



Healthcare Providers' Oral Health Practices Participating in a Regional Oral Health Intervention

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INTRODUCTION

- The Rocky Mountain Network for Oral Health Integration (RoMoNOH) is funded by the Maternal and Child Health Bureau (2019-2025) to develop, implement, and evaluate a model for the delivery of preventive oral health services within Community Health Centers (CHCs) across Arizona, Colorado, Montana, and Wyoming.
- RoMoNOH supports delivery of preventive oral health services at medical visits by the medical team and/or integrated dental hygienists including caries risk assessment, fluoride varnish, dental referral, oral health education, and goal setting.
- The RoMoNOH implementation approach includes online eLearning, synchronized practice facilitation using coaches, continuous quality improvement, population management, and value-based care with incentive payments.

DESIGN & METHODS

- Pre-implementation (Fall, 2020) and Post-Implementation (Spring, 2024)
- Setting: 22 (pre) and 20 (post) Community Health Centers across Arizona, Colorado, Montana, Wyoming participating in the RoMoNOH project
 - Medical Model | Integrated Dental Hygiene Model | Combined Model
- Population: Member of a healthcare team who provided clinical care to children ages 0-3 years in participating CHCs
- Qualtrics® online survey (pre) and REDCap® online survey (post)
- Measures:
 - Provider characteristics: career stage: < 35 years of age = early career vs. late career
 - American Academy of Pediatrics Periodic Survey of Fellows
- Oral Health Domains
 - Knowledge: 4 items | age of first dental visit, community fluoridated, clinic have referral process (2)
 - Self-reported Abilities: 12 items
 - "How would you rate your ability to perform the following with patients who are birth to 3 years of age?"
 - "How prepared do you feel to counsel patients and their families on each of these fluoride topics?"
 - Activities: 13 items | proportion of patients that you provide the following oral health services
 - Barriers: 11 items | lack of staff, time, priorities, processes
- Descriptive statistics: frequency distributions, proportions, means, unpaired t-tests
- Logistic regression adjusted for career status (early vs. late)
- Bonferroni correction alpha of 0.0125 → p-value <0.002 considered significant

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OBJECTIVE

Assess change in oral health practices of healthcare providers who care for children aged 0-3 years in Community Health Centers participating in the Rocky Mountain Network for Oral Health Project.

CONCLUSIONS

Participants' oral health knowledge, abilities, and activities all improved significantly over the course of the project.

Participants did not report substantial barriers to providing preventive oral health services at medical visits.

Results suggest the use of eLearnings, coaching, quality improvement, population management, and incentive payments were associated with these improvements.

