Population Estimates



*Results are based on available data and may not be generalized to the profession as a whole.

Data Sources and Methodology

Data for this report comes from the following licensing boards as submitted to the state's Licensed Health Professions Workforce Database: The Oregon Medical Board; the Oregon State Board of Nursing; the Board of Licensed Social Workers; the Board of Licensed Professional Counselors and Therapists; and the Board of Psychologist Examiners.

Health care workforce data for the occupations profiled in this report were collected during the license renewal process. Data from the Oregon Medical Board, the Board of Licensed Social Workers, the Board of Licensed Professional Counselors and Therapists, and Board of Psychologist Examiners reflects information collected after June 30, 2012 through June 11, 2014. Data from the Oregon State Board of Nursing reflects information collected through December 2014. Data on Oregon's behavioral/mental health workforce represent those licensees who reported a valid practice address in Oregon and indicated they were employed in the field, self-employed in the field, a student or faculty member, a volunteer, or were retired but still practicing.

Psychiatrists are those active licensed physicians who identified practice specialties in addiction psychiatry, child and/or adolescent psychiatry, forensic psychiatry, geriatric psychiatry, neuropsychiatry, psychiatry, and

psychoanalysis. Physician assistants included in this report are those who identified a practice area in psychiatry.

Oregon State Board of Nursing data included nurse practitioners and nurses who renewed their license to practice in Oregon. Nurse practitioners and registered nurses included in this report are those who indicated a specialty in psychiatry/mental health and reported working in Oregon. Data were available on 85% of nurse practitioners and 86.4% of nurses.

The Boards of Licensed Professionals Counselors and Therapists, Licensed Social Workers, and Psychologist Examiners have been collecting and submitting workforce data from their licensees on a voluntary basis since 2012. Because licensees are not required to complete the questionnaires, response rates are low (less than 25%) among counselors, therapists, social workers, and psychologists. Demographic and employment data were only available for 839 social workers, 637 professional counselors and marriage and family therapists, and 383 psychologists. Data presented in the report on these three professions should not be generalized across the profession and only represents those licensees who submitted data during the 2014 renewal cycles.

Race and ethnicity data for Oregon's population comes from the U.S. Census Bureau's *Oregon Population Estimates*, accessed on May 20, 2015.

Resources

Oregon Center for Nursing - <http://oregoncenterfornursing.org/>

Oregon Health Authority, Addictions and Mental Health - <http://www.oregon.gov/oha/amh/Pages/index.aspx>

Oregon Health Authority, Primary Care Office, Mental Health Professional Shortage Areas - <http://www.oregon.gov/oha/OHPR/PCO/Pages/HPSA%20Designation.aspx>

Oregon Healthcare Workforce Institute – <http://oregonhwi.org/>

Endnotes

1. Heisler, E.J., and Bagalman, E. (2015). *The Mental Health Workforce: A Primer*. Congressional Research Service, 7-5700. Available at <http://fas.org/sgp/crs/misc/R43255.pdf>
2. See http://www.oregon.gov/oha/ohpr/rsch/pages/workforce_Rptg.aspx
3. See *Oregon Administrative Rules 309-019-0125 (8)* for definition of Qualified Mental Health Associates.
4. See *Oregon Administrative Rules 309-019-0125 (9)* for definition of and Qualified Mental Health Professionals.
5. See <http://www.accbo.com/> for information on Certified Alcohol Drug Counselors in Oregon.
6. See Oregon Health Authority's Addictions and Mental Health Division (<http://www.oregon.gov/oha/amh/pd/Pages/approved-training.aspx>) and Aging and People with Disabilities Division (http://www.oregon.gov/dhs/spwpd/pages/hlth_med/peer.aspx) for information on state-approved peer counselor programs.
7. Wittchen, H., Mühlig, S., and Beesdo, K. (2003). Mental disorders in primary care, *Dialogues in Clinical Neuroscience*, Vol. 5(2): 115–128. Accessed online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181625/>.
8. Information on Oregon's primary care clinicians can be found in the *2015 Oregon Health Professions: Occupational and County Profiles* report available at <http://www.oregon.gov/oha/OHPR/HCW/Pages/Policy-Recommendations.aspx>.
9. National Alliance on Mental Illness (2013.) *Mental Health Professionals Fact Sheet*. Available at http://www2.nami.org/factsheets/mentalhealthprofessionals_factsheet.pdf.
10. U.S. Census Bureau (2014). Oregon Population Estimates, accessed 5/20/2015 at <http://quickfacts.census.gov/qfd/states/41000.html>.

Appendix A: County of Practice for Selected Behavioral/Mental Health Occupations

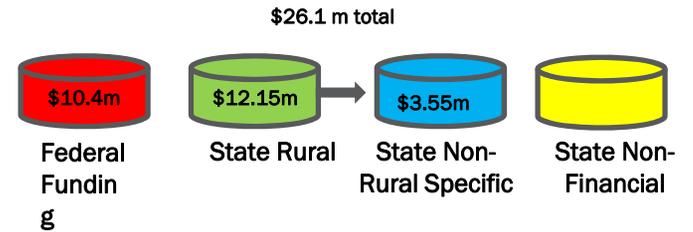
	Physician Assistants	Psychiatrists	Nurse Practitioners	Registered Nurses	Total by County
Baker	0	0	1	2	3
Benton	0	27	3	54	84
Clackamas	0	45	25	95	165
Clatsop	0	1	3	8	12
Columbia	0	1	2	5	8
Coos	0	5	3	26	34
Crook	0	0	0	0	0
Curry	1	2	2	4	9
Deschutes	1	23	12	62	98
Douglas	0	7	7	54	68
Gilliam	0	0	0	0	0
Grant	0	1	0	2	3
Harney	0	0	0	1	1
Hood River	0	4	0	2	6
Jackson	2	20	9	71	102
Jefferson	0	1	2	5	8
Josephine	0	4	3	26	33
Klamath	0	4	7	11	22
Lake	0	0	0	1	1
Lane	0	47	24	128	199
Lincoln	0	3	2	9	14
Linn	0	3	2	12	17
Malheur	3	1	2	10	16
Marion	0	66	35	387	488
Morrow	0	1	0	1	2
Multnomah	2	256	140	745	1,143
Polk	0	2	4	7	13
Sherman	0	0	0	0	0
Tillamook	0	1	4	6	11
Umatilla	0	4	7	38	49
Union	0	2	3	7	12
Wallowa	0	0	0	5	5
Wasco	0	3	2	7	12
Washington	0	75	25	89	189
Wheeler	0	0	0	0	0
Yamhill	0	10	7	30	47
Missing	0	0	0	4	4
Total by Profession	9	619	336	1,914	2,878

Note: The available practice location data for licensed clinical social workers, counselors, therapists, and psychologists were insufficient to provide county counts.

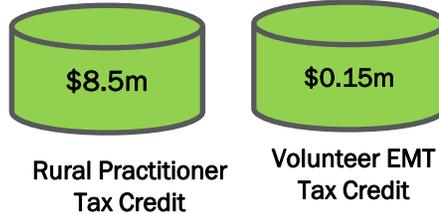


**HB 3396 IMPLEMENTATION:
RECOMMENDATIONS ON PROVIDER
INCENTIVE PROGRAMS**

STATE AND FEDERALLY FUNDED HEALTHCARE WORKFORCE PROVIDER INCENTIVES AVAILABLE TO OREGON PROVIDERS (2015)^{1,2}



TAX CREDITS
\$8.65m



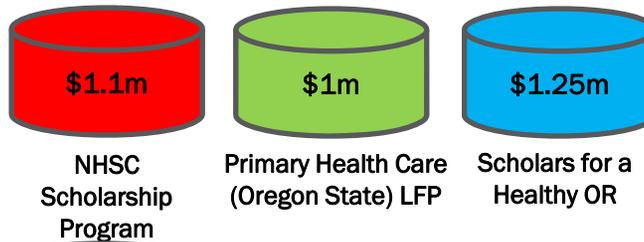
INSURANCE SUBSIDIES
\$2.5m



LOAN REPAYMENT
\$11.6m



LOAN FORGIVENESS
\$3.35m



OTHER

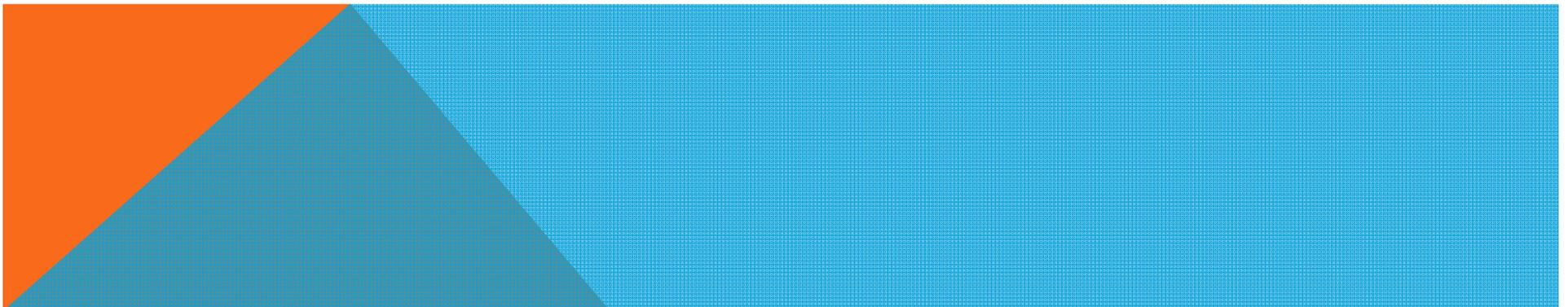


- 1) Figures reflect annual expenditures for 2015 or most recent available year
- 2) Other programs not currently funded are not listed on this display
- 3) Program generates revenues from application fees to cover biennial costs

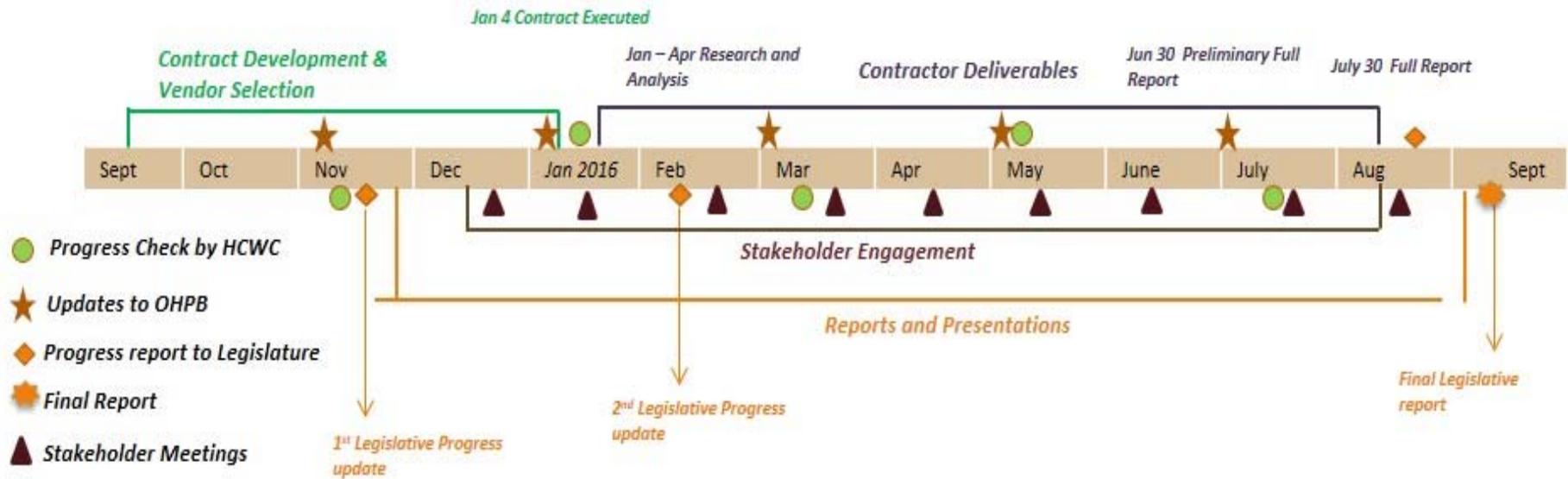
OVERVIEW OF BILL

HB 3396 directs the Oregon Health Policy Board to study and evaluate the effectiveness of the financial incentives offered by the state to recruit and retain providers in “rural and medically underserved areas” and make recommendations to the Legislature regarding:

- Continuation, restructuring, consolidation or repeal of existing incentives;
- Priority for directing the incentives offered by Health Care Provider Incentive Fund; and,
- Establishment of new financial incentive programs.

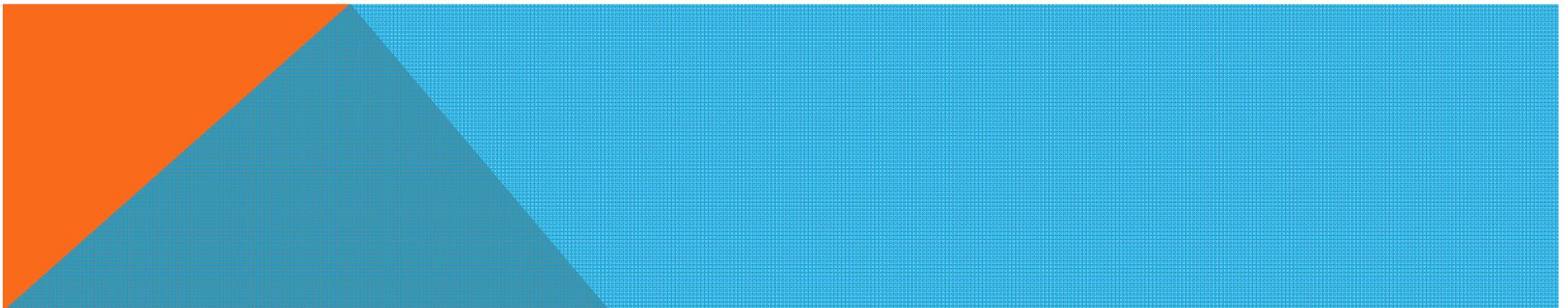


HB 3396 Implementation Timeline



KEY TASKS FOR VENDOR

- Research , Data Analysis & Design
- Evaluation of Program Effectiveness & Efficiency
- Develop Policy & Program Recommendations
- Stakeholder Engagement
- Prepare Comprehensive Report
- Presentations

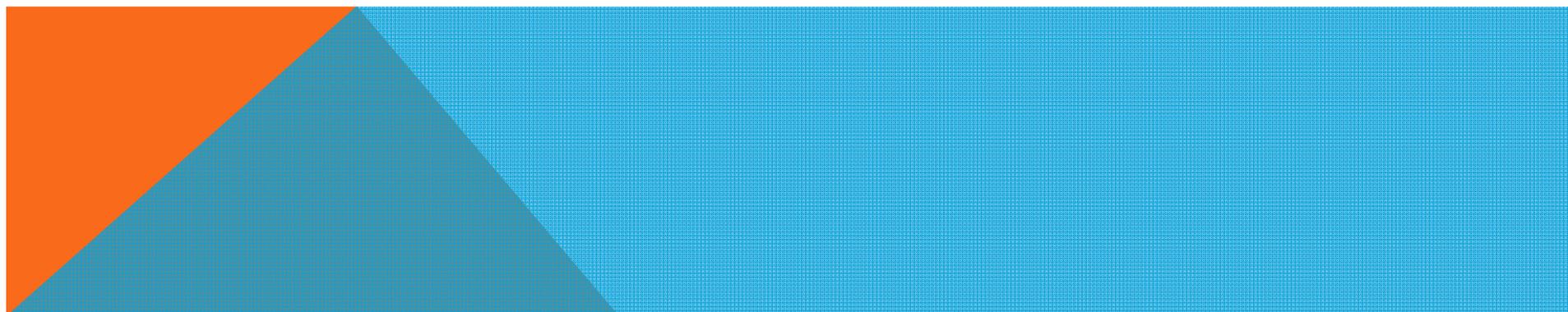


CONTRACTOR DELIVERABLES/TIMELINES

Summary of Task Deliverables and Estimated Completion Dates			
Task	Description	Estimated Completion:	Deliverable Type
Research and Data Analysis	Comprehensive environmental scan, analysis and estimates of Oregon's health care workforce, incentive programs	4/15/2016	Written report, supporting documentation
Evaluation of Program Effectiveness and Efficacy	Assessment of Oregon's existing and potential future provider incentive programs	5/31/2016	Written report, supporting documentation
Policy and Program Recommendations	Develop recommendations to most expeditiously maximize the capacity of the health care workforce in Oregon through various incentives.	6/30/2016	Written report, supporting documentation
Stakeholder Engagement	Organize and support stakeholder engagement process	6/30/2016	Work plan, agendas, meeting materials
Comprehensive Report	Integrated analysis, program effectiveness assessment and recommendations	7/31/2016	Written report, supporting documentation
Presentations	Develop and submit presentations to various audiences	7/31/2016	Presentations

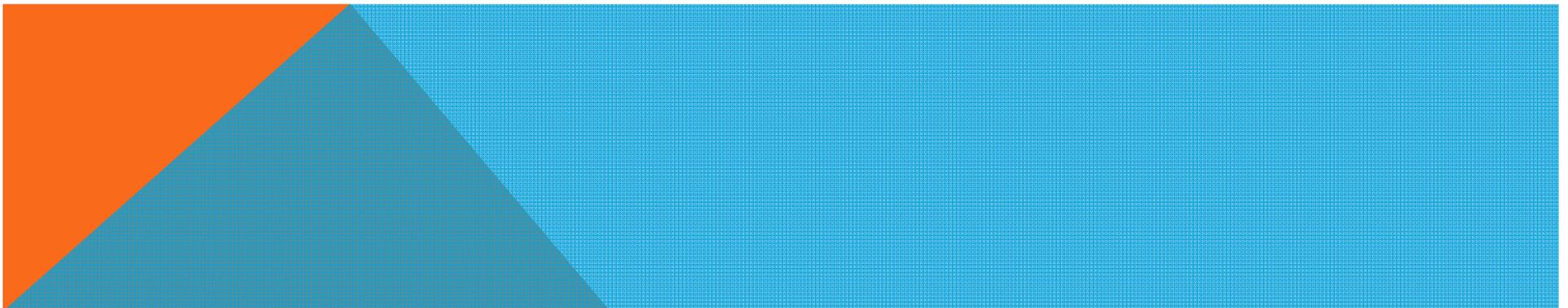
STAKEHOLDER ENGAGEMENT

"Little Group"	"Big Group"
<ul style="list-style-type: none">• Representatives from HCWF Committee• OHA Staff• Office of Rural Health• Association of Hospitals and Health Systems• Oregon Rural Practice Research Network <p>ROLE: Provide overall steering for the project</p>	<ul style="list-style-type: none">• Representatives from HCWF Committee• OHA Staff• Office of Rural Health• Association of Hospitals and Health Systems• Oregon Rural Practice Research Network• Oregon Medical Association• Oregon Nursing Association• Oregon Dental Association• Oregon Physician Assistant Association• Oregon Chiropractic Association• Oregon Naturopathic Association• Oregon Academy of Family Practitioners• Oregon Primary Care Association• Oregon Health and Science University• Western University of Osteopathic Medicine• Oregon Healthcare Workforce Institute• Oregon Center for Nursing• Others as interested <p>ROLE: Provide feedback on data, policy considerations and preliminary recommendations</p>

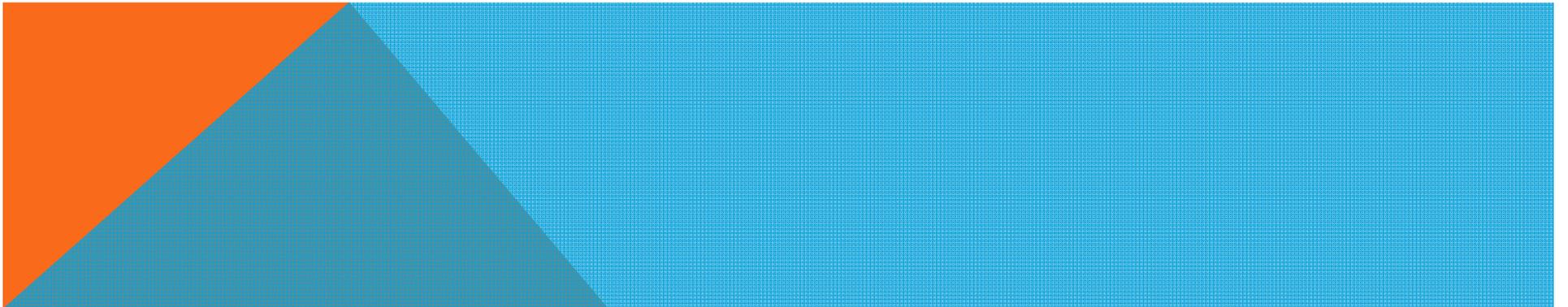


HCWF COMMITTEE ROLES

- Support selection of vendor
- Provide key input in determining criteria for evaluating the effectiveness of incentive programs
- Assist vendor with stakeholder engagement
- Reviewing progress over time and provide direction to vendor and OHA staff
- Reviewing/finalizing report to Health Policy Board



QUESTIONS/DISCUSSION



The Projected Demand for Physicians, Nurse Practitioners, and Physician Assistants in Oregon: 2013-2020

February 2014

Prepared for:
The Oregon Health Authority

Prepared by:
Office for Oregon Health Policy & Research
Oregon Health & Science University, Center for Health System Effectiveness
Oregon Healthcare Workforce Institute

Revised 2/2/2014

Oregon Healthcare
Workforce Institute



OREGON
HEALTH & SCIENCE
UNIVERSITY



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Executive Summary

This study estimates the number of physicians, nurse practitioners, and physician assistants needed in Oregon between 2013 and 2020 to address the demand for health services created by Oregon's health system transformation, federal health reform, and a growing and aging population. The study uses unique data from Oregon-specific sources, including Oregon's All Payer, All Claims database and the Oregon Health Care Workforce Licensing Database, to identify utilization by type of health insurance coverage and to allow for the estimation of clinician demand at the state and county level.

