



HEALTH CARE AND HUMAN SERVICES POLICY, RESEARCH, AND CONSULTING - WITH REAL-WORLD PERSPECTIVE.

Evaluation of Health Care Workforce Incentives in Oregon - Task 2 Summary

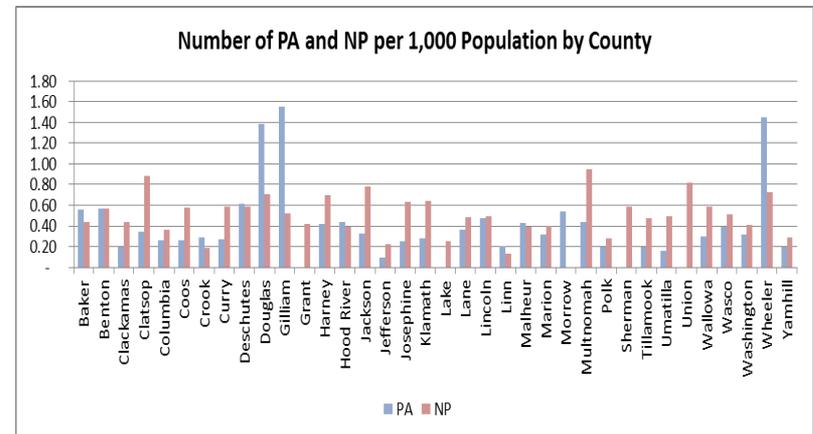
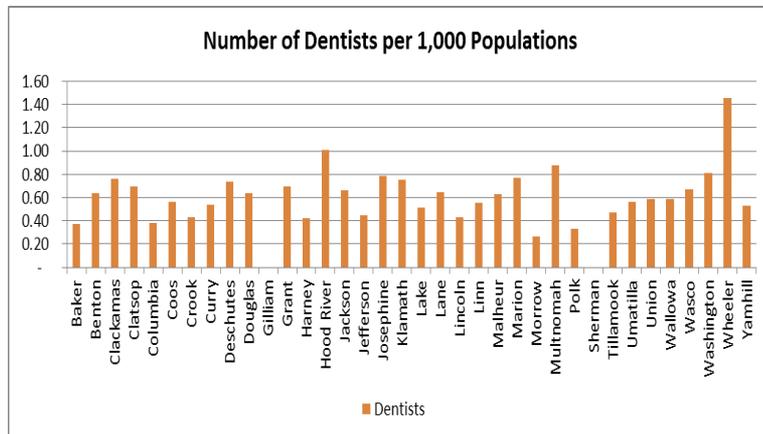
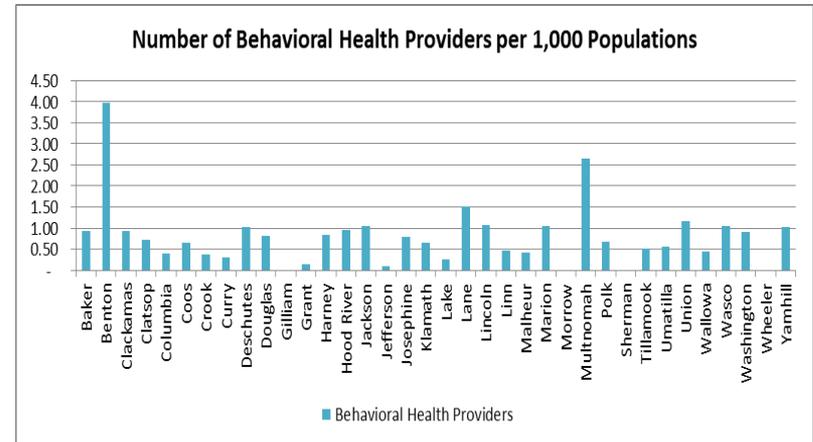
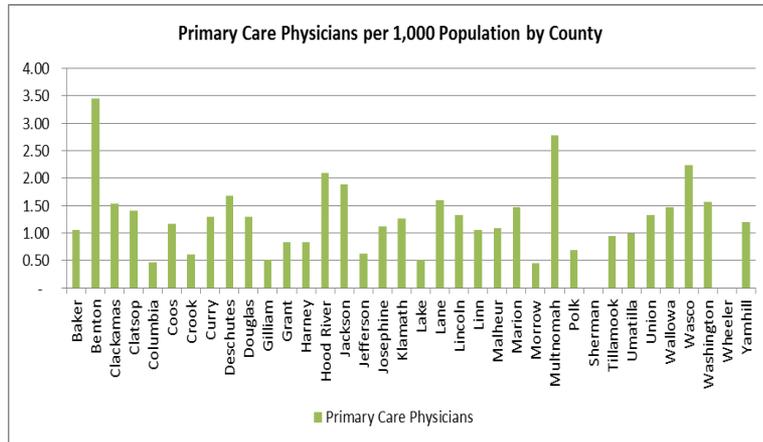
Prepared for Oregon Healthcare Workforce Committee Meeting