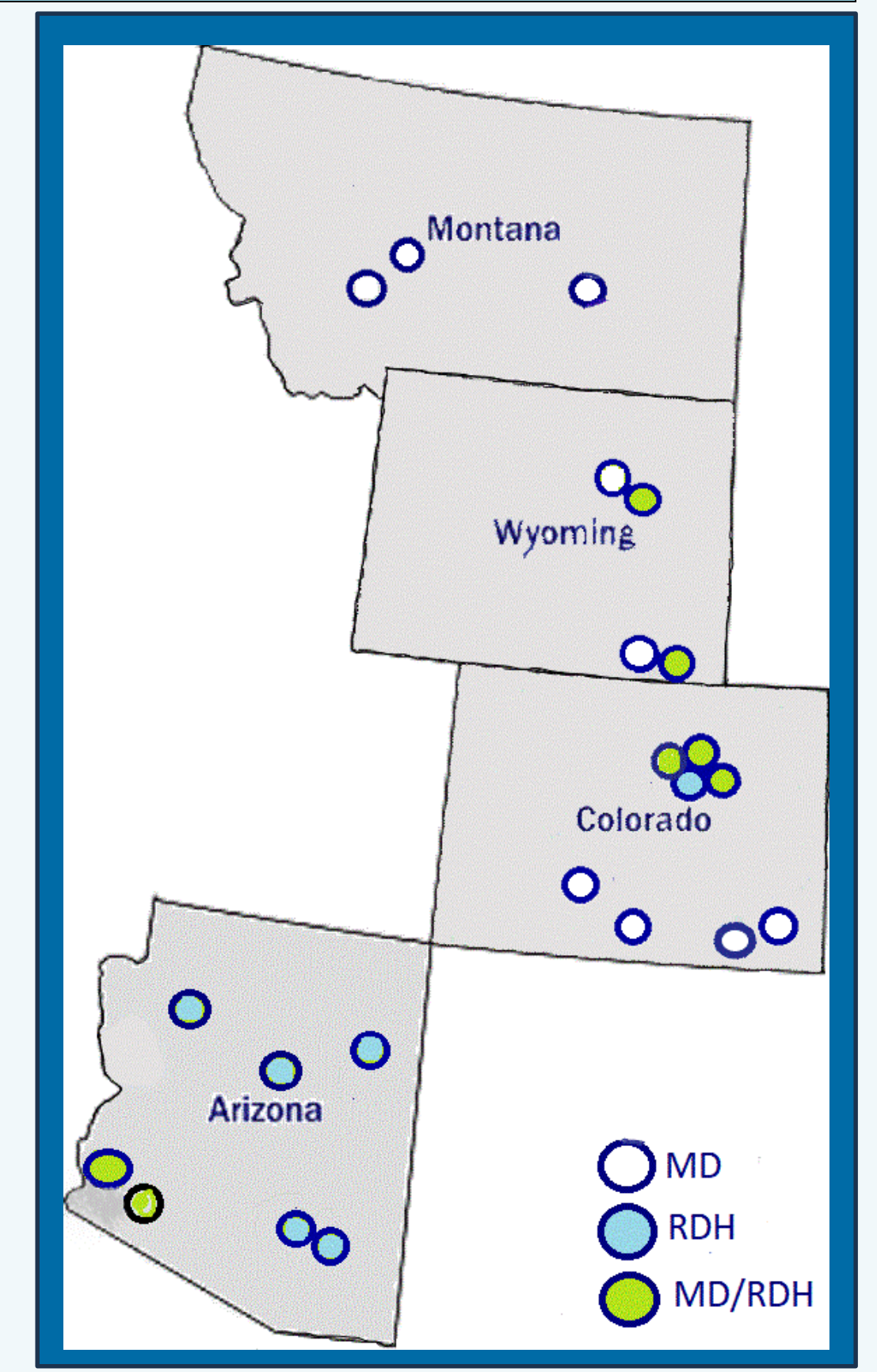
RESULTS

Baseline/Follow-Up Characteristics of Healthcare Providers Participating in RoMoNOH Project: 2020-2024

Characteristic	Item N	Overall, N=380	Baseline N= 213 Response:71%	Follow-Up, N=167 Response:52%	p-value
Age, Mean (SD)	368	39.65 (11.21)	39.51 (11.61)	39.84 (10.71)	0.77
Gender, n (%)	368				0.94
Male		68 (18%)	38 (18%)	30 (19%)	
Female		298 (81%)	168 (81%)	130 (81%)	
Career Stage, n (%)	378				0.48
Early Career		147 (39%)	88 (41%)	59 (35%)	
Mid to Late Career		221 (58%)	119 (56%)	102 (61%)	
Primary Role, n (%)	378				<0.001
Physicians (MD/DO)		106 (28%)	73 (34%)	33 (20%)	0.002
Nurse Practitioner		16 (4%)	9 (4%)	7 (4%)	0.99
Physician Assistant		35 (9%)	23 (11%)	12 (7%)	0.23
Medical Assistant		109 (29%)	60 (28%)	48 (29%)	0.80
Nurse		70 (18%)	44 (21%)	25 (15%)	0.20
Dentist		17 (4%)	1 (0.5%)	16 (10%)	<0.001
Dental Hygienist		19 (5%)	3 (1%)	16 (10%)	<0.001
Dental Assistant		8 (2%)	0 (0%)	8 (5%)	<0.001