Baseline clinician demand projections were estimated by applying observed rates of utilization of health care services per-person and per-clinician providing this care to population projections of coverage changes. Adjustments to the model were developed to estimate the potential workforce impacts of Oregon's health system transformation, team-based care, full implementation of health information technologies, and a combination of team-based care and health information technologies.

The baseline projection between 2013 and 2020 for all three health professions is 16% growth over current demand. At the county level, the 2013-2020 baseline projections ranged from 9.3% additional demand in Umatilla County to 28.5% in Curry County. In addition, Wheeler, Coos, Tillamook, Wallowa, and Josephine counties have estimated demand rates at 25% or greater for all three professions. The variation in growth rates is driven by differing proportions of uninsured (and other coverage types) in areas that feed the providers in those counties.

Adjusting for a two percent reduction in Medicaid utilization—corresponding to the Oregon's commitment to reduce Medicaid cost growth—the demand for physicians, nurse practitioners and physician assistants drops slightly to a 14% growth rate. For all three professions, the implementation of the full-range of health information technologies reduces demand to an 11% growth rate.

The demand shift among clinicians is seen in the team-based care scenario where projected physician demand drops to a 12% growth rate while simultaneously increasing that of nurse practitioners and physician assistants to 31%. Combining both team-based care and health information technologies further reduces the projected physician demand curve to a 7% growth rate, but increases the projected demand for both nurse practitioners and physician assistants by 24% between 2013 and 2020.

These projections, specifically at the county-level, help inform workforce capacity adjustment efforts such as directing finite public and private resources for technical assistance, health profession education, workforce development, and recruitment and retention efforts to areas of greatest need. The findings demonstrate that projected clinician demand varies widely under possible scenarios. These projections also highlight the critical links among provider access, workforce capacity, health profession education, payment structures, and delivery system design that are important components in meeting the goals of the Triple Aim.

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The Projected Demand for Physicians, Nurse Practitioners, and Physician Assistants in Oregon: 2013-2020

The importance of understanding the dynamics of the demand for and supply of health care providers in Oregon has never been greater. The ability of state and federal health reforms to meet the stated “Triple Aim” of better health, better care and lower costs will depend in large part on the health care workforce and its capacity to meet the increase in demand for health services that is likely to accompany expansions in health insurance coverage. At the same time, health care delivery models are being substantially reconsidered and redesigned. This study aims to address the question of how many clinicians will be needed in Oregon after health care reform.

Background

Expansions in health insurance coverage tend to lead to increases in the use of health care services, particularly primary care services.¹ For example, recent findings from the Oregon Health Study show that Oregonians gaining access to Medicaid coverage increased their use of health care services by 35 percent, with primary and preventive care a large share of that increase. Additionally, those with Medicaid coverage were 70 percent more likely to have a regular place of care and 55 percent more likely to have a regular physician than those without coverage.² Similar outcomes were reported after Massachusetts passed legislation to expand access to health insurance coverage in 2006. Between 2006 and 2010, the number of state survey respondents reporting a regular source of care increased from 86 to 90 percent and the number visiting a physician for preventive services within the previous 12 months increased from 70 to 76 percent.³

Massachusetts’s experience with health care reform underscores the need to anticipate the effect of coverage expansion and other changes on health care delivery systems. That state’s expansion efforts did not address health care workforce implications and, following implementation, the state’s health care infrastructure showed signs of strain. Although the proportion of residents without a primary care provider decreased by 10 percent between 2006 and 2008, the share of family medicine and internal medicine physician offices accepting new patients also declined, by 10 and 22 percent, respectively from 2005 to 2009. In 2009, more than one in five residents reported difficulty obtaining health care, even though Massachusetts has the highest primary care physician-to-population ratio of all 50 states.^{4,5} Immediately following its reforms, Massachusetts saw stronger growth among health care administrative personnel, such as financial and business managers, than among its clinician workforce.⁶

The question of whether the supply of clinicians will be sufficient to meet demand is being raised nationwide with increasing urgency in both the health care literature and popular media, with approaches ranging from pure opinion pieces to complex simulation models. Opinions and conclusions vary widely along with the methods used, with some studies projecting grave shortages and others suggesting only minor increases in capacity are needed.

One reason for the variation of conclusions is the rapid, ongoing changes in the way health care is delivered and financed. These operational changes will likely impact demand in ways that are not yet clear. Evidence from primary care home models and care coordination initiatives suggests that practices which emphasize case management, patient-centered care, and technology reduce costs by preventing hospitalizations and emergency department visits.^{7,8} These models have very different implications for how many and what kind of health professionals and non-clinical personnel would be needed.

Several recent national studies which estimate the future demand for different types of health care providers are described in Appendix A. Building on that literature, this study uses a utilization-based macro-simulation model to project clinician demand specific to Oregon through 2020. The model encompasses physicians, physician assistants and nurse practitioners, making the projections broader than several national studies focused solely on physicians. The model also incorporates demographic trends and the expected impact of insurance coverage expansion through state and federal health care reforms. At the same time, this study includes additional analyses to investigate and further refine the projected workforce impacts of new care delivery practices, such as team-based staffing and increased use of technology.

Unlike other studies that use national data to identify state workforce needs, this study uses data from Oregon sources, including Oregon's All Payer, All Claims database and the Oregon Health Care Workforce Licensing Database, to identify Oregon-specific utilization by type of coverage and to allow for the examination of workforce demand at the county level. This wealth of data provides the opportunity to focus on Oregon and its counties, exploring regional need to a degree unavailable in national studies.

Even with these data sources, this study is not intended to produce definitive figures on the number of providers needed in Oregon in a given year. Instead, the goal is to produce a

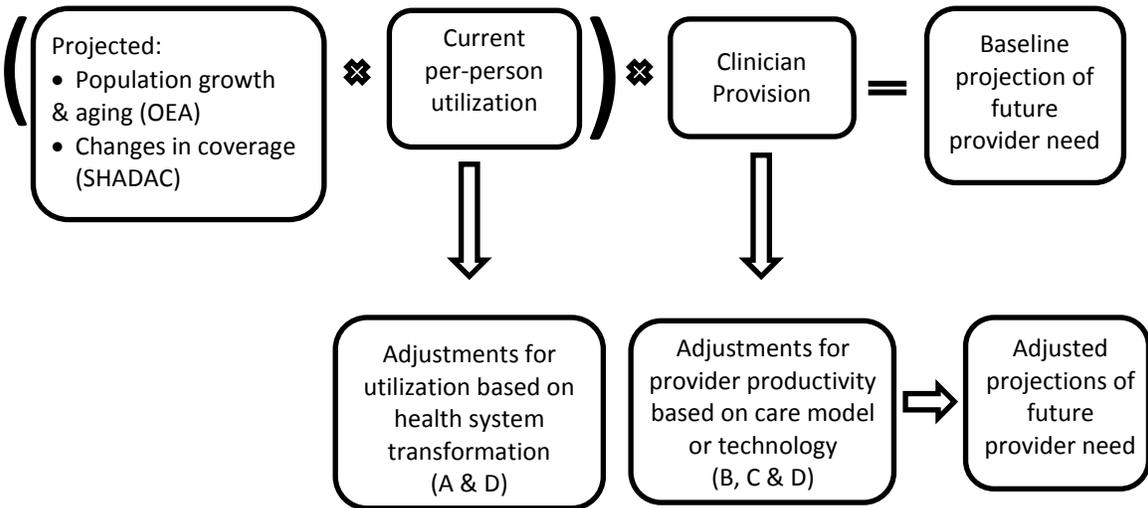
reasonable range of estimates based on current trends and how potential changes in care delivery or policy might affect those trends.

Projection Methodology

Conceptually, the model generates projections by applying observed/existing relationships between patients and clinicians (physicians, nurse practitioners, and physician assistants) to widely-accepted population projections. There are two factors describing these relationships: utilization of health care services per-person and the number of clinicians providing this care.

Both components of the utilization factor come from Oregon’s All Payer, All Claims database (APAC). Utilization itself is measured by submitted claims information. This is divided by number of individual persons on whose behalf the claims were submitted. The resulting ratio describes of the per capita rate of health care services utilization (see Figure 1).

Figure 1: Projection Model



The clinician provision factor is generated by dividing the number of clinician full-time equivalents (FTE), identified as average weekly work hours in the 2012 Oregon Health Care Workforce Licensing Database (see Appendix B), by the aggregate amount of claims submitted (from APAC). This ratio describes the number of clinicians providing the services represented by the claims data. Utilization for Medicare FFS and the uninsured is not currently captured in APAC and is thus imputed. For Medicare FFS this is done using the per-person spending of

Data Sources

All-Payer, All-Claims Database: Health care utilization data comes from the Oregon All-Payer, All-Claims Database (APAC). By statute, commercial health insurance carriers, third party administrators and certain Medicaid and Medicare programs are required to report medical and pharmacy claims as well as diagnoses, procedures performed and provider location and specialty on a quarterly basis. For more information, go to:

http://www.oregon.gov/oha/OHPR/RSCH/Pages/APAC.aspx#Informational_Documents.

SHADAC Projection Model: Changes in insurance coverage projections are generated by the State Health Access and Data Assistance Center (SHADAC) projection model. This complex spreadsheet model incorporates national and state-level policy and demographic information in order to forecast the impact of policy changes on health insurance coverage. For more information, go to:

<http://www.shadac.org/publications/predicting-health-insurance-impacts-complex-policy-changes-new-tool-states>.

Clinician Data: Workforce data for active licensed physicians (MD/DO), nurse practitioners, and physician assistants practicing in Oregon were extracted from the Oregon Health Care Workforce Licensing Database as submitted by the Oregon Medical Board in February 2012 and the Oregon State Board of Nursing in January 2012. These data are collected by the Oregon Office for Health Policy and Research and analyzed with the assistance of experts from the Oregon Healthcare Workforce Institute and Oregon Center for Nursing. For more information, go to:

<http://www.oregon.gov/oha/OHPR/RSCH/docs/Workforce/2012%20Workforce%20Report/2012%20Workforce%20Report.pdf>.

Population Data: Demographic information comes from the American Community Survey (ACS). The ACS is an ongoing survey administered by the U.S. Census Bureau and, similar to the decennial census but at a greater frequency, provides snapshots of the population. Additional demographic data comes from the Oregon Office of Economic Analysis' (OEA) August 2012 Economic and Revenue Forecast. For more information go to:

<http://www.oregon.gov/DAS/oea/pages/index.aspx>

Medicare Advantage enrollees in their area. For the uninsured, this is done using the results of the Oregon Health Study, which suggests that the uninsured used 76 percent as much health care services as those with Medicaid.

This methodology is innovative in its ability to use information on sub-state utilization and the types of clinicians in each area.ⁱ Additionally, because the utilization data captures both the location of the resident and the clinician, the projections incorporate the existing patient flows throughout the state. In Multnomah County, for example, the existing clinician provision factor and the projected increase in utilization indicate that many of the patients who are treated there reside outside the county.

Baseline projections: Population projections (population size and coverage status) are taken from the State Health Access Data Assistance (SHADAC) Projection Model. This model was developed to help states understand the potential impacts of the Affordable Care Act on different segments of the population. Baseline demographic information is taken from the 2010 American Community Survey and the 2009 Medical Expenditure Panel Survey. The total number of people is then projected out to the year 2020 using annual growth rates generated by the August 2012 Oregon Economic and Revenue Forecast. The

ⁱ This detail is recommended in the "Better Health Care Worker Demand Projections: A Twenty-First Century Approach" report (pg. 18) from the Bipartisan Policy Center at <http://bipartisanpolicy.org/library/report/better-health-care-worker-demand-projections-twenty-first-century-approach>

distribution of insurance coverage by type is estimated using results from the economics literature and the policy and administrative aims of the Patient Protection and Affordable Care Act (ACA) (see Appendix C).

Total utilization is projected by multiplying the population projections by the utilization-per-person factor. The workforce figures are then generated by multiplying the utilization projections by the clinician provision factor. These components can then be disaggregated by geographic factors (county), insurance type (private, Medicare, Medicaid and uninsured) and provider type (physician, nurse practitioner, or physician assistant). These forecasts comprise the baseline projections.

Adjustments to the baseline model were developed to estimate the potential workforce impacts of four scenarios: (A) Oregon's health system transformation efforts, (B) team-based care, (C) full implementation of health IT, and (D) a combination of team-based care and health IT.

(A) Health System Transformation: This scenario adjusts the baseline demand projections to reflect Oregon's efforts to reduce the growth rate in per capita Medicaid spending by 2 percentage points.⁹ This model incorporates a 5.4 percent growth rate in utilization for all insurance categories except Medicaid. Among Medicaid patients, utilization is assumed to grow at a rate of 4.4 percent 2013 and then 3.4 percent for 2014 through 2020. Furthermore, utilization is assumed to grow at a uniform 5.4 percent rate for each of the three clinician types.

(B) Team-Based Care: Scenario B estimates the impact of team-based care, or greater use of non-physician providers, on clinician demand. In this scenario, the ratio of nurse-practitioners and physician assistants to physicians is increased by 12 percent over eight years.^{10,11}

(C) Health Information Technology: This scenario incorporates the impact of the implementation of electronic health records and related technologies on clinician productivity. Specifically, interoperable electronic health records, clinical decision support, provider order entry, and web-based secure patient messaging are assumed to increase clinician productivity by 10 percent.^{12,13} Based on data showing that 38 percent of office-based providers in Oregon were already using an electronic health record in 2012, this productivity factor is applied to 62 percent of clinicians and phased in over the seven years projection period (2014 to 2020).¹⁴

(D) Team-Based Care and Health Information Technology: The final modification combines elements of scenarios B and C. First, with the implementation of team-based care (scenario B), the physician utilization is adjusted downward while the utilization of nurse practitioners and physician assistants is adjusted upward. Second, with the incorporation of health information technology (scenario C), the productivity of all clinicians is increased.

Additional Scenarios (Not Modeled): Of course, these four scenarios are far from a complete enumeration of all potential changes to the health care system that may affect utilization. Due to data limitations, the alternate scenarios do not incorporate other potential changes such as: increased focus on prevention activities; changes in population health status (other than population aging); moving more care into community settings that do not employ licensed health professionals; or delegation of clinical care to providers other than physician assistants and nurse practitioners, such as pharmacists, registered nurses, or traditional health workers. This study's focus on physicians, nurse practitioners, and physician assistants is partly a necessary response to limited evidence but also a recognition that these providers serve as the point of entry to care for many patients, especially those with new coverage.

Findings

Baseline Projections of Clinician Demand: Under the baseline conditions, demand in Oregon for physicians, nurse practitioners, and physician assistants will increase by 16 percent between 2013 and 2020,. This translates into an estimated additional 1,726 physician FTEs, 332 nurse practitioner FTEs, and 168 physician assistant FTEs (see Table 1). (The additional FTEs projected do not include the number of additional clinicians needed to replace those who leave the workforce due to retirement, relocation, reduction in work hours, etc.)

Table 1: Baseline FTE Demand Projections by Clinician Type: 2013-2020

Clinician	Value	2013	2014	2015	2016	2017	2018	2019	2020
Physician	Count	10,491.6	10,772.0	11,069.6	11,304.6	11,526.2	11,755.5	11,985.9	12,217.3
	Change (Cumulative)		280	578	813	1,035	1,264	1,494	1,726
NP	Count	2,004.3	2,058.8	2,116.3	2,161.4	2,203.9	2,247.9	2,292.1	2,336.4
	Change (Cumulative)		54	112	157	200	244	288	332
PA	Count	994.3	1,021.8	1,050.7	1,073.6	1,095.2	1,117.6	1,140.0	1,162.6
	Change (Cumulative)		27	56	79	101	123	146	168
Total	Count	13,490	13,852	14,237	14,540	14,825	15,121	15,418	15,716
	Change (Cumulative)		362	746	1,049	1,335	1,631	1,928	2,226

The change in anticipated provider demand is driven by the change in utilization.ⁱⁱ This change can be broken down into changes in population size, population aging, and health insurance coverageⁱⁱⁱ. The proportion of the change in FTE demand attributed to each of those factors is shown in Table 2.

ⁱⁱ Because medical inflation affects both the utilization and the productivity of clinicians, it does not contribute on net to a change in FTE demand.

ⁱⁱⁱ To attribute FTE demand to the various factors, the percentage change in the population statewide is identified. Next, the change in enrollment in Medicare is used to represent the effect of aging. Finally, after subtracting medical inflation from the utilization change, the remainder of the increase in utilization is attributed to other coverage changes including Medicaid expansion. As the SHADAC report indicates, private insurance also increases over this period due to PPACA.

Table 2: Proportion of Change in FTE Demand by Factor: 2013-2020

Factor	2013	2014	2015	2016	2017	2018	2019	2020
Population Growth	47%	29%	43%	53%	58%	58%	59%	59%
Population Aging (Medicare only)	43%	26%	15%	18%	23%	25%	23%	22%
Coverage Changes	11%	45%	43%	28%	19%	17%	18%	18%
Total (rounded)	100%	100%	100%	100%	100%	100%	100%	100%

In 2013, population growth and population aging account for 90 percent of the change in clinician FTE demand, with health insurance coverage expansion accounting for the remaining share.

With implementation of the ACA in 2014, the share of change attributable to changes in coverage climbs to 45 percent of the total change in clinician FTE demand. Once the expansion is fully phased in after 2016, population growth and aging again become the predominant factors driving demand.

The Projected Demand for Oregon’s Clinicians by Scenario: 2013-2020

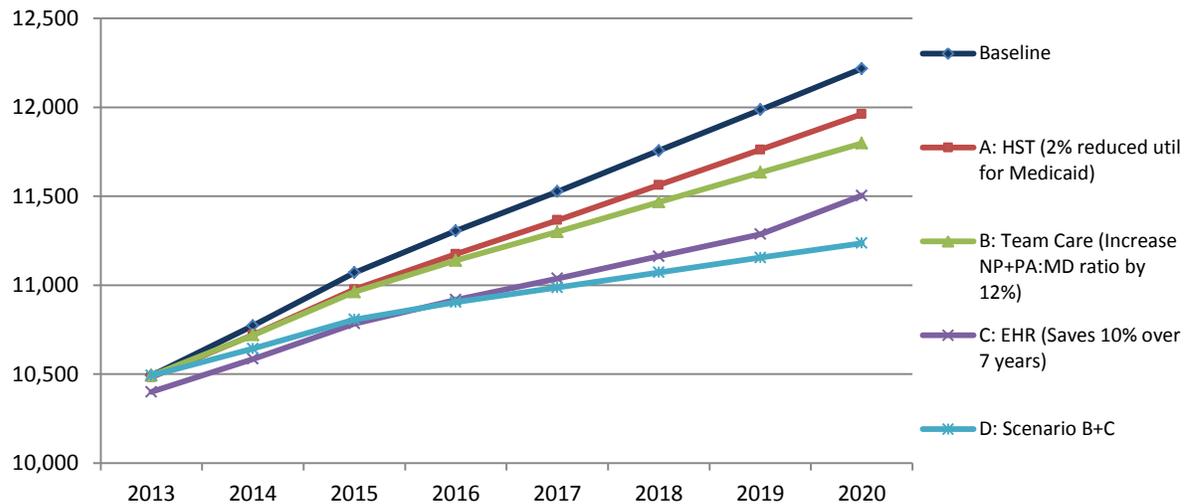
The impacts of alternative workforce scenarios are estimated by adjusting the baseline conditions of the projection model. Again, these scenarios include (A) Oregon’s health system transformation goal of reducing Medicaid growth by 2 percent, (B) team-based care, (C) full implementation of health IT, and (D) a combination of team-based care and health IT. The baseline and adjusted projections are presented by profession in Table 3.