July 6, 2016

Background

- Objectives:
 - ▶ Estimate how effective (successful) current provider incentive programs are in attracting and retaining health workforce within the state
 - ▶ Consider new programs (if feasible and necessary), scale up or down current programs, and leverage resources to complement current programs
 - ▶ Recommend ways to improve data collection to serve policy-making decisions aimed at optimizing health care workforce within the state
- We started with:
 - ▶ Descriptive statistics on health workforce in OR, distribution of providers, participation in programs, patient population by location, and high need areas
 - ▶ Inventory of factors related to incentive programs (funding, program design, literature review on previous estimates showing effectiveness of such programs)

Health Care Workforce in Oregon



Evaluation of Program Effectiveness (Task 2)

- A program is effective if it increases the number of FTE-years beyond the number of FTE-years that providers would supply in targeted areas without the program
- We distinguish between two program effects:
 - ▶ The increase in providers attracted to targeted areas
 - These are providers who would not have located in those areas without the program
 - We call this the *recruiting* effect of the program
 - ▶ The increase in time served in those areas
 - Providers remaining in targeted areas longer than they otherwise would
 - We call this the *retention* effect of the program
- The full effect of the program is obtained by adding together two terms:
 - ▶ Additional providers induced by the program (“recruiting effect”) multiplied by the expected years they will serve in targeted areas (both while in program and after)
 - ▶ Expected increase in service time for those who would have served in the targeted areas anyway (“retention effect”)
- We estimate these effects for each program and by provider type
- We also calculate the cost of attracting an additional FTE-year for each program

Data and Approach

- We used P360 and administrative data on program participation to track providers during and after program participation between 2011 and 2015
 - ▶ P360 is a database of providers by type and location updated continuously
- NHSC and state loan repayment programs are different from tax credit and insurance subsidy programs, as they stipulate an obligation period
 - ▶ Given limited data for SLRP, MLRP and BHLRP, we use NHSC LRP to approximate recruiting and retention in rural areas of these programs
- To be effective, program must induce some providers to locate in targeted areas that would not have otherwise chosen (*recruiting* effect)
 - ▶ Awards to providers who would have gone to rural areas anyway are unnecessary payments, since they do not change behavior in a desired way
 - ▶ We estimate regression models in which we link the number of providers in a given area to the number of program participants in that area
 - If increase in providers as a result of program participation is zero, we conclude that all participants would have gone to rural areas even without the program
 - If increase in providers is $0 < x < 1$, then the fraction of providers who are induced by the program is x ; i.e., the program has a recruiting effect
- If participants' retention is higher than of non-participants, program is effective even if participants would be in rural areas without the program (*retention* effect)

