

Pediatric Care Management in Rural Oregon using Health Information Technology

Facilitators and barriers to implementing change in pediatric primary care clinics

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Context

One in 4 children under 18 have a chronic condition.¹ Children with special health care needs account for approximately 70% of all pediatric medical expenditures and experience avoidable complications due to fragmented, low quality, and uncoordinated care.² Research demonstrates that nurse-based care management and health information technology (IT) can improve clinical outcomes for patients with chronic diseases in urban settings.^{3,4} Dissemination of care management models to small- to mid-sized rural pediatric practice settings has not previously been studied.⁵

Research Objective

The overall study sought to evaluate the feasibility and acceptability, impact on clinical outcomes, and business case of implementing a nurse-based care management and health IT intervention called Care Management Plus (CMP) in rural primary care. Here we identify themes emerging from a series of interviews with four clinic cohorts regarding barriers and facilitators to successful program implementation.

Study Design

Setting

Six primary care clinics associated with the Oregon Rural Practice-based Research Network. Of these, two were pediatric-only practices.

Intervention

A nurse care manager (NCM) and the Care Management Tracking Software health IT system were introduced to the study clinics. NCMs were trained to:

- identify barriers to care and intervene;
- coordinate resources;
- teach patients to implement self-management strategies; and
- demonstrate quality and cost-effectiveness outcomes.

Clinicians were encouraged to refer patients based on a variety of medical and social factors. A software algorithm pre-selected patients with one or more chronic conditions who might benefit from program referral.

Outcome Measures

- Perceived barriers to delivering chronic illness care
- Challenges of practice change
- Facilitators of successful CMP implementation

Population Studied

Early intervention clinics were matched with delayed intervention control practices. Pre- and post-intervention semi-structured interviews were analyzed using grounded theory to identify themes around implementation barriers and facilitators.

Selected key characteristics of pediatric study clinics

Intervention Group	Immediate	Delayed
Physicians	4	5
Other Clinicians	0	2
Patients in Practice	6,180	12,813
Business Model	Private practice	
Electronic Health Record	Practice One	Misys Healthcare



Participants

Clinician champions, clinicians, clinic administrators, and care managers. Total of 45 pre- and 36 post-intervention interviews (all clinics, including pediatric practices).

Principal Findings

Barriers to Successful Implementation

Barriers included lack of patient resources or willingness to change behavior; clinician time, payment structure, and other resource concerns; role definition clarity; and IT implementation challenges.

	Barriers to Chronic Disease Management in Current Practice	Barriers to Practice Change (Implementing Nurse Care Management)
Patient Factors	<ul style="list-style-type: none"> • Behavioral barriers • Lack of patient resources 	<ul style="list-style-type: none"> • Resistance to change in procedures, interactions
Clinic Factors	<ul style="list-style-type: none"> • Access to care • Time: payment structure and 15-minute office visits • Lack of pediatric subspecialists in rural areas (especially allergists and endocrinologists) • Lack of access to other resources (speech and occupational therapy) 	<ul style="list-style-type: none"> • Clarifying role definitions, interactions • Time • Money: expense of NCM position and payment structure • Resistance to practice change • IT implementation challenges • Software not designed for pediatric practice needs

In the words of the practice staff...

"Families connect comfortably with [the care manager] and have enough time to express other issues that I might not be told or have the time to fully explore." ~Clinician

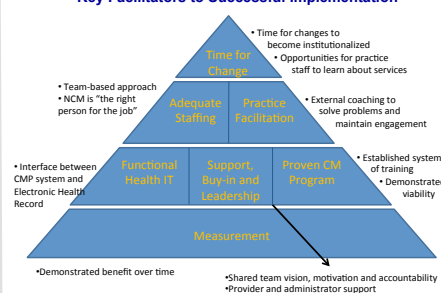
"It is important that community resources be known by someone (like myself) because there is no way patients could possibly know of them." ~Care Manager

"An ideal outcome would be for the practice to become more efficient and effective, with no patients falling through the cracks. We are closer than we were. We are tracking the Type 1 diabetics and doing appropriate follow-up. We recently had a meeting regarding the asthma patients and are implementing a call back plan. We are beginning to use the system for patients with mental health needs." ~Clinician

"The process brought educational benefit to the entire staff but to [the care managers] mostly. I think the database provides a better tool for keeping track of folks and created a method for better consistency of services." ~Clinician

"The most important lesson learned for implementation is to keep talking and communicating..." ~Clinic Administrator

Key Facilitators to Successful Implementation



Qualitative Themes of Ideal Outcomes, Post-Implementation Successes, and Facilitators and Challenges to Successful Implementation

Pre-Implementation Interviews	Post-Implementation Interviews		
Ideal Outcomes	Post-Implementation Successes	Facilitators to Success	Challenges to Success
Care coordination and patient follow-up	NCM incorporated into routine care	NCM is "the right person for the job"	Finding the right person for the NCM Role
Improved patient outcomes/quality of care	Systematic way to track care and communicate outcomes	Leadership across cohorts	Limited resources (time, financing, personnel, specialists)
Increased clinic efficiency	Improved patient care and knowledge of community resources	Developing a team-based care approach	Lack of support from clinic administration/management

Conclusions

Many challenges and successes experienced by the rural pediatric clinics were similar to those of adult primary practice clinics implementing care management. Clinician leadership and buy-in at all clinic levels are critical to CMP success. Researchers must work within a clinic's workflow and data management systems and adapt study timelines/goals to fit clinic realities. However, some other challenges were unique to the pediatric practices, notably around HIT design and access to pediatric specialists and community resources. Clinicians felt their complex pediatric patients received better care and the program was an overall success.

Implications for Policy, Delivery & Practice

The pediatric practices experienced notable benefits from implementation of care management. To ease adoption of similarly beneficial programs, clinics need financial resources, HIT tools, provider engagement, and perhaps most importantly, time for change.

Staff emphasized the importance of payment reform in promoting widespread adoption of CMP programs. To encourage adoption by resource-strained clinics, policies must institute reimbursement structures for CM services.

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