Table 3: Total FTE Demand Projection by Clinician Type and Scenario: 2013-2020

Clinician	Projection Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Physician	Baseline	10,492	10,772	11,070	11,305	11,526	11,756	11,986	12,217
	A: HST (2% reduced utilization for Medicaid)	10,482	10,720	10,976	11,175	11,365	11,562	11,761	11,962
	B: Team Care (Increase NP+PA:Physician ratio by 12%)	10,492	10,719	10,961	11,138	11,300	11,467	11,633	11,798
	C: HIT (Saves 10% over 7 years)	10,400	10,584	10,783	10,918	11,037	11,162	11,286	11,504
	D: Scenario B+C	10,492	10,643	10,807	10,905	10,986	11,072	11,155	11,236
NP	Baseline	2,004	2,059	2,116	2,161	2,204	2,248	2,292	2,336
	A: HST (2% reduced utilization for Medicaid)	2,002	2,048	2,098	2,136	2,172	2,210	2,248	2,286
	B: Team Care (Increase NP+PA:Physician ratio by 12%)	2,003	2,093	2,188	2,271	2,354	2,439	2,527	2,615
	C: HIT (Saves 10% over 7 years)	1,987	2,023	2,062	2,087	2,110	2,134	2,158	2,200
	D: Scenario B+C	2,003	2,078	2,157	2,224	2,288	2,355	2,423	2,491
PA	Baseline	994	1,022	1,051	1,074	1,095	1,118	1,140	1,163
	A: HST (2% reduced utilization for Medicaid)	993	1,017	1,042	1,061	1,079	1,099	1,118	1,138
	B: Team Care (Increase NP+PA:Physician ratio by 12%)	994	1,039	1,087	1,129	1,170	1,213	1,257	1,302
	C: HIT (Saves 10% over 7 years)	986	1,004	1,024	1,037	1,049	1,061	1,073	1,095
	D: Scenario B+C	994	1,032	1,071	1,105	1,138	1,172	1,206	1,240

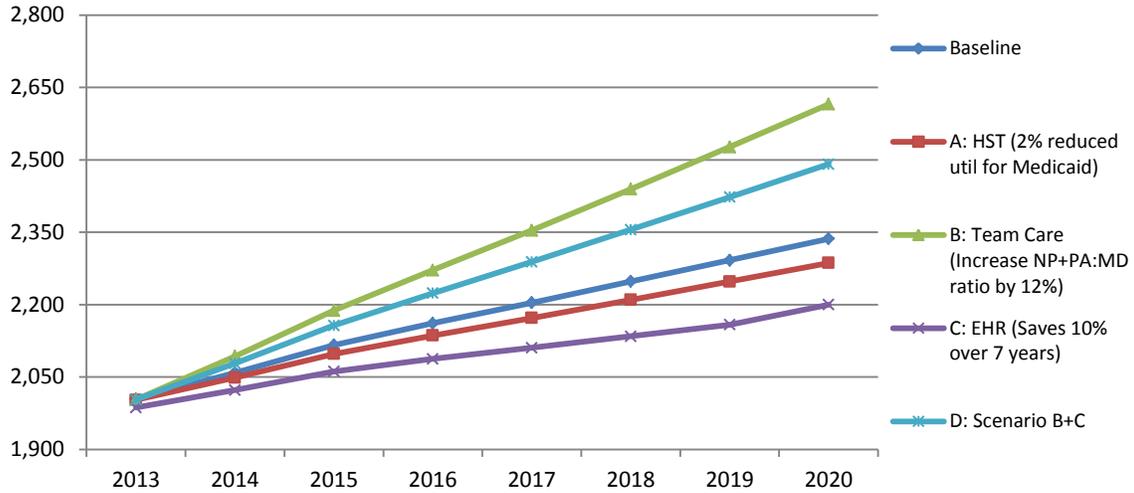
Oregon's Physicians: Relative to the baseline projection, demand for Oregon's physicians drops under each of the four alternate scenarios (see Figure 2). Incorporating a two percent reduction in Medicaid utilization changes the demand for physicians from a 16 percent to 14 percent growth rate between 2013 and 2020 (scenario A). When adjusted for team-based care, the demand drops to a 12 percent projected growth rate (scenario B). Implementing the full range of health information technologies, (interoperable electronic health records, clinical decision support, provider order entry, and web-based secure patient messaging) reduces the demand to an 11 percent growth rate (scenario C). Combining both team-based care and health information technology further reduces the projected seven-year demand curve to a 7 percent growth rate (scenario D).

Figure 2: Projected FTE Demand for Physicians by Scenario: 2013-2020



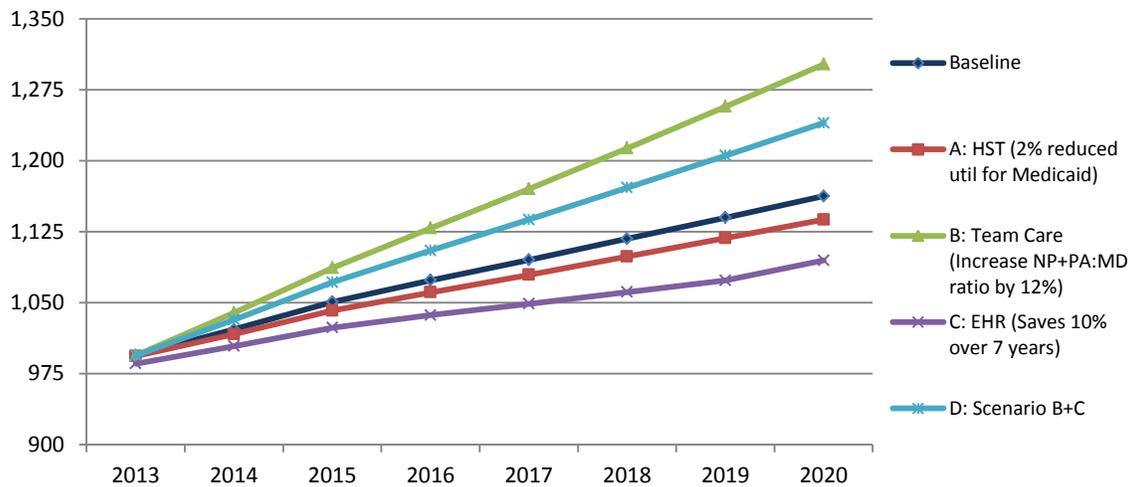
Oregon's Nurse Practitioners: The demand projected for Oregon's nurse practitioners drops from a 16 percent (baseline) growth rate to 14 percent when adjusted for the two percent reduction in Medicaid growth (scenario A) (see Figure 3). Adjusting for team-based care, which increases the roles of non-physician providers, the projected growth rate for nurse practitioners increases to 31 percent (scenario B). By fully implementing health information technologies, the projected growth drops to 11 percent (scenario C). By combining team-based care and health information technologies, the projected demand for nurse practitioners in Oregon increases to 24 percent (scenario D), meaning that Oregon would need 488 additional nurse practitioner FTEs between 2013 and 2020.

Figure 3: Projected FTE Demand for Oregon's Nurse Practitioners by Scenario: 2013-2020



Oregon's Physician Assistants: When adjusted for the two percent reduction in Medicaid growth, the demand curve for Oregon's physician assistants drops from 16 percent to 14 percent relative to the baseline (scenario A) (see Figure 4). The projected demand for physician assistants rises to 31 percent when the model is adjusted for team-based care (scenario B). Implementing interoperable electronic health records and other health information technologies reduces the projected demand growth rate for physician assistants to 11 percent (scenario C). Combining both team-based care and health information technology increases the projected growth rate for physician assistants to 25 percent between 2013 and 2020 (scenario D), meaning that Oregon would need an additional 246 physician assistants by 2020.

Figure 4: Projected FTE Demand for Oregon's Physician Assistants: 2013-2020



The baseline projection for demand between 2013 and 2020 for all three health professions in Oregon is 16 percent. Projected demand for all three clinicians drops to a 14 percent growth rate when incorporating a two-percent reduction in Medicaid utilization, and to an 11 percent growth rate with full-range implementation of health information technologies.

The demand shift among providers is seen in the team-based care scenario. Under these conditions, projected physician demand drops to a 12 percent growth rate while simultaneously that of nurse practitioners and physician assistants increases to 31 percent. Combining both team-based care and health information technology further reduces the projected physician demand curve to a 7 percent growth rate, but increases the projected demand for both nurse practitioners and physician assistants to 24 and 25 percent, respectively, between 2013 and 2020.

The Projected Clinician Demand by County: 2013-2020

Oregon has a unique advantage of drawing on the wealth of data from the APAC database and the clinician data in the Oregon Health Care Workforce Licensing Database to estimate clinician demand for Oregon's 36 counties. For example, under baseline conditions, FTE demand in Curry, Wheeler, Coos, Tillamook, Wallowa, and Josephine counties is estimated to increase by 25 percent or higher for all three clinician types between 2013 and 2020. Tables 6, 7 and 8 group the counties into quartiles based on the percent change in projected physician, nurse practitioner, and physician assistant FTE demand by scenario. See Appendix D for the table of county-level annual projection counts for physicians, nurse practitioners, and physician assistants by each scenario and Appendix E for the table of county rankings by projected percentage change in the clinician workforce by scenario from 2013 to 2020.

Under the baseline conditions, demand for physician, nurse practitioner, and physician assistant FTEs at the county level is projected to range from 28.5 percent growth in Curry County to 9.3 percent growth in Umatilla County. Adjusting the projection model for a 2 percent reduction in Medicaid utilization, the county level FTE demand estimates for physicians, nurse practitioners, and physician assistants range from 27 percent growth in Curry County to 3.8 percent in Jefferson County.

By incorporating team-based care into the projections model, the estimated physician FTE demand tops out at 22.3 percent in Coos County and eliminates increased physician demand for

Morrow (-0.2%), Columbia (-2.6%), Wheeler (-14.4%), and Gilliam (-28.3%) counties. By fully implementing health information technologies, the physician FTE demand ranges from 22.1 percent in Curry County to 3.8 percent in Umatilla County. Combining both team-based care and health information technologies, the estimated physician FTE demand growth rate reaches 16.5% percent in Coos County and eliminates physician demand in Umatilla (-1.1%), Jefferson (-2.0%), Morrow (-5%), Columbia (-7.3%), Wheeler (-18.5%), and Gilliam (-31.7%) counties.

In shifting to team-based care, the estimated FTE demand for nurse practitioners and physician assistants range from 43.9 percent in Curry County to 22.4 percent in Umatilla County. Under full implementation of health information technologies, the nurse practitioner and physician assistant FTE demand estimates vary from 22.1 percent in Curry County to 3.8 percent in Umatilla County.

Combining both team-based care and health information technologies, the estimated FTE demand for nurse practitioners and physician assistants range from a high of 37.0 percent in Curry County to a low of 16.6 percent in Umatilla County.

Table 4: Percent Change Quartiles in Physician FTE Demand by County and Scenario (2013-2020)

Projected Physician Demand	Baseline	A: HST (2% reduced util. for Medicaid)	B: Team Care (NP+PA: MD ratio up by 12%)	C: HIT (Saves 10% over 7 years)	D: Scenarios B+C
Q1: < 9.6%	Umatilla	Jefferson, Klamath, Polk, Umatilla	Columbia, Gilliam, Jefferson, Klamath, Malheur, Morrow, Polk, Umatilla, Wheeler	Hood River, Jefferson, Klamath, Malheur, Marion, Morrow, Multnomah, Polk, Umatilla, Washington	Clackamas, Columbia, Crook, Gilliam, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Marion, Morrow, Multnomah, Polk, Umatilla, Union, Wasco, Washington, Wheeler, Yamhill
Q2: 9.6%-14.1%	Jefferson, Klamath, Morrow, Polk, Washington	Hood River, Malheur, Marion, Morrow, Multnomah, Union, Wasco, Washington, Yamhill	Clackamas, Harney, Hood River, Lake, Marion, Multnomah, Union, Wasco, Washington, Yamhill	Benton, Clackamas, Columbia, Lake, Lane, Union, Wasco, Yamhill	Baker, Benton, Clatsop, Deschutes, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Tillamook, Wallowa
Q3: 14.1%-19.1%	Clackamas, Hood River, Malheur, Marion, Multnomah, Union, Wasco, Yamhill	Benton, Clackamas, Columbia, Deschutes, Douglas, Gilliam, Harney, Jackson, Lake, Lane	Baker, Benton, Clatsop, Crook, Deschutes, Douglas, Jackson, Lane, Lincoln, Linn, Wallowa	Baker, Clatsop, Crook, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Josephine, Lincoln, Linn	Coos, Curry, Grant
Q4: > 19.1%	Baker, Benton, Clatsop, Columbia, Coos, Crook, Curry, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Josephine, Lake, Lane, Lincoln, Linn, Tillamook, Wallowa, Wheeler	Baker, Clatsop, Coos, Crook, Curry, Grant, Josephine, Lincoln, Linn, Tillamook, Wallowa, Wheeler	Coos, Curry, Grant, Josephine, Tillamook	Coos, Curry, Tillamook, Wallowa, Wheeler	

Table 5: Percent Change Quartiles in Nurse Practitioner FTE Demand by County and Scenario (2013-2020)

Projected Nurse Practitioner Demand	Baseline	A: HST (2% reduced util. for Medicaid)	B: Team Care (NP+PA: MD ratio up by 12%)	C: HIT (Saves 10% over 7 years)	D: Scenarios B+C
Q1: < 15.2%	Hood River, Jefferson, Klamath, Marion, Multnomah, Polk, Umatilla, Washington	Clackamas, Hood River, Jefferson, Klamath, Malheur, Marion, Multnomah, Polk, Umatilla, Union, Wasco, Washington, Yamhill		Benton, Clackamas, Columbia, Deschutes, Gilliam, Harney, Hood River, Jefferson, Klamath, Lake, Lane, Linn, Malheur, Marion, Multnomah, Polk, Sherman, Umatilla, Union, Wasco, Washington, Yamhill	
Q2: 15.2%-21.1%	Benton, Clackamas, Columbia, Deschutes, Gilliam, Harney, Lake, Lane, Linn, Malheur, Sherman, Union, Wasco, Yamhill	Baker, Benton, Columbia, Crook, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Lake, Lane, Linn, Sherman		Baker, Clatsop, Coos, Crook, Douglas, Grant, Jackson, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Jefferson, Klamath, Polk, Umatilla
Q3: 21.1%-28.7%	Baker, Clatsop, Coos, Crook, Curry, Douglas, Grant, Jackson, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Clatsop, Coos, Curry, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Hood River, Jefferson, Klamath, Multnomah, Polk, Umatilla, Washington	Curry	Benton, Clackamas, Columbia, Gilliam, Hood River, Lake, Lane, Malheur, Marion, Multnomah, Union, Wasco, Washington, Yamhill
Q4: > 28.7%			Baker, Benton, Clackamas, Clatsop, Columbia, Coos, Crook, Curry, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Josephine, Lake, Lane, Lincoln, Linn, Malheur, Marion, Tillamook, Union, Wallowa, Wasco, Wheeler, Yamhill		Baker, Clatsop, Coos, Crook, Curry, Deschutes, Douglas, Grant, Harney, Jackson, Josephine, Lincoln, Linn, Tillamook, Wallowa, Wheeler

Table 6: Percent Change Quartiles in Physician Assistant FTE Demand by County and Scenario (2013-2020)

Projected Physician Assistant Demand	Baseline	A: HST (2% reduced util. for Medicaid)	B: Team Care (NP+PA: MD ratio up by 12%)	C: HIT (Saves 10% over 7 years)	D: Scenarios B+C
Q1: < 14.9%	Hood River, Jefferson, Klamath, Morrow, Multnomah, Polk, Umatilla, Washington	Clackamas, Hood River, Jefferson, Klamath, Malheur, Marion, Morrow, Multnomah, Polk, Umatilla, Union, Wasco, Washington, Yamhill		Benton, Clackamas, Columbia, Gilliam, Hood River, Jefferson, Klamath, Lake, Lane, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Umatilla, Union, Wasco, Washington, Yamhill	
Q2: 14.9%-21.1%	Benton, Clackamas, Columbia, Deschutes, Gilliam, Harney, Lake, Lane, Linn, Malheur, Marion, Union, Wasco, Yamhill	Baker, Benton, Columbia, Crook, Deschutes, Douglas, Gilliam, Harney, Jackson, Lake, Lane, Linn		Baker, Clatsop, Coos, Crook, Deschutes, Douglas, Harney, Jackson, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Jefferson, Klamath, Polk, Umatilla
Q3: 21.1%-28.5%	Baker, Clatsop, Coos, Crook, Douglas, Jackson, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Clatsop, Coos, Curry, Josephine, Lincoln, Tillamook, Wallowa, Wheeler	Hood River, Jefferson, Klamath, Morrow, Multnomah, Polk, Umatilla, Washington	Curry	Benton, Clackamas, Columbia, Gilliam, Hood River, Lake, Lane, Malheur, Marion, Morrow, Multnomah, Union, Wasco, Washington, Yamhill
Q4: > 28.5%	Curry		Baker, Benton, Clackamas, Clatsop, Columbia, Coos, Crook, Curry, Deschutes, Douglas, Gilliam, Harney, Jackson, Josephine, Lake, Lane, Lincoln, Linn, Malheur, Marion, Tillamook, Union, Wallowa, Wasco, Wheeler, Yamhill		Baker, Clatsop, Coos, Crook, Curry, Deschutes, Douglas, Harney, Jackson, Josephine, Lincoln, Linn, Tillamook, Wallowa, Wheeler

Discussion

This study produces a range of demand projections for physicians, nurse practitioners, and physician assistants specific to Oregon and its 36 counties. Additionally, adjustments to the projection model provide valuable information on how potential changes in care delivery, practices, or policies may affect health care utilization and provider demand.

The findings demonstrate that projected clinician demand varies widely under different, plausible scenarios. This range of estimates may be especially relevant in Oregon, given the variety and scope of health system transformation activities already underway. The expansion of team-based care, where the handling of less complex cases is shifted to nurse practitioners and physician assistants, has the potential to decrease the demand for physicians in Oregon significantly while increasing the demand for non-physician providers. This is an important consideration given that between 2010 and 2012, Oregon's physician workforce decreased by 3 percent (313) while the number of nurse practitioners increased by 11 percent (218) and the number of physician assistants increased by 6 percent (54).¹⁵

Additionally, the full implementation of interoperable electronic health records and other health information technology may produce practice efficiencies that allow clinicians to maintain a higher case load than could otherwise be achieved without electronic communication.

These projections highlight the intricate and critical links between provider access, workforce capacity, health profession education, payment structures, and delivery system design, all important components in meeting the goals of the Triple Aim. For example, the number of clinicians and practices choosing to implement team-based care and health information technologies is likely to depend on changes in the payment model that encourage increased access, better patient outcomes, and innovation.

Because of the timeline, the number and nature of analytic factors, and the inclusion of all physicians, nurse practitioners, and physician assistants working in Oregon (as opposed to only primary care clinicians), the findings from this study do not easily lend themselves to comparison with recent national studies (summarized in Appendix A) that project demand as a result of health care reform. Still it does appear that in general, Oregon is in a better position when compared to national projections.

Caveats and Limitations of the Study

Projecting the demand for the health care workforce is a complex methodological process that is unable to take into account all factors, such as developments in medical knowledge and social forces.^{16,17} For example, data from the 2012 Workforce Licensing Database, used to generate baseline conditions, tell us how many health care providers are practicing in Oregon but do not address whether an area has adequate supply for its population.

The projected clinician demand represents new FTEs and does not include the additional clinicians needed in Oregon to replace those who, during this time period, will be lost to attrition or outflow (e.g. retirement, reduction in practice hours, relocation out-of-state). This is important to note as 14.6 percent of Oregon's physicians, nurse practitioners, and physician assistants are 65 years of age or older and another 27.3 percent are between 55 and 64 years of age.¹⁸

Furthermore, the model does not incorporate information on settings where current clinicians practice (private clinics, safety-net sites, etc.) or the extent to which they accept different payer sources (commercial, Medicaid, Medicare). In 2012, approximately 85% of Oregon's physicians reported that they accepted new Medicaid clients with no limitations or some restrictions.¹⁹

This study also relies on current health care utilization to predict future use. Thus, if unforeseen technological advances enable clinicians to deliver more care in the same amount of time, these projections will overstate demand. Similarly, both the baseline and alternative scenario projections rely on static estimates of utilization-per-person and utilization-per-provider. If population health declines over time in ways not captured by aging, these projections will underestimate utilization per person. (If population health improves, the opposite will be true.) Additionally, a critical driver of near-future demand will come from the provision of health insurance to the previously uninsured. We have assumed—based on Oregon experience—that this population currently uses 76% of the care it would receive if covered by Medicaid. If this figure is closer to 100% then much more moderate growth is needed. However, if the population of newly-insured Oregonians requires more services than suggested by the Oregon Health Study, demand for providers will be greater than estimates here indicate.

Another limitation of these projections is that we are not able to disaggregate provider type (physician, nurse practitioner, physician assistant) by practice specialty (primary vs. non-primary care). While we are able observe the number of clinicians and their practice type in an area by

their license data, we are not able to link this information to the utilization data. As a result, we are unable to generate accurate estimates of the amount of utilization provided by clinician and practice type. Furthermore, the utilization data suggest that providers do not always fall into one practice type of care, as measured by the billed claims. For example, between 36-40 percent of clinicians would be categorized as primary care providers based on the practice specialties they report in the licensing database. In comparison, in the APAC data 71.3 percent% of claims are paid to clinicians whose taxonomies identify them as providing primary care services. This conceptual ambiguity leads to empirical difficulties when trying to match services and providers by specialty, resulting in more generalized projections.

