

Optimizing Nursing Practice with Evidence-Based Protocol for Continuous Glucose Monitoring Use Among Native American Adults with Type 2 Diabetes

Amanda Wyatt, MSN, AGCNS-BC, CPH, Phyllis Sharps, PhD, RN, FAAN, Beverly Cotton, DNP

The Johns Hopkins School of Nursing, Baltimore, MD



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Background

- Native Americans have highest prevalence rate of diabetes ²
 - Negative impact on overall function and healthcare resources⁶
 - Evidence supports continuous glucose monitoring (CGM) ^{1,7,10}
 - Registered Nurses (RN) desire to use CGM but barriers exist
- Training opportunities enhance RNs ability to work to full scope of education and licensure ^{9,10,12}

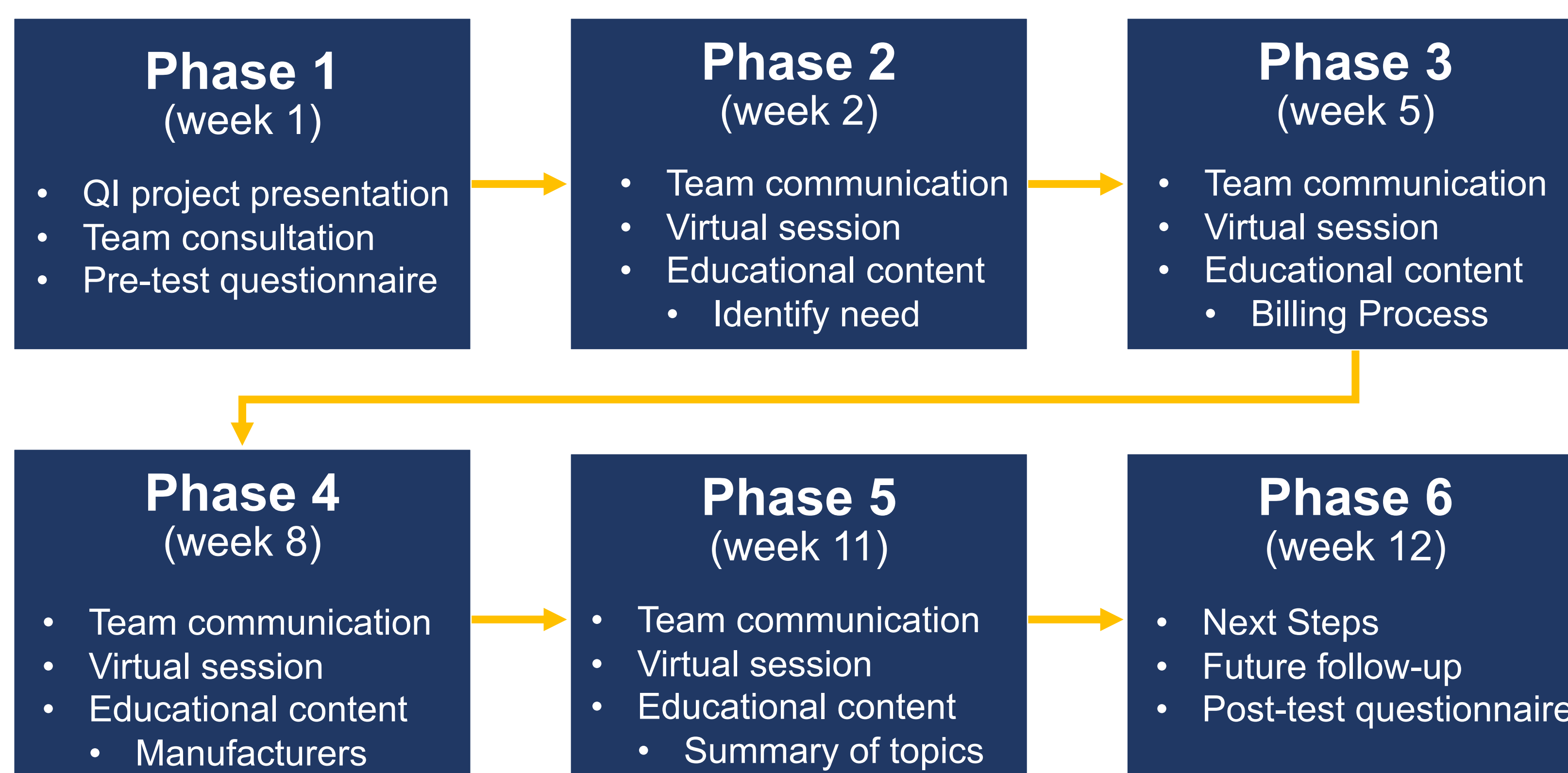
Purpose & Aims

- **Purpose:** to implement an evidence-based toolkit (TK) for CGM use among Native American adults with Type 2 Diabetes Mellitus (T2DM)
- **Aim:** to increase RN knowledge and competency for CGM use, in order to establish a CGM systematic implementation protocol for nursing practice

Methods

- **Design:** Pre-post test intervention
- **Setting:** Native American primary care clinic
- **Sample:** RNs and diabetes educator providing T2DM care
- **Intervention:** TK with CGM best-practices and intervention schedule categorized into six phases ^{1,12,13}
- **Measures:** Technology Acceptance Model Likert questionnaire ^{4,9}

Intervention



Results

Table 1: Participant Demographics

Variable	N	Percent
Ethnicity		
Native American	2	66.7
Non-Native American		
Education		
Bachelors	1	
Masters	2	66.7
Years of Experience		
Less than 2 years	1	33.3
2-4 years	1	33.3
Greater than 10 years	1	33.3

Table 2: Results of RN Knowledge Scale (N=3)

Variable	Pre-test Mean (SD)	Post-test Mean (SD)	Mean difference	p-value	Cohen's d
Confidence and competence	23 (9.54)	37.67 (1.53)	14.67	.11	2.2
Improving clinical practice	35.33 (4.16)	37.33 (4.62)	2	.66	.5
Preparation (intension and training)	20.67 (1.53)	19.0 (0)	-1.67	.18	.5
Ease of use	14.33 (2.52)	17.67 (2.08)	3.34	.29	1.5
Subjective norms	10.33 (1.53)	10.33 (1.53)	0	1.0	0

Discussion

- Cohen's d: medium to very large effect size 4 out of 5 sub-scales
- Highest score and largest effect in confidence and competence
 - Improved average of 14.67 points and effect size of 2.2
 - Ease of use and clinical practice
 - Preparation decreased average -1.67 points and effect size of 0.5
 - Subjective-norms sub-scale: no change
- Findings consistent with similar studies ^{3,5}
- Additional findings:
 - Working through overall process, stakeholder support, forming a team, establishing inventory
 - Challenges various insurance programs and billing process

Strengths

- RE-AIM framework relevant in knowledge translation ^{8,13}
- Strong administrative support
- Highly motivated and engaged team
- Model of practice for small/remote Native American clinics

Limitations

- Lack of published literature on Native Americans
- Limited access to local clinical data
- Small sample size of participants
- COVID-19 pandemic hindered staff perception
- Timing of post-survey could have resulted in limited qualitative responses or true reflection of experiences

Conclusion

- CGM is an effective approach to improving T2DM outcomes ^{7,9,11}
- Integrating CGM into nursing practice could help reduce the number of people with uncontrolled T2DM ^{9,12}
- Significant outcomes support a systematic evidence-based CGM TK as practical method for training and implementing
- Next steps: Funding and administrative processes

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