Enhancing Nurse Practitioner Trainee Diagnostic Reasoning Utilizing the One-Minute Preceptor Model and The Reporter, Interpreter, Manager, Educator Framework

[1]Kristin Kopelson, [1]Shelly de Peralta, [2]Mary Cadogan, [2]Suzette Cardin, [2]Robert Lucero, [2]Nancy Pike

[1]Veterans Affairs, West Los Angeles; [2]UCLA School of Nursing

VA | U.S. Department of Veterans Affairs
VA Greater Los Angeles Healthcare System

UCLA

BACKGROUND

- Many preceptors have never received formal training on precepting techniques. Trainee cognitive organization can be enhanced using tools to guide clinical investigation and reasoning.
- The use of the One-Minute Preceptor (OMP) as a model to teach diagnostic reasoning skills and The Reporter, Interpreter, Manager, Educator [RIME] framework has been used successfully in family and internal medicine physician training programs. However, little is known about the use of the OMP model and RIME framework in NP training programs.

PROJECT AIM

To evaluate a standardized approach to precepting VA NP residency trainees using the OMP model and RIME scoring to improve diagnostic reasoning skills by 25% in 6 weeks.

METHODS

- Quality improvement project using **Plan, Do, Study Act (PDSA)** cycles.
- **Site and Sample**: Veterans Affairs Los Angeles NP Primary Care Residency Program, 11 VA Preceptors, 4 VA NP trainees, **12-week intervention**
- Preceptors were asked to precept and educate the trainees integrating OMP techniques [**Table 1.**] and evaluate trainee's diagnostic reasoning weekly using the RIME framework **[Table 2]**.
- Baseline preceptor education conducted. Preceptors performed a return demonstration of the OMP and RIME, role modeling educating the trainees.
- **PDSA 1 [Weeks 1-6]** Trainees educated on OMP and RIME. Case presentations were modeled using the OMP. At baseline and weekly, preceptors used RIME to score trainees and trainees scored themselves resulting in real-time feedback.
- **PDSA 2 [Weeks 7-12]**: Weekly individual scores revealed an outlier not at goal Week 7. One-to-one meetings between trainee and program director with feedback and individualized a plan for improvement.
- RIME scores, preceptor self-efficacy, and use of the teaching skills were measured pre-and post-intervention, and a program evaluation was completed by preceptors and trainees. Descriptive statistics were used to assess demographic characteristics and survey responses and t-tests for mean scores pre- and post-intervention.

Table 1. One-Minute Preceptor [OMP] Technique

Number	Microskill	Preceptor
1	Get a commitment	Observes diagnostic skill
2	Probe for evidence or understanding	Analyzes current knowledge and promotes new knowledge
3	Teach a general rule	Teaches a point not known to trainee
4	Reinforce what was done well	Identifies and solidifies accurate reasoning behaviors
5	Correct mistakes	Constructive feedback to prevent repeated mistakes

Note: Adapted from Neher, J. O., Gordon, K. C., Meyer, B., & Stevens, N. (1992). A five-step "microskills" model of clinical teaching. *The Journal of the American Board of Family Practice*, *5*(4), 419–424.

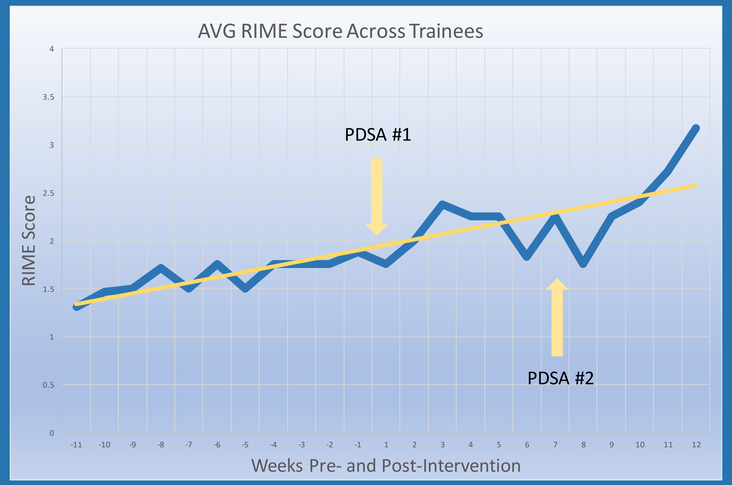
Table 2. RIME Framework

Stage	Definition	Score
Reporter	Reliably communicates clinical findings	1
Interpreter	Prioritizes and analyzes problems	2
Manager	Considers patient preferences	3
Educator	Consistently builds upon knowledge to apply to specific patients	4

Note: Adapted from DeWitt, D., Carline, J., Paauw, D., & Pangaro, L. (2008). Pilot study of a 'RIME'-based tool for giving feedback in a multi-specialty longitudinal clerkship. *Medical Education, 42(12), 1205–1209.*

*Preceptor use of the **OMP** model and **RIME** framework helps **trainee diagnostic reasoning***

Figure 1. RIME Scores Pre- and Post-Intervention



Inquiries: Kristin.Kopelson@VA.Gov

RESULTS

- Preceptor and trainee characteristics **[Table 3]**
- Mean RIME scores improved (1.62 [0.17] vs. 2.23 [0.38], p<.001) post 12-week intervention **[Figure 1; PDSA Cycle 1 and 2].**
- After PDSA Cycle 1, individual scores revealed an outlier not at goal and PDSA Cycle 2 started.
- **PDSA Cycle # 2** Mean RIME scores improved between PDSA Cycle 1 and 2 (2.07 [0.25] vs. 2.48 [0.39], p<.001), respectively **[Figure 1].**
- Self-efficacy and use of the teaching skills showed improved scores but were not statistically significant.
- Program evaluation surveys at week #12 showed preceptors (91%) and trainees (100%) found OMP model helpful to improve diagnostic reasoning and learning and RIME framework to evaluate progress.

Table 3. Characteristics of Preceptors and Trainees

Characteristics	Preceptors [n=11]	Trainees [n=4]
	Mean [SD] or n [%]	
Age, years (range 28-62)	43 [10.6]	32 [5.7]
Gender [Female]	11 [100%]	3 [75%]
Ethnicity		
White	5 [46%]	1[25%]
Asian	4 [36%]	2 [50%]
Black	2 [18%]	0 [0%]
Hispanic	0 [0%]	1 [25%]
Education or program enrolled		
Masters	7 [64 %]	3 [75%]
Doctor of Nursing Practice	4 [36 %]	1 [25%]
Years RN Experience	19 [11.5]	2.5 [3.1]
Years NP Experience (range 2-25)	13 [8.6]	N/A
Work Status		N/A
Full-time	10 [91%]	
Part-time	1 [9%]	
Years Precepting Experience (range 0-25)	7.5 [8.3]	N/A
Previous Preceptor Training [No]	9 [82%]	N/A
University Affiliation [Yes]	7 [64%]	N/A
Clinic Setting [Primary Care]	6 [55%]	N/A

CONCLUSIONS

- Use of the OMP case presentation model standardized precepting statistically improved trainee diagnostic reasoning skills as measured using the RIME framework.
- RIME framework self-scoring and scoring done by preceptors provided a foundation for initiating discussions about progress and improvement.
- A future VA multi-site evaluation in a larger cohort of NP preceptors and trainees is needed to validate findings.

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