Estimating the Recruiting Effects

- We estimate regression models to estimate the program recruiting effect
 - ▶ The number of providers in a given area is a function of:
 - the area's characteristics (population, income, age distribution, and others) and
 - the number of program participants in that area
 - ▶ Our estimates indicate that in targeted areas:
 - Every 10 NHSC physician participants increases number of primary care physicians by 3.2
 - Similarly, every 10 NP/PA NHSC participants increases the number of NP/PAs by 6.4
 - Every 10 participants in both RPTC and RMPIS, the number of NP/PAs increases by 2.3
 - RMPIS increases number of NPs and PAs by 1.9, for every 10 participants
 - ▶ These are providers who would not have gone to rural areas without the programs

Retention Analysis

- We construct retention profiles in rural areas (2011-2015) by provider type and program, as well as for non-participants in rural areas

Years since Completion	In PC HPSA	NHSC PC Providers	% in PC HPSA	In MH HPSA	NHSC MH Providers	% in MH HPSA
0	86	86	-	62	62	
1	54	84	62.8	50	61	80.6
2	28	58	48.3	32	38	84.2
3	14	28	50	12	14	85.7
4	2	6	33.3	4	5	80

NHSC retention rates are lower than national rates for PC providers, but higher for MH providers

Years since Completion	PC HPSA	Not PC HPSA	Total	% in PC HPSA
NHSC PC providers: In RPTC program				
0	40		40	
1	27	13	40	67.5
2	15	13	28	53.6
3	8	5	13	61.5
4	0	2	2	0.0
NHSC PC providers: NOT in RPTC program				
0	46		46	
1	27	17	44	61.4
2	13	17	30	43.3
3	6	9	15	40.0
4	2	2	4	50.0

The retention rates of NHSC providers who also participate in RPTC are higher than the retention rate of NHSC providers who were not in RPTC --> potential RPTC retention effect

FTE-Years and Marginal Cost per FTE-Year

- NHSC program only, PC Physicians (obligation end year between 2011-2014):
 - ▶ 64 PC physicians identified, serving under obligation for 2.6 years on average
 - ▶ The 32% of them who would not have gone there without the program generate $64 \times 0.32 \times 2.6 = 53$ FTE-years while in service
 - ▶ However, some of them remain in rural areas even beyond their initial obligation
 - On average, NHSC PC physicians spend an additional 2.3 years in rural areas
 - Hence, these PC physicians generate additional 46 FTE-years ($= 64 \times 0.32 \times 2.3$)
 - Total recruiting effect is $53 + 46 = 99$ FTEs (*recruiting effect*)
 - The rest of $44 (= 64 - (64 \times 0.32))$ PC physicians would have gone to rural areas anyway, but because of obligation, they stay in rural areas longer than non-participants by $(3.50 - 2.76) \times 44 = 32$ FTE-years (*retention effect*)
 - ▶ The total cost for the 64 PC physicians is $64 \times 2.6 \times \$25,000 = \4.16 million
 - ▶ The marginal cost per one additional FTE-year is: $\$4.16 \text{ million} / (53 + 46 + 32) = \mathbf{\$31,756}$
 - ▶ This cost is smaller as the fraction of physicians induced by program (i.e., 0.32) gets larger
 - ▶ With a larger time period considered, the marginal cost potentially gets smaller
 - Data limits the calculation to a 4 year horizon

FTE-Years Generated in Rural Areas by the Incentive Programs

	Recruiting Effect		Retention Effect		Total Effect
	Additional Providers	Expected years in rural	Other Participants	Expected years in rural	Total FTE-years
	Primary Care Physicians				
RPTC	0	3.7	827	0.9	736
RMPIS	0	3.8	459	1.0	459
SLRP	8	4.9	18	0.7	52
BHLRP	--	4.9	--	0.7	--
MCPLRP	3	4.9	5	0.7	19
NHSC	20	4.9	44	0.7	131
NHSC & RPTC	10	5.8	20	1.0	76
Non-participants	--	2.8	--	--	--
	NPs and PAs				
RPTC	25	3.6	607	0.8	600
RMPIS	15	3.6	63	0.9	111
SLRP	13	4.3	7	1.1	63
BHLRP	9	4.3	5	1.1	44
MCPLRP	10	4.3	5	1.1	48
NHSC	70	4.3	38	1.1	341
NHSC & RPTC	48	5.2	26	1.1	278
Non-participants	--	2.7	--	--	--

NOTE: Due to lack of data, calculations for the state LRP assume the same retention rates and recruiting effects as in the case of the NHSC program.