Oral Health Domains

Item, n=380 (none missing)	Pre, N=213	Post, N=167	Adjusted Logistic Regression For Career Stage	
			Adjusted Odds Ratio	Adj. p-value
Overall Score: KNOWLEDGE			F(1,377)=34.39	p<.0001
First dental visit by age 1 year	154 (72%)	134 (80%)	1.62 (0.992, 2.64)	0.0541*
Community community water fluoridation?	87 (41%)	106 (65%)	2.671 (1.74, 4.1)	<0.0001**
Clinic established referral relationship?	173 (81%)	153 (93%)	3.14 (1.55, 6.36)	<0.0001**
Clinic someone responsible for referrals?	142 (67%)	144 (88%)	3.55 (2.05, 6.17)	<0.0001**
Overall Score: ABILITY (VERY ABLE?)			F(1,377)=29.80	p<.0001
Address concerns re: water fluoridation	62 (29%)	71 (44%)	1.86 (1.21, 2.86)	<0.0045
Explain fluoride mechanisms	83 (39%)	80 (49%)	1.5 (0.99, 2.27)	0.0549
Give instructions for home use of fluoride	80 (38%)	84 (51%)	1.76 (1.16, 2.66)	0.0078
Identify teeth with dental caries	31 (15%)	81 (49%)	5.54 (3.4, 9.03)	<0.0001
Inform parents how to brush child's teeth	83 (39%)	105 (63%)	2.69 (1.77, 4.09)	<0.0001
Inform parents on effects of bed bottle	117 (55%)	117 (70%)	1.93 (1.25, 2.96)	<0.0029*
Inform parents on effects of sugars	131 (62%)	116 (70%)	1.44 (0.93, 2.22)	<0.0988
Apply fluoride varnish	80 (38%)	104 (63%)	2.76 (1.82, 4.21)	<0.0001
Perform caries risk assessment	45 (21%)	87 (52%)	4.13 (2.64, 6.48)	<0.0001
Ask about parents' own oral health	57 (27%)	71 (43%)	2.10 (1.36, 3.25)	0.0008
Recommend when to begin using fluoride	84 (30%)	90 (54%)	2.75 (1.8, 4.2)	<0.0001
Ask about consumption water w/ fluoride	61 (29%)	77 (46%)	2.17 (1.42, 3.33)	<0.0004
Refer dental provider routine dental visit	105 (49%)	114 (69%)	2.24 (1.46, 3.42)	0.0002
Overall Score: BEHAVIORS			F(1,377)=76.79	p<.0001
Offer fluoride varnish to young children?	147 (69%)	157 (95%)	8.82 (4.09, 19.00)	<.0001
Identify teeth with dental caries?	37 (17%)	68 (42%)	3.45 (2.15, 5.54)	<.0001
Recommendation re: fluoride toothpaste?	62 (29%)	99 (61%)	3.86 (2.5, 5.97)	<.0001
Ask about consumption water w/ fluoride?	31 (15%)	68 (42%)	4.31 (2.63, 7.06)	<.0001
Refer dental provider routine dental visit?	71 (33%)	93 (58%)	2.75 (1.80, 4.21)	<.0001
Inform parents on how to brush correctly?	50 (23%)	88 (55%)	3.95 (2.54, 6.17)	<.0001
Inform parents on effects of bed bottle?	93 (44%)	115 (71%)	3.2 (2.07, 4.96)	<.0001
Inform parents on effects of sugars?	113 (53%)	119 (74%)	2.49 (1.6, 3.88)	<.0001
Perform caries risk assessment	48 (23%)	96 (60%)	5.15 (3.28, 8.1)	<.0001
Ask parents about their own oral health?	25 (12%)	58 (36%)	4.32 (2.55, 7.34)	<.0001
Apply fluoride varnish?	57 (27%)	90 (56%)	3.47 (2.25, 5.37)	<.0001
Contact dental directly to make appt?	51 (24%)	78 (48%)	2.91 (1.87, 4.52)	<.0001
Complete electronic referral to dental?	103 (48%)	102 (62%)	1.76 (1.16, 2.66)	0.0079
Overall Score: BARRIERS			F(1,377)=6.96	p=0.0087
Lack of dental providers to refer patients	34 (16%)	28 (17%)	1.14 (0.65, 1.98)	0.6514
Lack of time to make dental referral	81 (38%)	44 (27%)	0.59 (0.38, 0.93)	0.0225*
Lack of staff to make dental referrals	51 (24%)	30 (18%)	0.67 (0.40, 1.11)	0.1200
Lack of process to make dental referral	63 (30%)	28 (17%)	0.51 (0.31, 0.84)	0.0082*
Lack of adequate time during visit	80 (38%)	66 (40%)	1.06 (0.69, 1.62)	0.7889
Lack of oral health training	79 (37%)	32 (19%)	0.45 (0.28, 0.72)	0.0010
Fluoride varnish is not a priority	55 (26%)	28 (17%)	0.61 (0.37, 1.02)	0.0595
I'm not convinced of efficacy of fluoride	14 (7%)	11 (7%)	1.09 (0.47, 2.5)	0.8430
Family hesitancy or refusal	42 (20%)	25 (15%)	0.71 (0.41, 1.23)	0.2222
Lack of medical staff to apply fl varnish	73 (34%)	39 (24%)	0.62 (0.39, 0.99)	0.0429*



LIMITATIONS

- Lack of control limits direct correlations between improvements and RoMoNOH project.
- Participants' reporting bias possible.
- Dental provider participants in follow up influence results.

CONSIDERATIONS

- Assessment of parents' experience is needed.
- Scaling to additional practices will strengthen impact.
- Delivery of preventive oral health services increased over the project and reported elsewhere. Braun et al. JDR 2024.