Policy Implications

There are several policy implications that result from this study. First and foremost, these projections underscore the need for Oregon to engage proactive measures to address potential inadequacies in the supply, recruitment and retention of clinicians.

Importantly, some steps have already been taken. For example, the Oregon Health Policy Board's statutorily-created Health Care Workforce Committee was created in 2009 to coordinate efforts in Oregon to educate, recruit and retain health care professionals in order "to meet the demand created by the expansion in health care coverage, system transformation and an increasingly diverse population." This work includes the Committee's development of a statewide strategic plan to recruit primary care providers.²⁰ Additionally, the \$4 million Medicaid Primary Care Provider Loan Repayment Program, a component of Oregon's 2012 waiver from the Centers for Medicaid and Medicare Services, provides debt relief to primary care providers who commit to serving Medicaid beneficiaries in underserved areas and can be used as an incentive to recruit new or out-of-state clinicians.^{iv} This new initiative joins a handful of other federal and state programs designed to increase the primary care workforce in Oregon.^v

^{iv} More information about the Oregon Health Care Workforce Committee, the Medicaid Primary Care Provider Loan Repayment Program, and other health workforce-related efforts is available at <http://www.oregon.gov/OHA/OHPR/HPB/Pages/workforce/HealthCareWorkforceCommittee.aspx>

^v Information relating to ongoing federal and state health care workforce recruitment and retention incentive programs can be found at <http://www.oregon.gov/oha/OHPR/PCO/Pages/index.aspx> and <http://www.ohsu.edu/xd/outreach/oregon-rural-health/index.cfm>

Technical assistance and expertise for practice redesign and strategic planning is a valuable resource for clinicians who have little time to research the steps of transition into team-based care models. The Oregon Health Authority's Transformation Center and the Patient-Centered Primary Care Institute, a public-private partnership, provide technical support and learning opportunities for clinics and health systems engaging in transformation. Moreover, resources to assist with purchasing and maintenance of interoperable electronic health records, clinical decision support tools, provider order entry, and secure patient messaging systems may be necessary, especially for small or rural practices. Federal incentive payments for meaningful use for HIT are helping with technology adoption, and Oregon is developing concrete plans to support health information exchange across the state.²¹

These projections, specifically at county-level, are designed to inform adjustments to workforce capacity. They may also help policy makers and administrators direct finite resources—both public and private—for clinician education and workforce development. They may also help target recruitment and retention efforts to areas of greatest need.

The use of Oregon's APAC database in conjunction with the Oregon Health Care Workforce Licensing Database creates a unique opportunity for Oregon in projecting clinician demand specific to the state and county levels. Monitoring the balance of health service utilization and provider supply through the APAC and health professions' licensing database is extremely valuable in informing and evaluating policy responses in uncharted territory.

APPENDICES

Appendix A: Summary of Recent Studies Projecting Primary Care Clinician Demand as a Result of Health Care Reform

Several recent studies have estimated the demand for different individual and combined elements of health care services.^{22,23,24} For example, one recent study from the American Medical Association assessed that the national primary care physician workforce would need to increase by 24 percent to meet projected health care utilization demand in 2025.²⁵ Sixty-three percent of the estimated increase was due to the growth and aging of the population and 15 percent was due to insurance coverage expansion in 2014-2015.

Recently, the Robert Graham Center released a report on primary care physician workforce (defined as those specializing in family medicine, internal medicine, general practice, and geriatrics) projections to 2030 for all 50 states.²⁶ Using national data, and taking into account the newly insured population resulting from the ACA as well as the growing and aging population, the Center projected that Oregon would need a 38% increase in the primary care physician workforce by 2030 in order to maintain current utilization rates.²⁷

Looking more broadly at primary care clinicians, a study by the University of Chicago projected that between 2010 and 2014, a 2.5 percent increase (or 7,200) overall in the number of primary care physicians, physician assistants and nurse practitioners would be needed to meet the demand for increased health care services as a result of coverage expansion in the ACA.²⁸ Nationally, the geographic variation in projected increase in primary care provider demand ranged from 0.7 percent to 5 percent across states and from zero to 76 percent in primary care service areas.

Other recent studies submit that workforce shortages may be eased by integrating care teams into redesigned delivery structures and greater use of health information technologies (health IT). For example, one study estimated that up to 24 percent of a clinician's time in providing preventive, chronic and acute care to adult patients can be saved by reallocating work to other licensed and non-licensed staff, such as registered nurses, pharmacists, and medical assistants.^{29,30,31}

A recent study at Johns Hopkins University suggested that the full implementation of health IT (including interoperable electronic health records, clinical decision support, provider order entry, and web-based secure patient messaging), could reduce future national physician demand by four percent to 19 percent, depending on the level of health IT penetration.³² The authors further estimated an additional seven percent demand reduction by integrating both health IT and the delegation of care from physicians to nurse practitioners and physician assistants.

A 2013 Columbia University study focused on the need for primary care physicians into 2025, but incorporated into their projection model the supply of non-physician providers, shared practice settings and electronic health records.³³ The authors concluded that by pooling patients among two to three physicians and diverting as little as 20 percent of demand to non-physician providers and/or using electronic health records, most if not all of the projected primary care shortage could be eliminated.

Appendix B: Number of Clinician FTEs by County

The projection model identifies by county the (2012) population to clinician FTE ratio and the patient flow adjusted ratio, which captures both the location of the resident and the clinician (see Table 1). The adjusted patient flow-to-clinician ratios for Benton, Deschutes, Jackson, Lane, Marion, Multnomah, Wasco and Washington counties, home to regional health centers, reflect referral and commute patterns of patients from other counties. For example, the number of patients who obtained care in Multnomah County in 2012 is 56 percent greater than the number of residents in the county.

Determining clinician demand for Oregon's border counties represents a unique challenge as the APAC utilization data does not capture those patients who reside outside of Oregon but obtain health services within Oregon. For example, the ratios for Clackamas County are not able to count those Kaiser Permanente patients who reside in Southwest Washington but obtain hospital care at Kaiser Sunnyside Medical Center in Clackamas, Oregon.

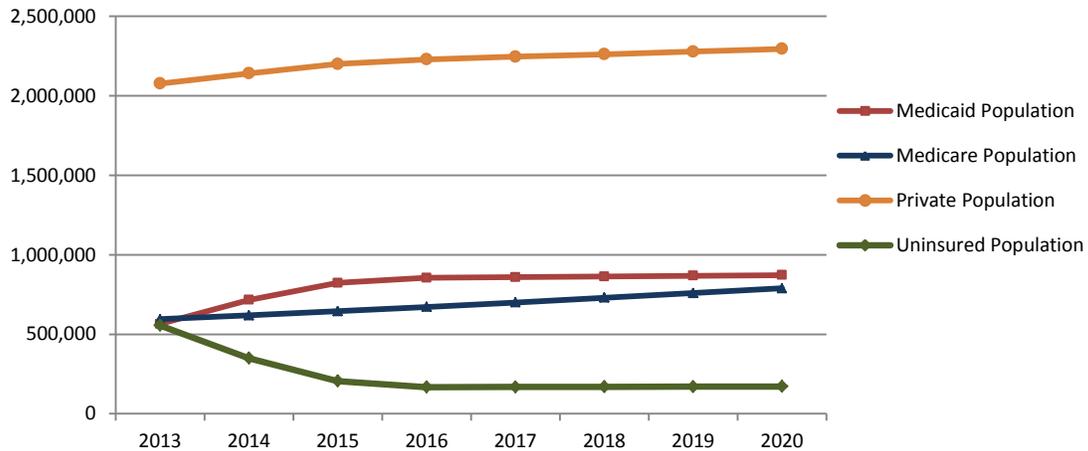
Appendix B1: Number of Clinician FTEs by County (2012)

County	Clinician FTE			Total
	Physician	NP	PA	
Baker	36.3	4.1	5.3	45.7
Benton	313.5	44.2	43.2	400.9
Clackamas	788.4	142.5	53.0	984.0
Clatsop	89.2	20.7	8.7	118.6
Columbia	15.5	15.1	9.3	39.8
Coos	144.2	31.9	7.1	183.3
Crook	15.2	3.1	6.1	24.4
Curry	31.9	12.4	4.4	48.7
Deschutes	478.1	82.3	95.6	656.0
Douglas	211.0	58.0	20.4	289.5
Gilliam	0.6	1.0	1.1	2.8
Grant	7.6	1.0	0.0	8.6
Harney	9.5	4.1	1.0	14.6
Hood River	66.4	7.1	5.1	78.7
Jackson	572.2	126.0	53.1	751.3
Jefferson	19.2	8.9	2.9	31.0
Josephine	145.7	31.7	19.1	196.5
Klamath	153.3	28.6	14.1	196.0
Lake	8.0	2.0	1.1	11.2
Lane	901.5	152.0	74.9	1,128.4
Lincoln	75.5	17.6	13.5	106.6
Linn	139.9	14.3	12.5	166.7
Malheur	66.3	12.2	16.1	94.6
Marion	713.0	121.0	69.5	903.5
Morrow	4.0	0.0	4.1	8.1
Multnomah	3,637.2	680.7	273.8	4,591.7
Polk	64.0	19.7	14.3	97.9
Sherman	0.0	1.0	0.0	1.0
Tillamook	36.5	10.3	4.1	50.9
Umatilla	118.4	34.3	14.6	167.3
Union	69.8	19.2	1.0	90.1
Wallowa	11.6	4.1	0.8	16.5
Wasco	80.2	16.5	12.1	108.8
Washington	1,287.4	243.1	117.9	1,648.4
Wheeler	0.9	1.0	1.3	3.2
Yamhill	179.8	32.3	12.9	224.9
Total	10,491.6	2,004.3	994.3	13,490.2

Appendix C: Estimated Population Changes by Insurance Coverage Type

The projection model estimates the changes in Oregon’s population by insurance coverage type. In the short term, between 2013 and 2016, Oregon’s uninsured population is estimated to decrease by 70 percent (or 388,160 individuals) as state and federal health reforms are implemented (see Figure C1). Simultaneously, Oregon’s insured population (private, Medicare, and Medicaid) is estimated to grow 16 percent (or 519,086 individuals).

Figure C1: Change in Oregon's Population by Coverage Type: 2013-2020



Over the seven years between 2013 and 2020, Oregon’s insured population (private, Medicare, and Medicaid) is estimated to grow by 22 percent while the uninsured population is estimated to decrease by 69.1 percent (see Table C1). Of particular note regarding Oregon’s aging population and the associated utilization of health care services, the Medicare population is estimated to increase from 15 percent of the total population in 2013 to 19 percent in 2020 (or by 194,245 individuals).³⁴

Table C1: Projected Change in Oregon's Population by Coverage Type: 2013-2020

Insurance Type	Values	2013	2014	2015	2016	2017	2018	2019	2020
Medicaid	Population	564,677	715,673	823,312	855,038	858,993	863,248	867,755	872,070
	Change in Population		150,996	107,640	31,726	3,955	4,255	4,507	4,314
Medicare	Population	594,454	618,670	645,189	671,420	699,539	729,367	758,983	788,699
	Change in Population		24,216	26,519	26,231	28,119	29,828	29,616	29,716
Private	Population	2,077,271	2,140,857	2,200,102	2,229,030	2,245,622	2,261,446	2,277,896	2,294,756
	Change in Population		63,586	59,245	28,928	16,593	15,824	16,449	16,860
Uninsured	Population	555,668	349,349	205,711	167,508	168,405	169,315	170,353	171,424
	Change in Population		-206,319	-143,638	-38,203	897	910	1,038	1,071
Total	Population	3,792,069	3,824,548	3,874,314	3,922,995	3,972,559	4,023,377	4,074,987	4,126,949
	Change in Population		32,479	49,766	48,681	49,564	50,818	51,610	51,962

Appendix D: Annual County-Level Clinician Projection Counts by Scenario

Annual Change in the Projected FTE Counts of Clinicians by County by Scenario: 2013 to 2020

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Baker	Physician	Baseline	36	38	39	40	41	42	43	44	
		A: HST (2% reduced util for Medicaid)	36	38	39	40	41	42	43	44	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	36	38	39	40	41	41	42	43	
		C: HIT (Saves 10% over 7 years)	36	37	38	39	40	40	41	42	
		E: Scenario B+C	36	37	38	39	39	40	40	41	
	NP	Baseline	4	4	4	5	5	5	5	5	
		A: HST (2% reduced util for Medicaid)	4	4	4	4	5	5	5	5	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	4	4	5	5	5	5	5	6	
		C: HIT (Saves 10% over 7 years)	4	4	4	4	4	5	5	5	
		E: Scenario B+C	4	4	4	5	5	5	5	5	
	PA	Baseline	5	6	6	6	6	6	6	6	7
		A: HST (2% reduced util for Medicaid)	5	6	6	6	6	6	6	6	6
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	5	6	6	6	6	7	7	7	
		C: HIT (Saves 10% over 7 years)	5	5	6	6	6	6	6	6	
		E: Scenario B+C	5	6	6	6	6	7	7	7	
Benton	Physician	Baseline	313	324	335	343	351	358	366	374	
		A: HST (2% reduced util for Medicaid)	313	324	334	341	348	355	362	369	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	313	323	332	339	344	350	355	361	
		C: HIT (Saves 10% over 7 years)	311	319	327	332	336	340	345	352	
		E: Scenario B+C	313	321	327	331	335	338	341	344	
	NP	Baseline	44	46	47	48	49	51	52	53	
		A: HST (2% reduced util for Medicaid)	44	46	47	48	49	50	51	52	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	44	47	49	51	53	55	57	59	
		C: HIT (Saves 10% over 7 years)	44	45	46	47	47	48	49	50	
		E: Scenario B+C	44	46	48	50	51	53	55	56	
	PA	Baseline	43	45	46	47	48	49	50	51	
		A: HST (2% reduced util for Medicaid)	43	45	46	47	48	49	50	51	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	43	45	48	50	52	54	56	58	
		C: HIT (Saves 10% over 7 years)	43	44	45	46	46	47	47	48	
		E: Scenario B+C	43	45	47	49	50	52	53	55	
Clackamas	Physician	Baseline	788	810	833	850	866	882	898	914	
		A: HST (2% reduced util for Medicaid)	788	807	828	843	857	872	886	901	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	788	807	826	839	851	863	875	887	
		C: HIT (Saves 10% over 7 years)	781	796	811	821	829	837	845	860	
		E: Scenario B+C	788	801	814	822	827	833	839	844	
	NP	Baseline	143	146	151	154	156	159	162	165	
		A: HST (2% reduced util for Medicaid)	142	146	150	152	155	158	160	163	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	143	149	156	162	167	173	179	185	
		C: HIT (Saves 10% over 7 years)	141	144	147	148	150	151	153	156	
		E: Scenario B+C	143	148	154	158	163	167	172	176	
	PA	Baseline	53	55	56	57	58	59	60	61	
		A: HST (2% reduced util for Medicaid)	53	54	56	57	58	59	60	61	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	53	55	58	60	62	64	67	69	
		C: HIT (Saves 10% over 7 years)	53	54	55	55	56	56	57	58	
		E: Scenario B+C	53	55	57	59	61	62	64	66	

County	Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Clatsop	Physician	Baseline	89	92	95	98	101	104	106	109
		A: HST (2% reduced util for Medicaid)	89	92	95	97	100	103	105	108
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	89	92	94	96	98	101	103	105
		C: HIT (Saves 10% over 7 years)	88	91	93	95	96	98	100	103
		E: Scenario B+C	89	91	93	94	96	97	99	100
	NP	Baseline	21	21	22	23	23	24	25	25
		A: HST (2% reduced util for Medicaid)	21	21	22	23	23	24	24	25
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	21	22	23	24	25	26	27	28
		C: HIT (Saves 10% over 7 years)	21	21	22	22	22	23	23	24
		E: Scenario B+C	21	22	23	23	24	25	26	27
	PA	Baseline	9	9	9	10	10	10	10	11
		A: HST (2% reduced util for Medicaid)	9	9	9	10	10	10	10	11
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	9	9	10	10	11	11	11	12
		C: HIT (Saves 10% over 7 years)	9	9	9	9	9	10	10	10
		E: Scenario B+C	9	9	10	10	10	11	11	11
Columbia	Physician	Baseline	15	16	17	17	17	18	18	19
		A: HST (2% reduced util for Medicaid)	15	16	16	17	17	17	18	18
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	15	16	16	16	16	15	15	15
		C: HIT (Saves 10% over 7 years)	15	16	16	17	17	17	17	17
		E: Scenario B+C	15	16	16	15	15	15	15	14
	NP	Baseline	15	16	16	17	17	17	18	18
		A: HST (2% reduced util for Medicaid)	15	16	16	16	17	17	17	17
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	15	16	17	18	18	19	20	20
		C: HIT (Saves 10% over 7 years)	15	15	16	16	16	17	17	17
		E: Scenario B+C	15	16	17	17	18	18	19	19
	PA	Baseline	9	10	10	10	11	11	11	11
		A: HST (2% reduced util for Medicaid)	9	10	10	10	10	10	11	11
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	9	10	10	11	11	12	12	13
		C: HIT (Saves 10% over 7 years)	9	10	10	10	10	10	10	11
		E: Scenario B+C	9	10	10	11	11	11	12	12
Coos	Physician	Baseline	144	151	157	162	167	172	177	182
		A: HST (2% reduced util for Medicaid)	144	150	156	161	166	171	176	181
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	144	150	156	160	164	168	172	176
		C: HIT (Saves 10% over 7 years)	143	148	153	157	160	163	167	172
		E: Scenario B+C	144	149	153	157	159	162	165	168
	NP	Baseline	32	33	35	36	37	38	39	40
		A: HST (2% reduced util for Medicaid)	32	33	35	36	37	38	39	40
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	32	34	36	38	40	41	43	45
		C: HIT (Saves 10% over 7 years)	32	33	34	35	35	36	37	38
		E: Scenario B+C	32	34	35	37	38	40	41	43
	PA	Baseline	7	7	8	8	8	8	9	9
		A: HST (2% reduced util for Medicaid)	7	7	8	8	8	8	9	9
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	7	8	8	8	9	9	10	10
		C: HIT (Saves 10% over 7 years)	7	7	8	8	8	8	8	8
		E: Scenario B+C	7	7	8	8	9	9	9	10

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Crook	Physician	Baseline	15	16	16	17	17	18	18	19	
		A: HST (2% reduced util for Medicaid)	15	16	16	17	17	17	18	18	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	15	16	16	16	17	17	17	17	
		C: HIT (Saves 10% over 7 years)	15	15	16	16	17	17	17	18	
	D: Scenario B+C	15	15	16	16	16	16	16	16	17	
	NP	Baseline	3	3	3	3	4	4	4	4	
		A: HST (2% reduced util for Medicaid)	3	3	3	3	4	4	4	4	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	3	3	4	4	4	4	4	4	
		C: HIT (Saves 10% over 7 years)	3	3	3	3	3	4	4	4	
	D: Scenario B+C	3	3	3	4	4	4	4	4	4	
	PA	Baseline	6	6	7	7	7	7	7	7	8
		A: HST (2% reduced util for Medicaid)	6	6	7	7	7	7	7	7	7
B: Team Care (Increase NP+PA:Physician ratio by 12%)		6	6	7	7	7	8	8	8		
C: HIT (Saves 10% over 7 years)		6	6	6	7	7	7	7	7		
D: Scenario B+C	6	6	7	7	7	8	8	8	8		
Curry	Physician	Baseline	32	33	35	36	37	38	40	41	
		A: HST (2% reduced util for Medicaid)	32	33	35	36	37	38	39	40	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	32	33	34	35	36	37	38	38	
		C: HIT (Saves 10% over 7 years)	32	33	34	35	36	37	37	39	
	D: Scenario B+C	32	33	34	34	35	35	36	37		
	NP	Baseline	12	13	14	14	14	15	15	16	
		A: HST (2% reduced util for Medicaid)	12	13	13	14	14	15	15	16	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	12	13	14	15	15	16	17	18	
		C: HIT (Saves 10% over 7 years)	12	13	13	14	14	14	15	15	
	D: Scenario B+C	12	13	14	14	15	16	16	17		
	PA	Baseline	4	5	5	5	5	5	5	6	
		A: HST (2% reduced util for Medicaid)	4	5	5	5	5	5	5	6	
B: Team Care (Increase NP+PA:Physician ratio by 12%)		4	5	5	5	5	6	6	6		
C: HIT (Saves 10% over 7 years)		4	5	5	5	5	5	5	5		
D: Scenario B+C	4	5	5	5	5	6	6	6			
Deschutes	Physician	Baseline	478	496	514	527	540	553	566	579	
		A: HST (2% reduced util for Medicaid)	478	494	510	522	533	544	556	568	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	478	493	507	517	526	535	544	553	
		C: HIT (Saves 10% over 7 years)	474	487	500	509	517	525	533	545	
	D: Scenario B+C	478	489	500	506	511	517	522	527		
	NP	Baseline	82	85	88	91	93	95	97	100	
		A: HST (2% reduced util for Medicaid)	82	85	88	90	92	94	96	98	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	82	87	91	95	99	103	107	112	
		C: HIT (Saves 10% over 7 years)	82	84	86	88	89	90	92	94	
	D: Scenario B+C	82	86	90	93	97	100	103	106		
	PA	Baseline	96	99	103	105	108	110	113	116	
		A: HST (2% reduced util for Medicaid)	96	99	102	104	107	109	111	114	
B: Team Care (Increase NP+PA:Physician ratio by 12%)		96	101	106	111	115	120	125	130		
C: HIT (Saves 10% over 7 years)		95	97	100	102	103	105	106	109		
D: Scenario B+C	96	100	105	108	112	116	120	123			