Marginal Cost per Additional FTE-Year

	PC Physicians			NP/PAs		
	Average cost (\$)	Cumulative Cost (\$)	Marginal cost (\$)	Average cost (\$)	Cumulative cost (\$)	Marginal cost (\$)
RPTC	5,000	18,350	20,787	5,000	17,800	18,960
RMPIS	3,890	14,626	14,820	3,890	14,081	9,866
SLRP	25,000	65,000	31,756	25,000	65,000	20,587
BHLRP	25,000	65,000	31,756	25,000	65,000	20,587
MCPLRP	25,000	65,000	31,756	25,000	65,000	20,587
NHSC (No RPTC)	25,000	65,000	31,756	25,000	65,000	20,587
NHSC & RPTC	30,000	94,000	36,908	30,000	91,000	24,233

NOTE: Due to lack of data, calculations for the state LRPs assume the same retention rates and recruiting effects as in the case of the NHSC program.

Summary of Preliminary Findings

- Evidence suggests that loan repayment programs have an impact on:
 - ▶ Inducing providers into target areas and
 - ▶ Retaining them longer than in the absence of the program
- RMPIS in combination with RPTC appear to have an impact on recruiting new NPs and PAs in rural areas
- RPTC and RMPIS also appear to retain providers longer in rural areas, when compared to the retention of non-participating providers
- Some evidence suggests diminishing returns to participating in multiple programs
- Programs appear to be more cost efficient in attracting and retaining NP/PAs in targeted areas relative to physicians
- Marginal costs per additional FTEs appear to be roughly of the same order of magnitude for all programs
- The “recruiting effect” offers greater leverage to increasing providers in targeted areas than the retention impact alone

Preliminary Recommendations (Task 3)

- For limited-funding loan programs, allocated based on a point system, consider allowing all minimally qualified applicants to “bid” for an award
 - ▶ This may be done by offering additional years of obligated service, thus generating added points for the award decision
- Offer larger awards to loan repayment participants who obligate to serve additional years in targeted areas
- Add program features that would be most valued by providers who are not currently serving in a targeted area, to induce them to move to such an area
 - ▶ For example, if program participation would result in a move from a non-qualified area to a target area, a moving expense stipend of \$X,000 would be offered
- In the future, attempt to collect and track data on all program applicants, including those not offered awards
 - Such data is valuable in assessing the impact of the program
 - Better isolate the impact of other, non-program related characteristics on the providers’ decision to locate in rural areas

Preliminary Recommendations (Task 3) - cont'd

- Explore possibility of tying programs without obligation (like RPTC or RMPIS) to an obligation of a given number of one or more years
- Increase the number of providers who are induced to serve in rural areas only as a result of the programs (i.e., recruiting effect)
- Increase level of community support to maintain and increase retention once providers serve in rural areas
- Increase awareness on availability of programs
- Relax the requirement to have a job in hand a rural area at the time of application for a state loan repayment program
 - ▶ Instead, make ratification of an award conditional on moving to and practicing in a qualified area
- Increase award amounts overall, given the increasing amount of student debt
- Allow for different award amounts by provider type, depending on supply and demand conditions
- Set up a bidding system where potential applicants submit amounts that would be required for them to move to and practice in a given area
- These findings and recommendations are preliminary in that:
 - They may be subject to modification prior to completion of the study
 - Recommendations may be added prior to the completion of the study