County	Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Douglas	Physician	Baseline	211	223	234	240	245	250	255	260
		A: HST (2% reduced util for Medicaid)	211	221	230	234	238	241	245	248
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	211	222	231	236	239	242	246	249
		C: HIT (Saves 10% over 7 years)	209	220	228	232	235	238	240	245
		D: Scenario B+C	211	220	228	231	232	234	235	237
	NP	Baseline	58	61	64	66	67	69	70	72
		A: HST (2% reduced util for Medicaid)	58	61	63	64	65	66	67	68
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	58	63	67	70	72	75	77	80
		C: HIT (Saves 10% over 7 years)	58	60	63	64	65	65	66	67
		D: Scenario B+C	58	62	66	68	70	72	74	76
	PA	Baseline	20	22	23	23	24	24	25	25
		A: HST (2% reduced util for Medicaid)	20	21	22	23	23	23	24	24
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	20	22	23	24	25	26	27	28
C: HIT (Saves 10% over 7 years)		20	21	22	22	23	23	23	24	
D: Scenario B+C		20	22	23	24	25	25	26	27	
Gilliam	Physician	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	0	0
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	0	0
	NP	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
	PA	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	2
C: HIT (Saves 10% over 7 years)		1	1	1	1	1	1	1	1	
D: Scenario B+C		1	1	1	1	1	1	1	1	
Grant	Physician	Baseline	8	8	8	9	9	9	9	9
		A: HST (2% reduced util for Medicaid)	8	8	8	8	9	9	9	9
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	8	8	8	8	9	9	9	9
		C: HIT (Saves 10% over 7 years)	8	8	8	8	8	8	9	9
		D: Scenario B+C	8	8	8	8	8	9	9	9
	NP	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
	PA	Baseline	0	0	0	0	0	0	0	0
		A: HST (2% reduced util for Medicaid)	0	0	0	0	0	0	0	0
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	0	0	0	0	0	0	0	0
C: HIT (Saves 10% over 7 years)		0	0	0	0	0	0	0	0	
D: Scenario B+C		0	0	0	0	0	0	0	0	

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Harney	Physician	Baseline	9	10	10	11	11	11	11	11
		A: HST (2% reduced util for Medicaid)	9	10	10	10	10	11	11	11
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	9	10	10	10	10	11	11	11
		C: HIT (Saves 10% over 7 years)	9	10	10	10	10	10	11	11
		D: Scenario B+C	9	10	10	10	10	10	10	10
	NP	Baseline	4	4	4	5	5	5	5	5
		A: HST (2% reduced util for Medicaid)	4	4	4	4	4	5	5	5
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	4	4	5	5	5	5	5	6
		C: HIT (Saves 10% over 7 years)	4	4	4	4	4	4	5	5
		D: Scenario B+C	4	4	5	5	5	5	5	5
	PA	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
Hood River	Physician	Baseline	66	67	68	70	71	73	75	76
		A: HST (2% reduced util for Medicaid)	66	67	68	69	71	72	74	75
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	66	67	68	69	70	72	73	74
		C: HIT (Saves 10% over 7 years)	66	66	66	67	68	69	70	72
		D: Scenario B+C	66	66	67	68	68	69	70	71
	NP	Baseline	7	7	7	7	8	8	8	8
		A: HST (2% reduced util for Medicaid)	7	7	7	7	8	8	8	8
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	7	7	8	8	8	9	9	9
		C: HIT (Saves 10% over 7 years)	7	7	7	7	7	7	8	8
		D: Scenario B+C	7	7	7	8	8	8	8	9
	PA	Baseline	5	5	5	5	5	6	6	6
		A: HST (2% reduced util for Medicaid)	5	5	5	5	5	6	6	6
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	5	5	5	6	6	6	6	7
		C: HIT (Saves 10% over 7 years)	5	5	5	5	5	5	5	6
		D: Scenario B+C	5	5	5	6	6	6	6	6
Jackson	Physician	Baseline	572	594	615	631	647	663	679	695
		A: HST (2% reduced util for Medicaid)	572	590	609	624	637	651	666	680
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	572	590	608	621	633	645	657	669
		C: HIT (Saves 10% over 7 years)	567	583	599	610	619	629	639	655
		D: Scenario B+C	572	586	600	608	615	623	630	637
	NP	Baseline	126	131	135	139	142	146	150	153
		A: HST (2% reduced util for Medicaid)	126	130	134	137	140	143	147	150
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	126	133	140	146	152	158	165	171
		C: HIT (Saves 10% over 7 years)	125	128	132	134	136	139	141	144
		D: Scenario B+C	126	132	138	143	148	153	158	163
	PA	Baseline	53	55	57	59	60	62	63	65
		A: HST (2% reduced util for Medicaid)	53	55	57	58	59	60	62	63
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	53	56	59	62	64	67	70	72
		C: HIT (Saves 10% over 7 years)	53	54	56	57	58	58	59	61
		D: Scenario B+C	53	56	58	60	62	65	67	69

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Jefferson	Physician	Baseline	19	19	20	20	20	21	21	21
		A: HST (2% reduced util for Medicaid)	19	19	19	19	19	20	20	20
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	19	19	19	19	20	20	20	20
		C: HIT (Saves 10% over 7 years)	19	19	19	19	20	20	20	20
		D: Scenario B+C	19	19	19	19	19	19	19	19
	NP	Baseline	9	9	9	9	9	10	10	10
		A: HST (2% reduced util for Medicaid)	9	9	9	9	9	9	9	9
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	9	9	9	10	10	10	11	11
		C: HIT (Saves 10% over 7 years)	9	9	9	9	9	9	9	9
		D: Scenario B+C	9	9	9	10	10	10	10	11
	PA	Baseline	3	3	3	3	3	3	3	3
		A: HST (2% reduced util for Medicaid)	3	3	3	3	3	3	3	3
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	3	3	3	3	3	3	3	4
		C: HIT (Saves 10% over 7 years)	3	3	3	3	3	3	3	3
		D: Scenario B+C	3	3	3	3	3	3	3	3
Josephine	Physician	Baseline	146	152	159	164	168	173	177	182
		A: HST (2% reduced util for Medicaid)	146	152	158	162	166	170	174	179
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	146	151	157	161	164	168	171	174
		C: HIT (Saves 10% over 7 years)	144	150	155	158	161	164	167	171
		D: Scenario B+C	146	150	155	157	159	162	164	166
	NP	Baseline	32	33	35	36	37	38	39	40
		A: HST (2% reduced util for Medicaid)	32	33	34	35	36	37	38	39
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	32	34	36	37	39	41	43	44
		C: HIT (Saves 10% over 7 years)	31	33	34	34	35	36	36	37
		D: Scenario B+C	32	33	35	37	38	39	41	42
	PA	Baseline	19	20	21	22	22	23	23	24
		A: HST (2% reduced util for Medicaid)	19	20	21	21	22	22	23	23
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	19	20	22	23	24	25	26	27
		C: HIT (Saves 10% over 7 years)	19	20	20	21	21	22	22	23
		D: Scenario B+C	19	20	21	22	23	24	25	26
Klamath	Physician	Baseline	153	159	164	166	168	169	171	172
		A: HST (2% reduced util for Medicaid)	153	157	161	162	163	163	164	165
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	153	158	162	164	164	165	166	166
		C: HIT (Saves 10% over 7 years)	152	156	159	160	160	161	161	162
		D: Scenario B+C	153	157	160	160	160	159	159	159
	NP	Baseline	29	30	30	31	31	32	32	32
		A: HST (2% reduced util for Medicaid)	29	29	30	30	30	30	31	31
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	29	30	32	33	33	34	35	36
		C: HIT (Saves 10% over 7 years)	28	29	30	30	30	30	30	30
		D: Scenario B+C	29	30	31	32	32	33	34	34
	PA	Baseline	14	15	15	15	15	16	16	16
		A: HST (2% reduced util for Medicaid)	14	14	15	15	15	15	15	15
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	14	15	16	16	16	17	17	18
		C: HIT (Saves 10% over 7 years)	14	14	15	15	15	15	15	15
		D: Scenario B+C	14	15	15	16	16	16	17	17

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Lake	Physician	Baseline	8	8	9	9	9	9	9	10
		A: HST (2% reduced util for Medicaid)	8	8	9	9	9	9	9	9
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	8	8	9	9	9	9	9	9
		C: HIT (Saves 10% over 7 years)	8	8	8	9	9	9	9	9
		D: Scenario B+C	8	8	8	9	9	9	9	9
	NP	Baseline	2	2	2	2	2	2	2	2
		A: HST (2% reduced util for Medicaid)	2	2	2	2	2	2	2	2
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	2	2	2	2	2	3	3	3
		C: HIT (Saves 10% over 7 years)	2	2	2	2	2	2	2	2
		D: Scenario B+C	2	2	2	2	2	2	3	3
	PA	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	2
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
Lane	Physician	Baseline	901	933	965	988	1,010	1,032	1,054	1,076
		A: HST (2% reduced util for Medicaid)	901	929	956	976	995	1,014	1,033	1,053
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	901	929	957	976	992	1,010	1,027	1,044
		C: HIT (Saves 10% over 7 years)	894	917	940	955	967	980	992	1,013
		D: Scenario B+C	901	923	943	955	965	975	985	994
	NP	Baseline	152	157	163	167	170	174	178	181
		A: HST (2% reduced util for Medicaid)	152	157	161	165	168	171	174	177
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	152	160	168	175	182	189	196	203
		C: HIT (Saves 10% over 7 years)	151	155	158	161	163	165	167	171
		D: Scenario B+C	152	159	166	172	177	182	188	193
	PA	Baseline	75	78	80	82	84	86	88	89
		A: HST (2% reduced util for Medicaid)	75	77	80	81	83	84	86	87
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	75	79	83	86	90	93	97	100
		C: HIT (Saves 10% over 7 years)	74	76	78	79	80	81	82	84
		D: Scenario B+C	75	78	82	85	87	90	93	95
Lincoln	Physician	Baseline	76	79	82	84	86	89	91	94
		A: HST (2% reduced util for Medicaid)	75	78	81	83	86	88	90	92
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	76	78	80	82	84	86	87	89
		C: HIT (Saves 10% over 7 years)	75	77	80	81	83	84	86	88
		D: Scenario B+C	76	77	79	81	82	83	84	85
	NP	Baseline	18	18	19	20	20	21	21	22
		A: HST (2% reduced util for Medicaid)	18	18	19	19	20	20	21	21
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	18	19	20	21	21	22	23	24
		C: HIT (Saves 10% over 7 years)	17	18	18	19	19	20	20	21
		D: Scenario B+C	18	18	19	20	21	22	22	23
	PA	Baseline	14	14	15	15	15	16	16	17
		A: HST (2% reduced util for Medicaid)	14	14	15	15	15	16	16	17
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	14	14	15	16	17	17	18	19
		C: HIT (Saves 10% over 7 years)	13	14	14	15	15	15	15	16
		D: Scenario B+C	14	14	15	16	16	17	17	18

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Linn	Physician	Baseline	140	145	150	154	157	161	165	169
		A: HST (2% reduced util for Medicaid)	140	144	149	152	156	159	163	167
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	140	144	149	152	155	159	162	165
		C: HIT (Saves 10% over 7 years)	139	142	146	148	151	153	156	159
		D: Scenario B+C	140	143	147	149	151	153	155	157
	NP	Baseline	14	15	15	16	16	17	17	17
		A: HST (2% reduced util for Medicaid)	14	15	15	16	16	16	17	17
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	14	15	16	17	17	18	19	19
		C: HIT (Saves 10% over 7 years)	14	15	15	15	15	16	16	16
		D: Scenario B+C	14	15	16	16	17	17	18	18
	PA	Baseline	12	13	13	14	14	14	15	15
		A: HST (2% reduced util for Medicaid)	12	13	13	14	14	14	15	15
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	12	13	14	14	15	16	16	17
		C: HIT (Saves 10% over 7 years)	12	13	13	13	13	14	14	14
		D: Scenario B+C	12	13	14	14	15	15	16	16
Malheur	Physician	Baseline	66	67	69	70	72	73	75	76
		A: HST (2% reduced util for Medicaid)	66	67	68	69	70	71	73	74
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	66	67	68	69	70	71	72	73
		C: HIT (Saves 10% over 7 years)	66	66	67	68	69	70	70	72
		D: Scenario B+C	66	66	67	67	68	68	69	69
	NP	Baseline	12	12	13	13	13	14	14	14
		A: HST (2% reduced util for Medicaid)	12	12	13	13	13	13	13	14
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	12	13	13	14	14	15	15	16
		C: HIT (Saves 10% over 7 years)	12	12	12	13	13	13	13	13
		D: Scenario B+C	12	13	13	13	14	14	15	15
	PA	Baseline	16	16	17	17	17	18	18	19
		A: HST (2% reduced util for Medicaid)	16	16	17	17	17	17	18	18
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	16	17	17	18	19	19	20	21
		C: HIT (Saves 10% over 7 years)	16	16	16	16	17	17	17	18
		D: Scenario B+C	16	17	17	18	18	19	19	20
Marion	Physician	Baseline	713	726	743	758	773	788	804	820
		A: HST (2% reduced util for Medicaid)	712	722	735	747	759	772	785	798
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	713	723	736	747	759	770	782	794
		C: HIT (Saves 10% over 7 years)	707	714	723	732	740	749	757	772
		D: Scenario B+C	713	718	726	732	738	744	750	756
	NP	Baseline	121	123	126	129	131	134	136	139
		A: HST (2% reduced util for Medicaid)	121	123	125	127	129	131	133	135
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	121	125	130	135	140	145	150	156
		C: HIT (Saves 10% over 7 years)	120	121	123	124	126	127	128	131
		D: Scenario B+C	121	124	128	132	136	140	144	148
	PA	Baseline	69	71	72	74	75	77	78	80
		A: HST (2% reduced util for Medicaid)	69	70	72	73	74	75	77	78
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	69	72	75	78	80	83	86	90
		C: HIT (Saves 10% over 7 years)	69	70	71	71	72	73	74	75
		D: Scenario B+C	69	71	74	76	78	81	83	85

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Morrow	Physician	Baseline	4	4	4	4	4	4	5	5	
		A: HST (2% reduced util for Medicaid)	4	4	4	4	4	4	4	4	4
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	4	4	4	4	4	4	4	4	4
		C: HIT (Saves 10% over 7 years)	4	4	4	4	4	4	4	4	4
		D: Scenario B+C	4	4	4	4	4	4	4	4	4
	NP	Baseline	0	0	0	0	0	0	0	0	0
		A: HST (2% reduced util for Medicaid)	0	0	0	0	0	0	0	0	0
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	0	0	0	0	0	0	0	0	0
		C: HIT (Saves 10% over 7 years)	0	0	0	0	0	0	0	0	0
		D: Scenario B+C	0	0	0	0	0	0	0	0	0
	PA	Baseline	4	4	4	4	4	5	5	5	5
		A: HST (2% reduced util for Medicaid)	4	4	4	4	4	4	4	4	5
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	4	4	4	5	5	5	5	5	5
		C: HIT (Saves 10% over 7 years)	4	4	4	4	4	4	4	4	4
		D: Scenario B+C	4	4	4	4	5	5	5	5	5
Multnomah	Physician	Baseline	3,637	3,714	3,800	3,871	3,939	4,009	4,080	4,151	
		A: HST (2% reduced util for Medicaid)	3,634	3,695	3,767	3,825	3,882	3,941	4,000	4,060	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	3,637	3,697	3,766	3,819	3,868	3,919	3,970	4,020	
		C: HIT (Saves 10% over 7 years)	3,605	3,649	3,702	3,739	3,772	3,807	3,842	3,908	
		D: Scenario B+C	3,637	3,671	3,713	3,739	3,761	3,784	3,806	3,829	
	NP	Baseline	681	695	711	724	737	750	764	777	
		A: HST (2% reduced util for Medicaid)	680	692	705	716	727	738	749	760	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	681	707	736	762	788	815	842	870	
		C: HIT (Saves 10% over 7 years)	675	683	693	700	706	712	719	731	
		D: Scenario B+C	681	702	725	746	766	787	807	829	
	PA	Baseline	274	280	286	291	297	302	307	312	
		A: HST (2% reduced util for Medicaid)	274	278	284	288	292	297	301	306	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	274	284	296	306	317	328	339	350	
		C: HIT (Saves 10% over 7 years)	271	275	279	281	284	287	289	294	
		D: Scenario B+C	274	282	292	300	308	316	325	333	
Polk	Physician	Baseline	64	65	66	67	68	70	71	72	
		A: HST (2% reduced util for Medicaid)	64	64	65	65	66	67	67	68	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	64	64	65	65	66	66	67	67	
		C: HIT (Saves 10% over 7 years)	63	64	64	65	66	66	67	68	
		D: Scenario B+C	64	64	64	64	64	64	64	64	
	NP	Baseline	20	20	20	21	21	21	22	22	
		A: HST (2% reduced util for Medicaid)	20	20	20	20	20	20	21	21	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	20	20	21	22	22	23	24	25	
		C: HIT (Saves 10% over 7 years)	19	20	20	20	20	20	20	21	
		D: Scenario B+C	20	20	21	21	22	22	23	24	
	PA	Baseline	14	15	15	15	15	16	16	16	
		A: HST (2% reduced util for Medicaid)	14	14	14	15	15	15	15	15	
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	14	15	15	16	16	17	17	18	
		C: HIT (Saves 10% over 7 years)	14	14	14	15	15	15	15	15	
		D: Scenario B+C	14	15	15	15	16	16	17	17	

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Sherman	Physician	Baseline	0	0	0	0	0	0	0	0
		A: HST (2% reduced util for Medicaid)	0	0	0	0	0	0	0	0
		B: Team Care (Increase NP+PA:Physician ratio by 12%)								
		C: HIT (Saves 10% over 7 years)	0	0	0	0	0	0	0	0
		D: Scenario B+C								
	NP	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)								
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C								
	PA	Baseline	0	0	0	0	0	0	0	0
		A: HST (2% reduced util for Medicaid)	0	0	0	0	0	0	0	0
B: Team Care (Increase NP+PA:Physician ratio by 12%)										
C: HIT (Saves 10% over 7 years)		0	0	0	0	0	0	0	0	
	D: Scenario B+C									
Tillamook	Physician	Baseline	37	38	39	41	42	43	45	46
		A: HST (2% reduced util for Medicaid)	37	38	39	40	42	43	44	45
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	37	38	39	40	41	42	43	44
		C: HIT (Saves 10% over 7 years)	36	37	38	39	40	41	42	43
		D: Scenario B+C	37	37	38	39	40	40	41	42
	NP	Baseline	10	11	11	11	12	12	13	13
		A: HST (2% reduced util for Medicaid)	10	11	11	11	12	12	12	13
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	10	11	11	12	13	13	14	14
		C: HIT (Saves 10% over 7 years)	10	10	11	11	11	12	12	12
		D: Scenario B+C	10	11	11	12	12	13	13	14
	PA	Baseline	4	4	4	5	5	5	5	5
		A: HST (2% reduced util for Medicaid)	4	4	4	5	5	5	5	5
B: Team Care (Increase NP+PA:Physician ratio by 12%)		4	4	5	5	5	5	6	6	
C: HIT (Saves 10% over 7 years)		4	4	4	4	5	5	5	5	
	D: Scenario B+C	4	4	5	5	5	5	5	5	
Umatilla	Physician	Baseline	118	120	121	123	125	126	128	129
		A: HST (2% reduced util for Medicaid)	118	119	120	121	122	123	124	126
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	118	119	120	120	121	122	122	123
		C: HIT (Saves 10% over 7 years)	117	117	118	119	119	120	120	122
		D: Scenario B+C	118	118	118	118	118	117	117	117
	NP	Baseline	34	35	35	36	36	37	37	38
		A: HST (2% reduced util for Medicaid)	34	34	35	35	35	36	36	36
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	34	35	36	37	39	40	41	42
		C: HIT (Saves 10% over 7 years)	34	34	34	34	35	35	35	35
		D: Scenario B+C	34	35	36	37	38	38	39	40
	PA	Baseline	15	15	15	15	15	16	16	16
		A: HST (2% reduced util for Medicaid)	15	15	15	15	15	15	15	15
B: Team Care (Increase NP+PA:Physician ratio by 12%)		15	15	15	16	16	17	17	18	
C: HIT (Saves 10% over 7 years)		14	14	15	15	15	15	15	15	
	D: Scenario B+C	15	15	15	16	16	16	17	17	

County	Scenario	2013	2014	2015	2016	2017	2018	2019	2020	
Union	Physician	Baseline	70	73	75	77	78	79	80	81
		A: HST (2% reduced util for Medicaid)	70	72	75	76	77	78	79	79
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	70	72	74	76	76	77	78	78
		C: HIT (Saves 10% over 7 years)	69	71	73	74	75	75	75	77
		D: Scenario B+C	70	72	73	74	74	74	75	75
	NP	Baseline	19	20	21	21	21	22	22	22
		A: HST (2% reduced util for Medicaid)	19	20	21	21	21	21	22	22
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	19	20	21	22	23	24	24	25
		C: HIT (Saves 10% over 7 years)	19	20	20	20	21	21	21	21
		D: Scenario B+C	19	20	21	22	22	23	23	24
	PA	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
Walla Walla	Physician	Baseline	12	12	13	13	13	14	14	15
		A: HST (2% reduced util for Medicaid)	12	12	12	13	13	14	14	14
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	12	12	12	13	13	13	13	14
		C: HIT (Saves 10% over 7 years)	11	12	12	12	13	13	13	14
		D: Scenario B+C	12	12	12	12	13	13	13	13
	NP	Baseline	4	4	4	5	5	5	5	5
		A: HST (2% reduced util for Medicaid)	4	4	4	5	5	5	5	5
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	4	4	5	5	5	5	6	6
		C: HIT (Saves 10% over 7 years)	4	4	4	4	5	5	5	5
		D: Scenario B+C	4	4	5	5	5	5	5	6
	PA	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
Wasco	Physician	Baseline	80	82	83	85	87	89	91	93
		A: HST (2% reduced util for Medicaid)	80	81	82	84	85	87	89	91
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	80	81	82	84	85	86	88	89
		C: HIT (Saves 10% over 7 years)	79	80	81	82	83	85	86	88
		D: Scenario B+C	80	80	81	82	83	83	84	85
	NP	Baseline	17	17	17	18	18	18	19	19
		A: HST (2% reduced util for Medicaid)	17	17	17	17	18	18	18	19
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	17	17	18	18	19	20	21	22
		C: HIT (Saves 10% over 7 years)	16	17	17	17	17	17	18	18
		D: Scenario B+C	17	17	18	18	19	19	20	20
	PA	Baseline	12	12	13	13	13	13	14	14
		A: HST (2% reduced util for Medicaid)	12	12	12	13	13	13	13	14
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	12	13	13	14	14	15	15	16
		C: HIT (Saves 10% over 7 years)	12	12	12	12	13	13	13	13
		D: Scenario B+C	12	12	13	13	14	14	15	15

County		Scenario	2013	2014	2015	2016	2017	2018	2019	2020
Washington	Physician	Baseline	1,287	1,313	1,342	1,367	1,390	1,414	1,438	1,462
		A: HST (2% reduced util for Medicaid)	1,287	1,309	1,335	1,356	1,377	1,399	1,420	1,442
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1,287	1,306	1,329	1,347	1,363	1,380	1,396	1,413
		C: HIT (Saves 10% over 7 years)	1,276	1,290	1,308	1,320	1,331	1,342	1,354	1,377
		D: Scenario B+C	1,287	1,297	1,311	1,319	1,325	1,332	1,339	1,346
	NP	Baseline	243	248	253	258	262	267	271	276
		A: HST (2% reduced util for Medicaid)	243	247	252	256	260	264	268	272
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	243	252	262	271	280	290	299	309
		C: HIT (Saves 10% over 7 years)	241	244	247	249	251	253	256	260
		D: Scenario B+C	243	250	258	266	273	280	287	294
	PA	Baseline	118	120	123	125	127	130	132	134
		A: HST (2% reduced util for Medicaid)	118	120	122	124	126	128	130	132
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	118	122	127	132	136	141	145	150
		C: HIT (Saves 10% over 7 years)	117	118	120	121	122	123	124	126
		D: Scenario B+C	118	121	125	129	132	136	139	143
Wheeler	Physician	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
	NP	Baseline	1	1	1	1	1	1	1	1
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	1	1	1
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	1	1	1	1	1
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	1
		D: Scenario B+C	1	1	1	1	1	1	1	1
	PA	Baseline	1	1	1	1	1	2	2	2
		A: HST (2% reduced util for Medicaid)	1	1	1	1	1	2	2	2
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	1	1	1	2	2	2	2	2
		C: HIT (Saves 10% over 7 years)	1	1	1	1	1	1	1	2
		D: Scenario B+C	1	1	1	1	2	2	2	2
Yamhill	Physician	Baseline	180	183	187	191	195	199	204	208
		A: HST (2% reduced util for Medicaid)	180	182	185	189	192	196	199	203
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	180	182	186	189	192	195	198	202
		C: HIT (Saves 10% over 7 years)	178	180	182	185	187	189	192	196
		D: Scenario B+C	180	181	183	185	187	188	190	192
	NP	Baseline	32	33	34	34	35	36	37	37
		A: HST (2% reduced util for Medicaid)	32	33	33	34	35	35	36	37
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	32	33	35	36	38	39	40	42
		C: HIT (Saves 10% over 7 years)	32	32	33	33	34	34	34	35
		D: Scenario B+C	32	33	34	35	36	38	39	40
	PA	Baseline	13	13	13	14	14	14	15	15
		A: HST (2% reduced util for Medicaid)	13	13	13	13	14	14	14	15
		B: Team Care (Increase NP+PA:Physician ratio by 12%)	13	13	14	14	15	15	16	17
		C: HIT (Saves 10% over 7 years)	13	13	13	13	13	14	14	14
		D: Scenario B+C	13	13	14	14	14	15	15	16

Appendix E: County Ranking by Projected Percentage Change in the Physician, Nurse Practitioner, and Physician Assistant Workforce by Scenario: 2013-2020

**Appendix E1:
County Ranking by Projected Percentage Change in the Physician Workforce by Scenario: 2013-2020**

Baseline		A: HST (2% reduced util for Medicaid)		B: Team Care (Increase NP+PA:Physician ratio by 12%)		C: HIT (Saves 10% over 7 years)		D: Scenario B+C	
County	% Change	County	% Change	County	% Change	County	% Change	County	% Change
Curry	28.50%	Curry	26.96%	Coos	22.31%	Curry	22.07%	Coos	16.49%
Wheeler	26.59%	Wheeler	26.07%	Grant	21.23%	Wheeler	20.26%	Grant	15.46%
Coos	26.42%	Coos	25.26%	Curry	20.38%	Coos	20.09%	Curry	14.65%
Tillamook	25.65%	Wallowa	24.32%	Josephine	19.72%	Tillamook	19.36%	Josephine	14.02%
Wallowa	25.49%	Tillamook	24.17%	Tillamook	19.72%	Wallowa	19.21%	Tillamook	14.02%
Josephine	24.95%	Josephine	22.66%	Wallowa	19.09%	Josephine	18.70%	Wallowa	13.42%
Lincoln	24.13%	Lincoln	22.44%	Baker	18.64%	Lincoln	17.92%	Baker	12.99%
Crook	23.69%	Clatsop	21.15%	Linn	18.12%	Crook	17.50%	Linn	12.49%
Douglas	23.35%	Crook	20.57%	Lincoln	18.00%	Douglas	17.18%	Lincoln	12.38%
Grant	23.23%	Baker	20.24%	Douglas	17.85%	Grant	17.06%	Douglas	12.24%
Clatsop	22.52%	Grant	19.48%	Clatsop	17.66%	Clatsop	16.39%	Clatsop	12.06%
Baker	22.46%	Linn	19.12%	Jackson	16.96%	Baker	16.33%	Jackson	11.39%
Jackson	21.53%	Jackson	18.98%	Lane	15.78%	Jackson	15.45%	Lane	10.26%
Deschutes	21.06%	Deschutes	18.91%	Deschutes	15.66%	Deschutes	15.01%	Deschutes	10.15%
Harney	21.03%	Douglas	17.89%	Benton	15.20%	Harney	14.97%	Benton	9.72%
Linn	20.90%	Benton	17.85%	Crook	14.60%	Linn	14.85%	Crook	9.15%
Gilliam	20.18%	Gilliam	17.68%	Lake	13.97%	Gilliam	14.17%	Lake	8.54%
Columbia	20.09%	Lane	16.87%	Harney	13.24%	Columbia	14.08%	Harney	7.85%
Lake	19.68%	Columbia	16.24%	Clackamas	12.46%	Lake	13.70%	Clackamas	7.11%
Lane	19.38%	Harney	15.60%	Union	12.38%	Lane	13.41%	Union	7.03%
Benton	19.19%	Lake	15.44%	Yamhill	12.18%	Benton	13.23%	Yamhill	6.84%
Union	16.44%	Clackamas	14.33%	Hood River	12.16%	Union	10.61%	Hood River	6.82%
Wasco	16.21%	Union	13.88%	Marion	11.33%	Wasco	10.40%	Marion	6.03%
Clackamas	15.91%	Hood River	13.24%	Wasco	11.23%	Clackamas	10.11%	Wasco	5.94%
Yamhill	15.67%	Yamhill	13.10%	Multnomah	10.52%	Yamhill	9.88%	Multnomah	5.26%
Malheur	15.36%	Wasco	13.00%	Washington	9.74%	Malheur	9.59%	Washington	4.52%
Marion	15.02%	Marion	12.10%	Malheur	9.43%	Marion	9.26%	Malheur	4.22%
Hood River	14.70%	Washington	12.07%	Klamath	8.57%	Hood River	8.96%	Klamath	3.40%
Multnomah	14.12%	Malheur	11.78%	Polk	5.20%	Multnomah	8.41%	Polk	0.19%
Morrow	13.63%	Multnomah	11.74%	Umatilla	3.89%	Morrow	7.95%	Umatilla	-1.06%
Washington	13.56%	Morrow	10.02%	Jefferson	2.91%	Washington	7.88%	Jefferson	-1.99%
Polk	12.34%	Klamath	7.65%	Morrow	-0.23%	Polk	6.72%	Morrow	-4.98%
Klamath	12.32%	Polk	6.76%	Columbia	-2.63%	Klamath	6.70%	Columbia	-7.27%
Jefferson	11.07%	Umatilla	6.20%	Wheeler	-14.43%	Jefferson	5.51%	Wheeler	-18.50%
Umatilla	9.31%	Jefferson	3.76%	Gilliam	-28.27%	Umatilla	3.84%	Gilliam	-31.69%
Sherman	NA	Sherman	NA	Sherman	NA	Sherman	NA	Sherman	NA
Grand Total	16.45%	Grand Total	14.12%	Grand Total	12.45%	Grand Total	10.62%	Grand Total	7.09%

**Appendix E2:
County Ranking by Projected Percentage Change in the Nurse Practitioner Workforce by Scenario:
2013-2020**

Baseline		A: HST (2% reduced util for Medicaid)		B: Team Care (Increase NP+PA:Physician ratio by 12%)		C: HIT (Saves 10% over 7 years)		D: Scenario B+C	
County	% Change	County	% Change	County	% Change	County	% Change	County	% Change
Curry	28.50%	Curry	26.96%	Curry	43.92%	Curry	22.07%	Curry	37.07%
Wheeler	26.59%	Wheeler	26.07%	Wheeler	41.78%	Wheeler	20.26%	Wheeler	35.03%
Coos	26.42%	Coos	25.26%	Coos	41.59%	Coos	20.09%	Coos	34.84%
Tillamook	25.65%	Wallowa	24.32%	Tillamook	40.73%	Tillamook	19.36%	Tillamook	34.02%
Wallowa	25.49%	Tillamook	24.17%	Wallowa	40.55%	Wallowa	19.21%	Wallowa	33.86%
Josephine	24.95%	Josephine	22.66%	Josephine	39.95%	Josephine	18.70%	Josephine	33.29%
Lincoln	24.13%	Lincoln	22.44%	Lincoln	39.03%	Lincoln	17.92%	Lincoln	32.41%
Crook	23.69%	Clatsop	21.15%	Crook	38.54%	Crook	17.50%	Crook	31.94%
Douglas	23.35%	Crook	20.57%	Douglas	38.15%	Douglas	17.18%	Douglas	31.57%
Grant	23.23%	Baker	20.24%	Grant	38.01%	Grant	17.06%	Grant	31.44%
Clatsop	22.52%	Grant	19.48%	Clatsop	37.22%	Clatsop	16.39%	Clatsop	30.69%
Baker	22.46%	Linn	19.12%	Baker	37.15%	Baker	16.33%	Baker	30.62%
Jackson	21.53%	Jackson	18.98%	Jackson	36.11%	Jackson	15.45%	Jackson	29.63%
Deschutes	21.06%	Deschutes	18.91%	Deschutes	35.59%	Deschutes	15.01%	Deschutes	29.14%
Harney	21.03%	Douglas	17.89%	Harney	35.55%	Harney	14.97%	Harney	29.10%
Linn	20.90%	Benton	17.85%	Linn	35.41%	Linn	14.85%	Linn	28.96%
Gilliam	20.18%	Sherman	17.78%	Gilliam	34.61%	Gilliam	14.17%	Gilliam	28.20%
Columbia	20.09%	Gilliam	17.68%	Columbia	34.50%	Columbia	14.08%	Columbia	28.09%
Lake	19.68%	Lane	16.87%	Lake	34.05%	Lake	13.70%	Lake	27.66%
Sherman	19.50%	Columbia	16.24%	Lane	33.71%	Sherman	13.52%	Lane	27.34%
Lane	19.38%	Harney	15.60%	Benton	33.49%	Lane	13.41%	Benton	27.14%
Benton	19.19%	Lake	15.44%	Union	30.41%	Benton	13.23%	Union	24.20%
Union	16.44%	Clackamas	14.33%	Wasco	30.16%	Union	10.61%	Wasco	23.96%
Wasco	16.21%	Union	13.88%	Clackamas	29.82%	Wasco	10.40%	Clackamas	23.64%
Clackamas	15.91%	Hood River	13.24%	Yamhill	29.55%	Clackamas	10.11%	Yamhill	23.38%
Yamhill	15.67%	Yamhill	13.10%	Malheur	29.20%	Yamhill	9.88%	Malheur	23.05%
Malheur	15.36%	Wasco	13.00%	Marion	28.82%	Malheur	9.59%	Marion	22.68%
Marion	15.02%	Marion	12.10%	Hood River	28.46%	Marion	9.26%	Hood River	22.34%
Hood River	14.70%	Washington	12.07%	Multnomah	27.81%	Hood River	8.96%	Multnomah	21.72%
Multnomah	14.12%	Malheur	11.78%	Washington	27.19%	Multnomah	8.41%	Washington	21.13%
Washington	13.56%	Multnomah	11.74%	Polk	25.83%	Washington	7.88%	Polk	19.83%
Polk	12.34%	Klamath	7.65%	Klamath	25.80%	Polk	6.72%	Klamath	19.81%
Klamath	12.32%	Polk	6.76%	Jefferson	24.40%	Klamath	6.70%	Jefferson	18.48%
Jefferson	11.07%	Umatilla	6.20%	Umatilla	22.43%	Jefferson	5.51%	Umatilla	16.60%
Umatilla	9.31%	Jefferson	3.76%	Sherman	NA	Umatilla	3.84%	Sherman	NA
Morrow	NA	Morrow	NA	Morrow	NA	Morrow	NA	Morrow	NA
Grand Total	16.57%	Grand Total	14.17%	Grand Total	30.56%	Grand Total	10.74%	Grand Total	24.34%

Appendix E3:
County Ranking by Projected Percentage Change in the Physician Assistant Workforce by Scenario:
2013-2020

Baseline		A: HST (2% reduced util for Medicaid)		B: Team Care (Increase NP+PA:Physician ratio by 12%)		C: HIT (Saves 10% over 7 years)		D: Scenario B+C	
County	% Change	County	% Change	County	% Change	County	% Change	County	% Change
Curry	28.50%	Curry	26.96%	Curry	43.92%	Curry	22.07%	Curry	37.07%
Wheeler	26.59%	Wheeler	26.07%	Wheeler	41.78%	Wheeler	20.26%	Wheeler	35.03%
Coos	26.42%	Coos	25.26%	Coos	41.59%	Coos	20.09%	Coos	34.84%
Tillamook	25.65%	Wallowa	24.32%	Tillamook	40.73%	Tillamook	19.36%	Tillamook	34.02%
Wallowa	25.49%	Tillamook	24.17%	Wallowa	40.55%	Wallowa	19.21%	Wallowa	33.86%
Josephine	24.95%	Josephine	22.66%	Josephine	39.95%	Josephine	18.70%	Josephine	33.29%
Lincoln	24.13%	Lincoln	22.44%	Lincoln	39.03%	Lincoln	17.92%	Lincoln	32.41%
Crook	23.69%	Clatsop	21.15%	Crook	38.54%	Crook	17.50%	Crook	31.94%
Douglas	23.35%	Crook	20.57%	Douglas	38.15%	Douglas	17.18%	Douglas	31.57%
Clatsop	22.52%	Baker	20.24%	Clatsop	37.22%	Clatsop	16.39%	Clatsop	30.69%
Baker	22.46%	Linn	19.12%	Baker	37.15%	Baker	16.33%	Baker	30.62%
Jackson	21.53%	Jackson	18.98%	Jackson	36.11%	Jackson	15.45%	Jackson	29.63%
Deschutes	21.06%	Deschutes	18.91%	Deschutes	35.59%	Deschutes	15.01%	Deschutes	29.14%
Harney	21.03%	Douglas	17.89%	Harney	35.55%	Harney	14.97%	Harney	29.10%
Linn	20.90%	Benton	17.85%	Linn	35.41%	Linn	14.85%	Linn	28.96%
Gilliam	20.18%	Gilliam	17.68%	Gilliam	34.61%	Gilliam	14.17%	Gilliam	28.20%
Columbia	20.09%	Lane	16.87%	Columbia	34.50%	Columbia	14.08%	Columbia	28.09%
Lake	19.68%	Columbia	16.24%	Lake	34.05%	Lake	13.70%	Lake	27.66%
Lane	19.38%	Harney	15.60%	Lane	33.71%	Lane	13.41%	Lane	27.34%
Benton	19.19%	Lake	15.44%	Benton	33.49%	Benton	13.23%	Benton	27.14%
Union	16.44%	Clackamas	14.33%	Union	30.41%	Union	10.61%	Union	24.20%
Wasco	16.21%	Union	13.88%	Wasco	30.16%	Wasco	10.40%	Wasco	23.96%
Clackamas	15.91%	Hood River	13.24%	Clackamas	29.82%	Clackamas	10.11%	Clackamas	23.64%
Yamhill	15.67%	Yamhill	13.10%	Yamhill	29.55%	Yamhill	9.88%	Yamhill	23.38%
Malheur	15.36%	Wasco	13.00%	Malheur	29.20%	Malheur	9.59%	Malheur	23.05%
Marion	15.02%	Marion	12.10%	Marion	28.82%	Marion	9.26%	Marion	22.68%
Hood River	14.70%	Washington	12.07%	Hood River	28.46%	Hood River	8.96%	Hood River	22.34%
Multnomah	14.12%	Malheur	11.78%	Multnomah	27.81%	Multnomah	8.41%	Multnomah	21.72%
Morrow	13.63%	Multnomah	11.74%	Morrow	27.27%	Morrow	7.95%	Morrow	21.21%
Washington	13.56%	Morrow	10.02%	Washington	27.19%	Washington	7.88%	Washington	21.13%
Polk	12.34%	Klamath	7.65%	Polk	25.83%	Polk	6.72%	Polk	19.83%
Klamath	12.32%	Polk	6.76%	Klamath	25.80%	Klamath	6.70%	Klamath	19.81%
Jefferson	11.07%	Umatilla	6.20%	Jefferson	24.40%	Jefferson	5.51%	Jefferson	18.48%
Umatilla	9.31%	Jefferson	3.76%	Umatilla	22.43%	Umatilla	3.84%	Umatilla	16.60%
Grant	NA	Grant	NA	Grant	NA	Grant	NA	Grant	NA
Sherman	NA	Sherman	NA	Sherman	NA	Sherman	NA	Sherman	NA
Grand Total	16.93%	Grand Total	14.53%	Grand Total	30.96%	Grand Total	11.08%	Grand Total	24.72%

Endnotes

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Memo

To: Oregon Health Policy Board

From: Oregon Healthcare Workforce Committee

Date: May 6, 2014

In response to the Policy Board's request and to inform recommendations for policy development, public and private investments and strategic plans, the Healthcare Workforce Committee (Committee) asked the Oregon Health Authority (OHA) to develop a report on the diversity of Oregon's health care workforce as compared to the state's population. While the health professions represented by the seven licensing boards in this study reflect only a portion of the state's total health care workforce, the information in this report provides insight into needs, gaps and challenges to improving the diversity of Oregon's health care workforce.

As represented by the licensed health professions in this study, the key findings show:

- The licensed health care workforce is likely less racially and ethnically diverse than Oregon's population as a whole. Missing data makes this impossible to say with certainty.
- Almost 13 percent of the records collected are missing race and ethnicity data. Given the amount of missing data, it is difficult to make accurate comparisons between groups.

It is clear that fostering a more diverse workforce will require action within primary, secondary and professional education as well as in the recruitment and retention of health care professionals and payment reform. Throughout the state, multiple efforts in the health and education policy arenas led by employers, educational institutions, non-profit entities and other organizations are addressing the issues highlighted in this report. For example:

Improving standardization and consistency in data collection. On the workforce side, the OHA and the licensing boards engage in ongoing collaboration to improve data collection through technology improvements and standardization in race, ethnicity and language data. On the patient/client side, in 2013 the state legislature passed HB 2134 that standardizes data collected on race, ethnicity, language and disability status by the Oregon Department of Human Services and the OHA.

Addressing provider cultural competence. In 2013, the Legislature passed HB 2611 that allows 19 health profession licensing boards to establish rules on cultural competency training for license renewals by 2017.

Engaging traditional health workers. The OHA's Traditional Health Worker Commission supports the role, engagement and utilization of traditional health workers (THWs) in part to increase the diversity of the health care workforce in communities across the state. THWs include community health workers, peer support and wellness specialists, personal health navigators and doulas.

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Increasing the diversity of Oregon's health professionals. Multiple health care employers, public, non-profit, and private educational institutions, Area Health Education Centers, foundations, non-profit entities, local workforce investment boards, and other organizations are engaged, most often in collaborative efforts, in building the diversity of Oregon's health care workforce. These targeted efforts include (but are not limited to) career exploration, student and faculty recruitment, scholarships and loan repayment programs, student support services, career pathway development, incumbent worker training, supportive employee on boarding, and mentoring programs.

The Committee is committed to increasing the number and capacity of health care professionals to provide the best care possible for Oregonians. This commitment includes encouraging the development of a diverse, culturally competent workforce. One important element in meeting this commitment is realignment of the state's health policy goals, payment methods and worker training. For example, THWs are a racially and ethnically diverse workforce but frequently do not have an accepted mechanism in place for billing and receiving payment. This has resulted in a large number of THWs trained and ready to work, but yet unemployed.

The Committee continues to support efforts to improve data collection and gather research and recommendations on removing the barriers for Oregonians to pursue careers as health professionals in their communities. Improvements in attracting a diverse student body, appropriate and well-timed training, and new methods of payment all play a role in increasing the diversity and capacity of Oregon's health care workforce.

2012–2013

The Diversity of Oregon’s Health Care Workforce

The Oregon Health Policy Board asked the Oregon Healthcare Workforce Committee to provide a snapshot of the state’s health care workforce diversity. Using information from seven licensing boards required to provide data to the Oregon Health Authority, this report explores the relative distribution of workforce and population by race, ethnicity and language.

It also includes data specifically for primary care providers and information about professionals of color. The licensing boards required to report

include the Oregon Medical Board, Board of Dentistry, State Board of Nursing, Board of Pharmacy, Physical Therapist Licensing Board, Occupational Therapy Licensing Board, and the Board of Examiners of Licensed Dietitians.

Unfortunately, a significant amount of race and ethnicity data about health care professionals is missing, which limits the report’s findings.

OHA is working with the licensing boards to improve data collection for future reports.

Race and ethnicity

It is likely that Oregon’s health care workforce is less racially and ethnically diverse than the state as a whole. However, this cannot be proved because of data limitations. Approximately 13 percent of the workforce records are missing race/ethnicity data because it was not entered by the licensee or it was not collected by the licensing board. Another 4.5 percent of licensees declined to provide race or ethnicity information.

The table on this page shows the number of professionals in different race and ethnicity categories. Percent distribution is not shown because the amount of missing data can create misleading figures for some groups.

The workforce in most Oregon counties is less Hispanic than the overall population. Although

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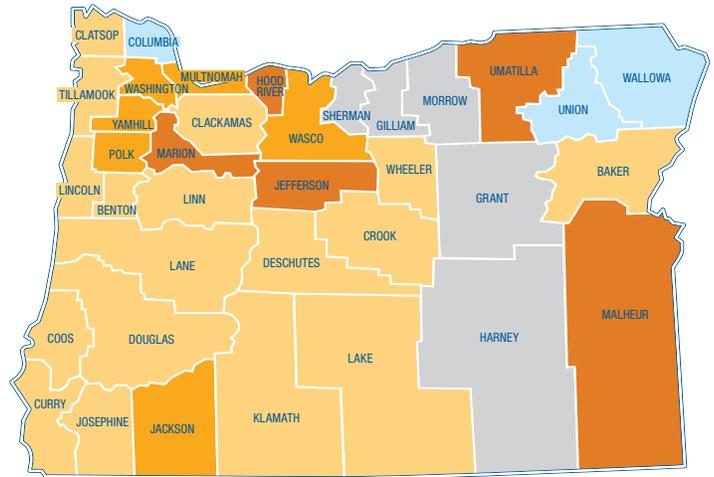
Oregon health care professionals by race and ethnicity

Board	Total	Non-Hispanic/Latino									Missing (no data)
		Hispanic/Latino	White	Black/African American	American Indian/Alaskan Native	Asian	Native Hawaiian/Pacific Islander	Other	Multi-racial	Refused/declined	
Medical	11,886	333	8,266	95	17	982	16	229	44	509	11.7%
Dentistry	2,655	69	1,914	12	7	177	7	9	40	163	9.7%
Nursing	48,684	1,946	33,079	713	300	1,422	--	618	976	2,140	15.4%
Pharmacy	7,788	1,656	4,648	59	57	616	15	26	174	420	1.5%
Physical therapy	3,465	55	2,902	11	9	128	10	2	43	163	4.1%
Occupational therapy	1,087	13	938	1	3	42	3	12	13	61	0.1%
Licensed dietitians	563	5	315	--	3	16	--	--	4	12	36.9%
Total	76,128	4,077	52,062	891	396	3,383	51	896	1,294	3,468	12.6%

counties with a larger-than-average Hispanic population have a higher number of Hispanic health professionals, those counties tend to have fewer Hispanic health professionals than counties with a smaller Hispanic population. The map at right shows the difference between the percentage of Hispanic health professionals and the Hispanic population by county, with darker orange indicating a broader gap.

Traditional health workers — such as peer wellness specialists, community health workers/promotoras and home care workers — will help correct this disparity. In a survey of 600 traditional health workers conducted in 2011 by the Oregon Health Authority Office of Equity and Inclusion, a majority of respondents reported serving people from the health worker’s same racial or ethnic group.

Gap in Hispanic/Latino health care professionals compared to county population



A negative value means the percentage of health professionals who identify as Hispanic/Latino is smaller compared to the Hispanic/Latino population. A positive value means the percentage of health professionals who identify as Hispanic/Latino is greater compared to that population.

- Inadequate data
- -23% to -13%
- -12.9% to -5%
- -4.9% to -0.1%
- 0.1% to 4.3%

Language

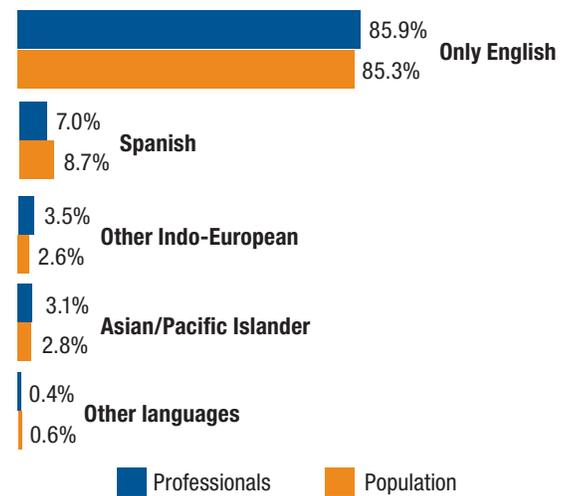
The proportion of health professionals speaking languages other than English is roughly similar to the state population as a whole (see chart at right). However, there is no guarantee that a provider who speaks a particular language will be available when a non-English-speaking client needs one. In addition, the health professionals’ language proficiency level may not meet the needs of their clients.

Health care interpreters help to fill the gaps. Oregon offers three levels of health care interpreters including registered, qualified and certified interpreters.

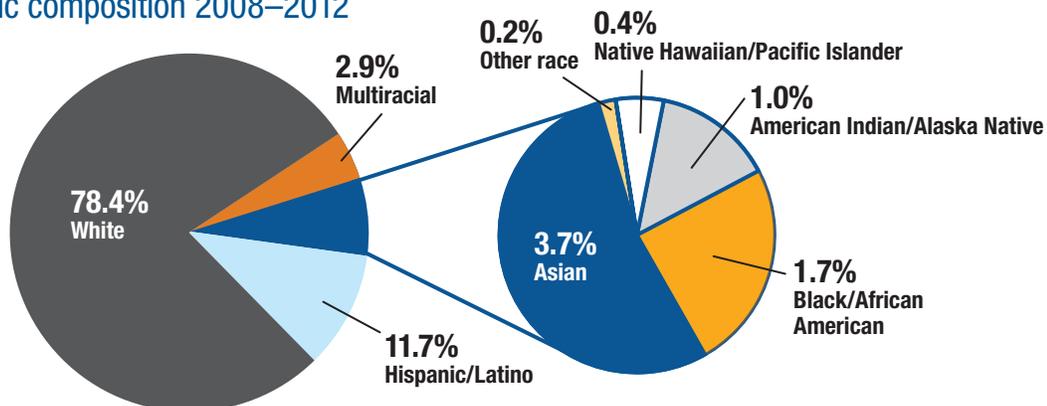
Certified health care interpreters have formal training and experience and must pass both written and oral examinations.

Oregon is estimated to have more than 4,500 health care interpreters. Currently, 46 are qualified and 26 are certified health care interpreters.

Languages in the health care workforce



Oregon racial/ethnic composition 2008–2012



Primary care providers^{1,2}

Between 35 percent and 45 percent of professionals of color are primary care providers, practicing as physicians, nurse practitioners or physician assistants. (Approximately 40 percent of white licensees practice in primary care specialties.) The scorecard at right shows the diversity of Oregon's primary care providers compared to the diversity of Oregon's population.

As shown in the scorecard, there are more Asian primary care physicians than the percentage of Asians in Oregon's population, while there are fewer African American primary care physicians than the percentage of African Americans in Oregon's population.

Primary care providers are more linguistically diverse than the health care work force as a whole. Spanish is the language most spoken by PCPs, and physicians report the highest percentage speaking more than one language. In fact, only 13 percent of providers overall speak a language other than English, compared with 32 percent of primary care physicians.

Oregon Primary Care Providers Diversity Scorecard

Race/ethnicity	Oregon population	MD and DO licenses	Physician assistants	Nurse practitioners
White	78.4%			
Black/African American	1.7%			
American Indian/Alaska Native	1.0%			
Asian	3.7%			
Native Hawaiian/Pacific Islander	0.4%		*	*
Hispanic**	11.7%			

Below state population

Similar to state population

Above state population

Note: Providers with missing racial and ethnicity data were excluded from the analysis. Racial categories exclude Hispanics.

* No providers; ** Any race

Native Hawaiian/Pacific Islander health professionals: N=51

Important note: The nursing professions are not represented in this race group due to data collection differences. This contributes to a very small cohort of Native Hawaiian/Pacific Islander health professionals, which makes comparing "top professions" and their characteristics inadvisable.

Hispanic/Latino health professionals: N=4,077

TOP PROFESSIONS:

Pharmacists: 33.7%

87.6% female
47.7% in Portland metro counties
40.3% aged 55+

Certified nursing assistants: 25.3%

83.3% female
44.9% in Portland metro counties
7.3% aged 55+

Asian health professionals: N=3,383

TOP PROFESSIONS:

Medical doctors: 27.0%

41.6% female
67.2% in Portland metro counties
14.1% aged 55+

Registered nurses: 25.1%

89.3% female
76.5% in Portland metro counties
17.3% aged 55+

African American health professionals: N=891

TOP PROFESSIONS:

Certified nursing assistants: 51.7%

75.7% female
86.8% in Portland metro counties
10.9% aged 55+

Registered nurses: 20.9%

82.3% female
81.7% in Portland metro counties
21.5% aged 55+

American Indian/Alaska Native health professionals: N=396

TOP PROFESSIONS:

Registered nurses: 40.9%

89.5% female
35.2% in Portland metro counties
29.6% aged 55+

Certified nursing assistants: 27.0%

89.7% female
24.3% in Portland metro counties
12.2% aged 55+

¹ Primary care providers are defined as licensed medical doctors, physicians assistants or doctors of osteopathic medicine whose practice specialties include family medicine, family practice, general practice, internal medicine, geriatrics, pediatrics or adolescent health. Licensed nurse practitioners can also be considered primary care providers if they are certified in adult, family, pediatric, geriatric or women's health practice but do NOT have a practice specialty in anesthesia, critical/care, dermatology, emergency/urgent care, long-term care, management/administration, medical/surgical, neonatology, neurology, nursing education, occupational health, oncology, orthopedics, psychology/mental health, regulatory, rehabilitation or surgery/recovery.

² Due to the amount of missing race and ethnicity data, percentages highlighting racial/ethnic workforce makeups should be interpreted with caution.

Methods and sources

Workforce licensing data:

Health professionals are licensees who work in Oregon and renewed or obtained a license from one or more of the following boards during these dates:

- Oregon Medical Board (October through December 2011);
- Oregon State Board of Nursing (renewal dates range between late 2011 and June 2013);
- Oregon Board of Dentistry (Jan. 1 through March 31, 2013 for dentists and July 1 through Sept. 30, 2012 for dental hygienists);
- Oregon Occupational Therapy Licensing Board (March 1 through May 31, 2013);
- Oregon Board of Pharmacy (April 1 through June 30, 2013 for pharmacists and July 1 through Sept. 30, 2012 for certified pharmacy technicians);
- Oregon Physical Therapist Licensing Board (Jan. 1 through March 31, 2013);
- Oregon Board of Licensed Dietitians (May 2012 through June 2013).

Workforce data were extracted from the most recent workforce database. It includes total counts of health professionals from seven health licensing boards. Errors in ZIP codes, state, cities and other address fields were corrected. The Oregon Medical Board and the Oregon State Board of Nursing provided race/ethnicity data collected with their own data system; all the other health professions' race/ethnicity data were collected through a common format workforce survey that licensees must complete as part of their renewal process.

All race/ethnicity categories in the workforce data were coded as mutually exclusive to match the American Community Survey (ACS) race/ethnicity categories and allow comparisons. When a licensee selected Hispanic as his or her ethnicity, the licensee was coded as being Hispanic. If there were other races selected along with Hispanic ethnicity, such as "Black" or "Asian," the licensee would only be counted in the Hispanic category and not in other categories. When a licensee selected a non-Hispanic ethnicity and more than one race, the licensee was only coded as "Multiracial" and was not included in

the specific race categories. When a licensee selected "Other" as race and no other race was selected, the licensee was coded as "Other."

The Primary Care Providers Diversity Scorecard on page three uses a difference of 0.5 as the threshold to identify gaps between provider and population diversity. Using this small difference is essential because of the small population groups described. For example, 1.7 percent of Oregon's population is African American vs. approximately 0.7 percent of primary care providers; using a two- or five-point threshold for difference would result in these figures being shown as roughly equivalent.

The age variable calculates the age of the licensee at the time of his or her license renewal.

Data were analyzed and tabulated with SAS 9.2; graphics were produced in Excel. ArcGIS10 was also used to produce the map.

Population data from ACS:

- Random sample of all households in Oregon;
- Five-year ACS estimates (data collected over 60-month period, 2008–2012).

ACS five-year combined population estimates were used to present data at the county level. These estimates are not as current as the one-year estimates, but the primary advantage of using multi-year estimates is the data's availability and increased statistical reliability for less populated areas and small population subgroups.

Regarding languages, ACS coded 381 different languages nationwide. Standard tables separate out 39 languages and the four main language groups used here: Spanish, other Indo-European languages, Asian and Pacific Island languages, and all other languages. Language groups are not mutually exclusive; some health professionals reporting speaking more than one language may have been counted twice; 92 percent of the health professionals were coded in only one language group.

Acknowledgments: This report was a joint effort of these Oregon Health Authority programs: Office of Equity and Inclusion, Program Design and Evaluation Services, the Office of Health Analytics, and the Office of Health Policy and Research.

This document can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request this publication in another format or language, contact 503-373-1574.

Resource list

Healthcare Workforce Committee resources:

www.oregon.gov/oha/OHPR/HCW/Pages/Resources.aspx

Includes:

Oregon Health Professions: Occupational and County Profiles — www.oregon.gov/oha/OHPR/HCW/Resources/2012%20Oregon%20Health%20Profession%20Profiles.pdf; and

Projected Demand for Physicians, Nurse Practitioners, and Physician Assistants in Oregon, 2013–2020 — www.oregon.gov/oha/OHPR/HCW/Resources/Projected%20Demand%20for%20Physicians,%20Nurse%20Practitioners,%20and%20Physician%20Assistants%20in%20Oregon%20-%202013-2020.pdf

Oregon Racial and Ethnic Data and the State of Equity Report, Phase Two, 2013:

www.oregon.gov/oha/oei/Pages/soe.aspx

Traditional Health Workers Report, 2011:

www.oregon.gov/oha/oei/Pages/nthw-report.aspx

Appendix A: Oregon population race and ethnicity, by county

	Total	Hispanic/ Latino		Non-Hispanic													
				White	Percent	Black/AA	Percent	AI/AN	Percent	Asian	Percent	NH/PI	Percent	Other	Percent	Multiracial	Percent
Oregon	3,836,628	449,888	11.7%	3,008,356	78.4%	65,612	1.7%	38,684	1.0%	141,497	3.7%	13,641	0.4%	5,885	0.2%	113,065	2.9%
Baker	16,092	559	3.5%	14,897	92.6%	32	0.2%	240	1.5%	69	0.4%	2	0.0%	-	0.0%	293	1.8%
Benton	85,501	5,486	6.4%	71,390	83.5%	818	1.0%	541	0.6%	4,723	5.5%	303	0.4%	145	0.2%	2,095	2.5%
Clackamas	377,206	29,137	7.7%	318,687	84.5%	2,679	0.7%	1,639	0.4%	13,366	3.5%	801	0.2%	194	0.1%	10,703	2.8%
Clatsop	37,068	2,820	7.6%	32,308	87.2%	204	0.6%	132	0.4%	470	1.3%	51	0.1%	33	0.1%	1,050	2.8%
Columbia	49,317	2,035	4.1%	44,513	90.3%	111	0.2%	675	1.4%	465	0.9%	52	0.1%	19	0.0%	1,447	2.9%
Coos	62,937	3,456	5.5%	54,647	86.8%	200	0.3%	1,399	2.2%	696	1.1%	27	0.0%	133	0.2%	2,379	3.8%
Crook	21,102	1,544	7.3%	18,772	89.0%	46	0.2%	278	1.3%	53	0.3%	8	0.0%	66	0.3%	335	1.6%
Curry	22,344	1,258	5.6%	19,755	88.4%	27	0.1%	291	1.3%	77	0.3%	4	0.0%	-	0.0%	932	4.2%
Deschutes	158,884	11,827	7.4%	140,410	88.4%	458	0.3%	1,209	0.8%	1,766	1.1%	242	0.2%	59	0.0%	2,913	1.8%
Douglas	107,391	5,042	4.7%	96,074	89.5%	339	0.3%	1,816	1.7%	882	0.8%	153	0.1%	99	0.1%	2,986	2.8%
Gilliam	1,904	120	6.3%	1,716	90.1%	15	0.8%	15	0.8%	-	0.0%	5	0.3%	-	0.0%	33	1.7%
Grant	7,366	217	2.9%	6,857	93.1%	16	0.2%	35	0.5%	9	0.1%	2	0.0%	8	0.1%	222	3.0%
Harney	7,359	299	4.1%	6,581	89.4%	16	0.2%	218	3.0%	54	0.7%	6	0.1%	-	0.0%	185	2.5%
Hood River	22,207	6,546	29.5%	14,662	66.0%	105	0.5%	55	0.2%	316	1.4%	50	0.2%	26	0.1%	447	2.0%
Jackson	203,613	21,894	10.8%	170,315	83.6%	1,063	0.5%	1,296	0.6%	2,019	1.0%	506	0.2%	48	0.0%	6,472	3.2%
Jefferson	21,746	4,286	19.7%	13,354	61.4%	146	0.7%	3,343	15.4%	126	0.6%	109	0.5%	35	0.2%	347	1.6%
Josephine	82,636	5,274	6.4%	73,175	88.6%	288	0.3%	1,244	1.5%	521	0.6%	137	0.2%	101	0.1%	1,896	2.3%
Klamath	66,350	6,990	10.5%	53,730	81.0%	419	0.6%	2,301	3.5%	679	1.0%	89	0.1%	59	0.1%	2,083	3.1%
Lake	7,886	560	7.1%	6,860	87.0%	22	0.3%	132	1.7%	39	0.5%	11	0.1%	-	0.0%	262	3.3%
Lane	351,794	26,125	7.4%	297,479	84.6%	3,125	0.9%	3,227	0.9%	8,358	2.4%	813	0.2%	518	0.1%	12,149	3.5%
Lincoln	45,992	3,662	8.0%	38,730	84.2%	129	0.3%	1,269	2.8%	588	1.3%	87	0.2%	71	0.2%	1,456	3.2%
Linn	116,871	9,097	7.8%	101,743	87.1%	496	0.4%	1,998	1.7%	1,054	0.9%	233	0.2%	65	0.1%	2,185	1.9%
Malheur	31,057	9,793	31.5%	19,735	63.5%	293	0.9%	144	0.5%	373	1.2%	35	0.1%	-	0.0%	684	2.2%
Marion	315,391	76,429	24.2%	215,437	68.3%	2,865	0.9%	2,928	0.9%	5,685	1.8%	1,996	0.6%	1,838	0.6%	8,213	2.6%
Morrow	11,146	3,515	31.5%	7,196	64.6%	16	0.1%	54	0.5%	70	0.6%	10	0.1%	-	0.0%	285	2.6%
Multnomah	737,110	79,791	10.8%	532,082	72.2%	40,843	5.5%	4,758	0.6%	48,384	6.6%	4,500	0.6%	1,227	0.2%	25,525	3.5%

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Appendix A: Oregon population race and ethnicity, by county

	Total	Hispanic/ Latino		Non-Hispanic													
				White	Percent	Black/AA	Percent	AI/AN	Percent	Asian	Percent	NH/PI	Percent	Other	Percent	Multiracial	Percent
Oregon	3,836,628	449,888	11.7%	3,008,356	78.4%	65,612	1.7%	38,684	1.0%	141,497	3.7%	13,641	0.4%	5,885	0.2%	113,065	2.9%
Polk	75,448	9,122	12.1%	60,811	80.6%	313	0.4%	1,185	1.6%	1,580	2.1%	281	0.4%	26	0.0%	2,130	2.8%
Sherman	1,865	112	6.0%	1,676	89.9%	2	0.1%	25	1.3%	1	0.1%	-	0.0%	-	0.0%	49	2.6%
Tillamook	25,254	2,262	9.0%	21,904	86.7%	153	0.6%	195	0.8%	183	0.7%	12	0.0%	41	0.2%	504	2.0%
Umatilla	75,846	17,966	23.7%	52,782	69.6%	545	0.7%	1,364	1.8%	668	0.9%	105	0.1%	85	0.1%	2,331	3.1%
Union	25,670	1,016	4.0%	23,284	90.7%	84	0.3%	94	0.4%	233	0.9%	215	0.8%	12	0.0%	732	2.9%
Wallowa	6,938	157	2.3%	6,553	94.5%	38	0.5%	45	0.6%	13	0.2%	6	0.1%	7	0.1%	119	1.7%
Wasco	25,113	3,784	15.1%	19,442	77.4%	88	0.4%	1,095	4.4%	247	1.0%	107	0.4%	-	0.0%	350	1.4%
Washington	531,818	83,085	15.6%	371,106	69.8%	8,883	1.7%	2,405	0.5%	46,446	8.7%	2,458	0.5%	699	0.1%	16,736	3.1%
Wheeler	1,287	24	1.9%	1,225	95.2%	-	0.0%	8	0.6%	1	0.1%	-	0.0%	-	0.0%	29	2.3%
Yamhill	99,119	14,598	14.7%	78,468	79.2%	735	0.7%	1,031	1.0%	1,283	1.3%	225	0.2%	271	0.3%	2,508	2.5%

Source: American Community Survey five-year file, 2008–2012

Appendix B: Oregon health care workforce, by race and ethnicity, by county

	Total	Hispanic/ Latino	Non-Hispanic								
			White	Black/AA	AI/AN	Asian	NH/PI	Other	Multiracial	Refused/ declined	Missing (no data)
Oregon	76,056	4,073	52,007	890	396	3,381	51	894	1,294	3,466	9,604
Baker	269	9	193	-	1	3	-	4	3	15	41
Benton	1,834	74	1,353	11	7	58	2	14	41	75	199
Clackamas	6,555	391	4,381	91	26	407	4	84	107	301	763
Clatsop	681	39	494	3	2	18	2	8	7	20	88
Columbia	260	22	173	1	2	10	-	3	4	11	34
Coos	1,276	64	894	1	18	37	-	7	32	55	168
Crook	168	10	126	-	-	2	-	-	2	8	20
Curry	241	13	175	-	2	3	-	-	6	7	35
Deschutes	3,132	129	2,377	10	14	43	-	22	40	120	377
Douglas	1,709	79	1,238	3	14	46	1	13	29	54	232
Gilliam	12	1	6	-	-	-	-	-	-	3	2
Grant	108	4	72	1	1	2	-	-	1	6	21
Harney	99	4	76	-	3	1	-	-	2	5	8
Hood River	473	31	353	-	1	10	-	3	6	21	48
Jackson	4,118	231	2,897	13	27	94	3	42	80	213	518
Jefferson	195	12	135	-	6	2	-	1	3	11	25
Josephine	1,337	70	954	2	3	29	-	12	28	56	183
Klamath	950	66	657	4	12	18	-	13	16	48	116
Lake	92	6	67	-	1	-	-	-	2	6	10
Lane	6,963	329	4,872	30	48	181	6	64	136	330	967
Lincoln	771	34	561	1	7	25	-	6	11	33	93
Linn	1,486	74	1,016	5	6	24	-	13	20	72	256
Malheur	582	60	388	2	2	17	-	4	7	30	72
Marion	7,069	434	4,875	57	48	238	4	122	125	322	844
Morrow	49	3	38	-	-	-	-	-	-	2	6
Multnomah	21,263	1,046	13,944	491	75	1,315	20	303	345	1,004	2,720

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Appendix B: Oregon health care workforce, by race and ethnicity, by county

	Total	Hispanic/ Latino	Non-Hispanic								
			White	Black/AA	AI/AN	Asian	NH/PI	Other	Multiracial	Refused/ declined	Missing (no data)
Oregon	76,056	4,073	52,007	890	396	3,381	51	894	1,294	3,466	9,604
Polk	587	40	413	2	6	19	-	1	6	25	75
Sherman	5	-	4	-	-	-	-	-	-	-	1
Tillamook	307	15	226	1	1	8	-	1	3	11	41
Umatilla	994	58	697	9	12	13	1	8	13	47	136
Union	450	23	338	1	1	7	-	11	5	17	47
Wallowa	124	5	97	-	-	1	-	1	2	4	14
Wasco	683	36	518	-	3	11	-	6	7	24	78
Washington	9,818	569	6,428	145	42	707	7	112	181	440	1,187
Wheeler	12	-	8	-	-	-	-	-	-	3	1
Yamhill	1,384	92	963	6	5	32	1	16	24	67	178

Health care workforce missing county information: 72

Source: Health Care Workforce Database, Oregon Health Authority, 2013

Appendix C: Oregon population and health care workforce, Hispanic/Latino ethnicity, by county

County		Total	Hispanic/ Latino	
Oregon	Health care workforce	76,056	4,073	5.4%
	Population	3,836,628	449,888	11.7%
Baker	Health care workforce	269	9	3.3%
	Population	16,092	559	3.5%
Benton	Health care workforce	1,834	74	4.0%
	Population	85,501	5,486	6.4%
Clackamas	Health care workforce	6,555	391	6.0%
	Population	377,206	29,137	7.7%
Clatsop	Health care workforce	681	39	5.7%
	Population	37,068	2,820	7.6%
Columbia	Health care workforce	260	22	8.5%
	Population	49,317	2,035	4.1%
Coos	Health care workforce	1,276	64	5.0%
	Population	62,937	3,456	5.5%
Crook	Health care workforce	168	10	6.0%
	Population	21,102	1,544	7.3%
Curry	Health care workforce	241	13	5.4%
	Population	22,344	1,258	5.6%
Deschutes	Health care workforce	3,132	129	4.1%
	Population	158,884	11,827	7.4%
Douglas	Health care workforce	1,709	79	4.6%
	Population	107,391	5,042	4.7%
Gilliam	Health care workforce	12	1	8.3%
	Population	1,904	120	6.3%
Grant	Health care workforce	108	4	3.7%
	Population	7,366	217	2.9%
Harney	Health care workforce	99	4	4.0%
	Population	7,359	299	4.1%
Hood River	Health care workforce	473	31	6.6%
	Population	22,207	6,546	29.5%

County		Total	Hispanic/ Latino	
Oregon	Health care workforce	76,056	4,073	5.4%
	Population	3,836,628	449,888	11.7%
Jackson	Health care workforce	4,118	231	5.6%
	Population	203,613	21,894	10.8%
Jefferson	Health care workforce	195	12	6.2%
	Population	21,746	4,286	19.7%
Josephine	Health care workforce	1,337	70	5.2%
	Population	82,636	5,274	6.4%
Klamath	Health care workforce	950	66	6.9%
	Population	66,350	6,990	10.5%
Lake	Health care workforce	92	6	6.5%
	Population	7,886	560	7.1%
Lane	Health care workforce	6,963	329	4.7%
	Population	351,794	26,125	7.4%
Lincoln	Health care workforce	771	34	4.4%
	Population	45,992	3,662	8.0%
Linn	Health care workforce	1,486	74	5.0%
	Population	116,871	9,097	7.8%
Malheur	Health care workforce	582	60	10.3%
	Population	31,057	9,793	31.5%
Marion	Health care workforce	7,069	434	6.1%
	Population	315,391	76,429	24.2%
Morrow	Health care workforce	49	3	6.1%
	Population	11,146	3,515	31.5%
Multnomah	Health care workforce	21,263	1,046	4.9%
	Population	737,110	79,791	10.8%
Polk	Health care workforce	587	40	6.8%
	Population	75,448	9,122	12.1%
Sherman	Health care workforce	5	-	0.0%
	Population	1,865	112	6.0%

County		Total	Hispanic/ Latino	
Oregon	Health care workforce	76,056	4,073	5.4%
	Population	3,836,628	449,888	11.7%
Tillamook	Health care workforce	307	15	4.9%
	Population	25,254	2,262	9.0%
Umatilla	Health care workforce	994	58	5.8%
	Population	75,846	17,966	23.7%
Union	Health care workforce	450	23	5.1%
	Population	25,670	1,016	4.0%
Wallowa	Health care workforce	124	5	4.0%
	Population	6,938	157	2.3%
Wasco	Health care workforce	683	36	5.3%
	Population	25,113	3,784	15.1%
Washington	Health care workforce	9,818	569	5.8%
	Population	531,818	83,085	15.6%
Wheeler	Health care workforce	12	-	0.0%
	Population	1,287	24	1.9%
Yamhill	Health care workforce	1,384	92	6.6%
	Population	99,119	14,598	14.7%

Health care workforce missing county information: 72

Sources: Health Care Workforce Database, Oregon Health Authority, 2013; American Community Survey five-year file, 2008–2012

Appendix D: Oregon population and health care workforce: languages spoken other than English

SPEAK A LANGUAGE OTHER THAN ENGLISH		Total	Only English speakers	Percent	Spanish or Spanish Creole	Percent	Other Indo-European languages	Percent	Asian and Pacific Island languages	Percent	Other languages	Percent
Oregon	Health care workforce	76,056	65,332	85.9%	5,342	7.0%	2,680	3.5%	2,394	3.1%	308	0.4%
	Population	3,601,649	3,071,950	85.3%	314,426	8.7%	92,658	2.6%	102,474	2.8%	20,141	0.6%
Baker	Health care workforce	269	244	90.7%	15	5.6%	7	2.6%	2	0.7%	1	0.4%
	Population	15,292	14,784	96.7%	355	2.3%	88	0.6%	61	0.4%	4	0.0%
Benton	Health care workforce	1,834	1,618	88.2%	113	6.2%	52	2.8%	44	2.4%	7	0.4%
	Population	81,692	72,048	88.2%	3,792	4.6%	1,907	2.3%	2,931	3.6%	1,014	1.2%
Clackamas	Health care workforce	6,555	5,505	84.0%	456	7.0%	268	4.1%	291	4.4%	35	0.5%
	Population	356,026	314,785	88.4%	19,365	5.4%	10,209	2.9%	10,008	2.8%	1,659	0.5%
Clatsop	Health care workforce	681	611	89.7%	33	4.8%	17	2.5%	16	2.3%	4	0.6%
	Population	35,097	32,324	92.1%	1,821	5.2%	513	1.5%	303	0.9%	136	0.4%
Columbia	Health care workforce	260	223	85.8%	14	5.4%	15	5.8%	6	2.3%	2	0.8%
	Population	46,534	44,304	95.2%	1,198	2.6%	542	1.2%	234	0.5%	256	0.6%
Coos	Health care workforce	1,276	1,127	88.3%	83	6.5%	38	3.0%	25	2.0%	3	0.2%
	Population	59,767	57,102	95.5%	1,614	2.7%	682	1.1%	299	0.5%	70	0.1%
Crook	Health care workforce	168	156	92.9%	9	5.4%	-	0.0%	3	1.8%	-	0.0%
	Population	20,023	19,074	95.3%	711	3.6%	188	0.9%	24	0.1%	26	0.1%
Curry	Health care workforce	241	216	89.6%	14	5.8%	8	3.3%	3	1.2%	-	0.0%
	Population	21,457	20,363	94.9%	727	3.4%	240	1.1%	51	0.2%	76	0.4%
Deschutes	Health care workforce	3,132	2,822	90.1%	212	6.8%	66	2.1%	23	0.7%	9	0.3%
	Population	149,386	139,529	93.4%	7,483	5.0%	1,483	1.0%	825	0.6%	66	0.0%
Douglas	Health care workforce	1,709	1,551	90.8%	72	4.2%	40	2.3%	40	2.3%	6	0.4%
	Population	101,906	97,853	96.0%	2,158	2.1%	1,108	1.1%	571	0.6%	216	0.2%
Gilliam	Health care workforce	12	11	91.7%	1	8.3%	-	0.0%	-	0.0%	-	0.0%
	Population	1,801	1,685	93.6%	100	5.6%	16	0.9%	0	0.0%	0	0.0%
Grant	Health care workforce	108	99	91.7%	5	4.6%	2	1.9%	2	1.9%	-	0.0%
	Population	7,030	6,917	98.4%	74	1.1%	22	0.3%	9	0.1%	8	0.1%
Harney	Health care workforce	99	87	87.9%	8	8.1%	2	2.0%	1	1.0%	1	1.0%
	Population	6,965	6,805	97.7%	77	1.1%	29	0.4%	26	0.4%	28	0.4%
Hood River	Health care workforce	473	373	78.9%	80	16.9%	16	3.4%	2	0.4%	2	0.4%
	Population	20,763	14,735	71.0%	5,713	27.5%	210	1.0%	105	0.5%	0	0.0%

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Appendix D: Oregon population and health care workforce: languages spoken other than English

SPEAK A LANGUAGE OTHER THAN ENGLISH		Total	Only English speakers	Percent	Spanish or Spanish Creole	Percent	Other Indo-European languages	Percent	Asian and Pacific Island languages	Percent	Other languages	Percent
Oregon	Health care workforce	76,056	65,332	85.9%	5,342	7.0%	2,680	3.5%	2,394	3.1%	308	0.4%
	Population	3,601,649	3,071,950	85.3%	314,426	8.7%	92,658	2.6%	102,474	2.8%	20,141	0.6%
Jackson	Health care workforce	4,118	3,594	87.3%	305	7.4%	124	3.0%	82	2.0%	13	0.3%
	Population	191,672	173,541	90.5%	14,103	7.4%	2,060	1.1%	1,649	0.9%	319	0.2%
Jefferson	Health care workforce	195	180	92.3%	11	5.6%	3	1.5%	1	0.5%	-	0.0%
	Population	20,183	16,516	81.8%	3,012	14.9%	51	0.3%	123	0.6%	481	2.4%
Josephine	Health care workforce	1,337	1,176	88.0%	91	6.8%	43	3.2%	25	1.9%	2	0.1%
	Population	78,426	74,898	95.5%	1,951	2.5%	1,126	1.4%	335	0.4%	116	0.1%
Klamath	Health care workforce	950	826	86.9%	72	7.6%	30	3.2%	16	1.7%	6	0.6%
	Population	62,454	57,277	91.7%	3,835	6.1%	748	1.2%	389	0.6%	205	0.3%
Lake	Health care workforce	92	89	96.7%	2	2.2%	1	1.1%	-	0.0%	-	0.0%
	Population	7,594	7,216	95.0%	321	4.2%	20	0.3%	20	0.3%	17	0.2%
Lane	Health care workforce	6,963	6,214	89.2%	415	6.0%	198	2.8%	112	1.6%	24	0.3%
	Population	333,659	302,766	90.7%	16,941	5.1%	6,331	1.9%	6,021	1.8%	1,600	0.5%
Lincoln	Health care workforce	771	691	89.6%	42	5.4%	18	2.3%	18	2.3%	2	0.3%
	Population	43,739	40,836	93.4%	2,118	4.8%	355	0.8%	344	0.8%	86	0.2%
Linn	Health care workforce	1,486	1,367	92.0%	71	4.8%	19	1.3%	27	1.8%	2	0.1%
	Population	109,257	101,880	93.2%	5,428	5.0%	1,088	1.0%	640	0.6%	221	0.2%
Malheur	Health care workforce	582	503	86.4%	58	10.0%	13	2.2%	7	1.2%	1	0.2%
	Population	28,833	21,704	75.3%	6,630	23.0%	217	0.8%	218	0.8%	64	0.2%
Marion	Health care workforce	7,069	6,131	86.7%	550	7.8%	192	2.7%	167	2.4%	29	0.4%
	Population	292,013	219,175	75.1%	58,626	20.1%	8,203	2.8%	5,075	1.7%	934	0.3%
Morrow	Health care workforce	49	45	91.8%	3	6.1%	1	2.0%	-	0.0%	-	0.0%
	Population	10,350	7,417	71.7%	2,836	27.4%	56	0.5%	41	0.4%	0	0.0%
Multnomah	Health care workforce	21,263	17,748	83.5%	1,527	7.2%	973	4.6%	919	4.3%	96	0.5%
	Population	690,968	555,741	80.4%	57,689	8.3%	31,011	4.5%	38,903	5.6%	7,624	1.1%
Polk	Health care workforce	587	503	85.7%	55	9.4%	14	2.4%	12	2.0%	3	0.5%
	Population	70,758	62,467	88.3%	6,090	8.6%	1,000	1.4%	1,025	1.4%	176	0.2%
Sherman	Health care workforce	5	5	100.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
	Population	1,753	1,668	95.2%	72	4.1%	12	0.7%	1	0.1%	0	0.0%
Tillamook	Health care workforce	307	265	86.3%	23	7.5%	9	2.9%	6	2.0%	4	1.3%
	Population	23,951	22,301	93.1%	1,450	6.1%	147	0.6%	42	0.2%	11	0.0%

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Appendix D: Oregon population and health care workforce: languages spoken other than English

SPEAK A LANGUAGE OTHER THAN ENGLISH		Total	Only English speakers	Percent	Spanish or Spanish Creole	Percent	Other Indo-European languages	Percent	Asian and Pacific Island languages	Percent	Other languages	Percent
Oregon	Health care workforce	76,056	65,332	85.9%	5,342	7.0%	2,680	3.5%	2,394	3.1%	308	0.4%
	Population	3,601,649	3,071,950	85.3%	314,426	8.7%	92,658	2.6%	102,474	2.8%	20,141	0.6%
Umatilla	Health care workforce	994	873	87.8%	79	7.9%	26	2.6%	13	1.3%	3	0.3%
	Population	70,290	55,741	79.3%	13,162	18.7%	667	0.9%	470	0.7%	250	0.4%
Union	Health care workforce	450	407	90.4%	27	6.0%	11	2.4%	4	0.9%	1	0.2%
	Population	24,081	22,765	94.5%	843	3.5%	213	0.9%	257	1.1%	3	0.0%
Wallowa	Health care workforce	124	114	91.9%	9	7.3%	-	0.0%	1	0.8%	-	0.0%
	Population	6,608	6,375	96.5%	136	2.1%	70	1.1%	19	0.3%	8	0.1%
Wasco	Health care workforce	683	619	90.6%	45	6.6%	10	1.5%	7	1.0%	2	0.3%
	Population	23,552	19,945	84.7%	2,996	12.7%	232	1.0%	231	1.0%	148	0.6%
Washington	Health care workforce	9,818	8,133	82.8%	724	7.4%	427	4.3%	488	5.0%	46	0.5%
	Population	493,829	378,887	76.7%	60,444	12.2%	20,155	4.1%	30,218	6.1%	4,125	0.8%
Wheeler	Health care workforce	12	9	75.0%	3	25.0%	-	0.0%	-	0.0%	-	0.0%
	Population	1,243	1,224	98.5%	16	1.3%	2	0.2%	1	0.1%	0	0.0%
Yamhill	Health care workforce	1,384	1,197	86.5%	115	8.3%	37	2.7%	31	2.2%	4	0.3%
	Population	92,697	79,239	85.5%	10,582	11.4%	1,677	1.8%	1,005	1.1%	194	0.2%

Health care workforce missing county information: 72

Sources: Health Care Workforce Database, Oregon Health Authority, 2013; American Community Survey five-year file, 2008–2012

Health care workforce data includes languages other than English; these were classified into the four ACS language groups. Some health care workers were classified in more than one language group. English-only speaking health care workers did not report any other language besides English.

NOTE: Columns are mutually exclusive for population data; they are not for health care workforce data because one health care worker may have been classified in more than one language group.