VCHIP Care Coordination Summit

Background and Purpose

The Vermont Child Health Improvement Initiative (VCHIP) is a population based maternal and child health services research and quality improvement program at the University of Vermont. VCHIP has partnered with the Vermont Department of Health and the UVM Children's Hospital Specialty Clinics to improve access to care, quality of care and the coordination of services for Vermont children primarily covered by Medicaid under the Child Chronic Care Initiative (CCCI) project.

Previous work completed by the VCHIP team sought to identify children at most need for improved access to care, quality of care and coordination of services. Our initial work focused on performing a literature review of common methods to identify children with complex medical conditions. The Pediatric Medical Complexity Algorithm (PMCA) has been used to identify children with complex chronic conditions (Simon, Haaland, Hawley, Lambka, & Mangione-Smith, 2018) predicated on administrative claims data. Our work has focused on identifying children and youth with complex-chronic disease to provide data to clinical teams to help guide improvement initiatives resulting in improved outcomes and reduced costs, as well as to advise on changes in policies to result in more efficient and effective use of resources.

Efficient and effective systems to coordinate care for children and youth with special health needs continues to rise as a priority area. There is significant momentum around this work, and we recognize past, present, and future efforts of our stakeholders and partners. With this energy comes a desire to convene our stakeholders and partners to ensure that there is alignment in improvement opportunities, measurement, and evaluation between organizations. Our work also provides an opportunity to promote shared learning across our collaborators and partners.

Vision: The Care Coordination Summits will bring together healthcare professionals, organizations, patients, families, and other interested parties around a shared vision for improving and uniting care coordination efforts for children and youth with special health needs.

Goals:

- Assess the current landscape of care coordination systems for children and youth with special health needs in Vermont.
- Partner with stakeholders to:
    - Gain consensus of priority areas to address
    - Support shared learning and identification of improvement strategies
    - Agree on evaluation and measurement strategies

Process

Planning for the Care Coordination Summits has been a collaborative process with partners from Vermont Department of Health and the UVM Children's Hospital. Using several approaches to understand the current care coordination system, we began to explore data, identify stakeholders, facilitate conversations with key stakeholders, and review past improvement efforts.

Data included:

- Categorization of children seen in the Children's Specialty Center using PMCA assessment
- Key stakeholder discussions
- Patient and family listening sessions
- Pre-engagement survey

Emerging Priority Areas

- Improved communication
- Clearly defined roles and responsibilities of care team members
- Increased understanding of the different models of care coordination
- Efficient and effective use of technology
- Leveraging data to monitor progress

Emerging priority areas were identified through:

1. National Care Coordination Standards for Children and Youth with Special Health Care Needs https://www.nashp.org/national-care-coordination-standards-for-children-and-youth-with-special-health-care-needs/
2. Stakeholder discussions
3. Patient and Family experiences
4. Pre-Engagement survey responses

Health equity is foundational to our work, and improvement strategies should aim to reduce barriers to accessing care and encompass a variety of supports to acknowledge the diversity among families. Care coordination should be based on the premise of health equity, which is the concept that all children and families should have an equal opportunity to attain their full health potential, and no barriers should prevent children and their families from achieving this potential. (VanLandeghem, 2020)

Call to Action

Our work will begin with the convening of the Care Coordination Summits and will continue with ongoing meetings bringing together stakeholders and partners to advance the collaborative work optimizing care coordination services for children. We acknowledge and thank the stakeholders, partners, and families that have committed their time to this endeavor. Your guidance and participation are valued.

References:

Simon, T. D., Haaland, W., Hawley, K., Lambka, K., & Mangione-Smith, R. (2018). Development and Validation of the Pediatric Medical Complexity Algorithm (PMCA) Version 3.0. *Academic pediatrics*, *18*(5), 577–580. https://doi.org/10.1016/j.acap.2018.02.010

VanLandeghem, et al; 2020; The National Care Coordination Standards for Children and Youth with Special Health Care Needs; https://www.nashp.org/national-care-coordination-standards-for-children-and-youth-with-special-health-care-needs/ last accessed March 14, 2022.

Appendix

Appendix A	**VCHIP Child Chronic Illness (CCCI) Project Report**
Appendix B	**Selected Results of Care Coordination Self-Assessment**

Child Chronic Care Initiative (CCCI) Project
VCHIP Health Services Research Team Report, Fiscal Year 2021

Appendix A

This brief report highlights some of the work of the VCHIP Child Chronic Care Initiative and Health Service Research Teams. Through our initiatives, we have identified and implemented a method for categorizing children with complex medical conditions to better understand the population of children and youth at most need for improved access to high quality care and coordination of services in Vermont.

The analyses, conclusions, and recommendations from the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) data are solely those of the study authors and are not necessarily those of the Green Mountain Care Board (GMCB).

What is the Pediatric Medical Complexity Algorithm?

The PMCA is a validated algorithm used to categorize children by medical complexity developed through a federally funded Pediatric Quality Measures Program. The algorithm categorizes children into different levels of medical complexity based on up to three years of diagnoses that are identified as chronic, malignant, progressive, and/or involve multiple body systems (Table 1). We applied the PMCA to each child using diagnoses found in their medical claims in 2019 plus any diagnoses on any medical claims that the child had in the two previous years.

Table 1. Pediatric Medical Complexity (PMCA) classification[a] categories based on clinical criteria and count of affected body systems

PMCA Category	Criteria	Number of Claims
Chronic-Complex Disease[b]	Progressive Condition	>1 Claim
	Malignancy	>1 Claim
	Other	>2 claims per body system for 2 different body systems during the measurement period
Non-Chronic-Complex Disease		>2 claims per body system for 2 different body systems during the measurement period
Without Chronic Disease		None of the above during the measurement period

a. Classification based on the more conservative version of the algorithm
b. A classification as Chronic-Complex Disease can be applied if any one of these three criteria are met.

What UVM Children's Specialty Clinics have high proportions of "Complex Chronic" patients?

The top five UVM Children's Specialty Clinics in 2019 that had the highest percentage of patients classified as "Complex Chronic" (as per the Pediatric Medical Complexity Algorithm (PMCA), indicating that they had multiple body systems affected, or a malignant or progressive disease) were Developmental Pediatrics (86%), Hematology/Oncology (70%), Genetics (67%), Neurosurgery (60%), and Endocrinology (55%), followed closely by Neurology (52%) and Pediatric Psychiatry (50%) (Figure 1). These higher percentages of complex chronic conditions at these clinics indicates that these patients could have co-morbid conditions that require care coordination with other clinics.

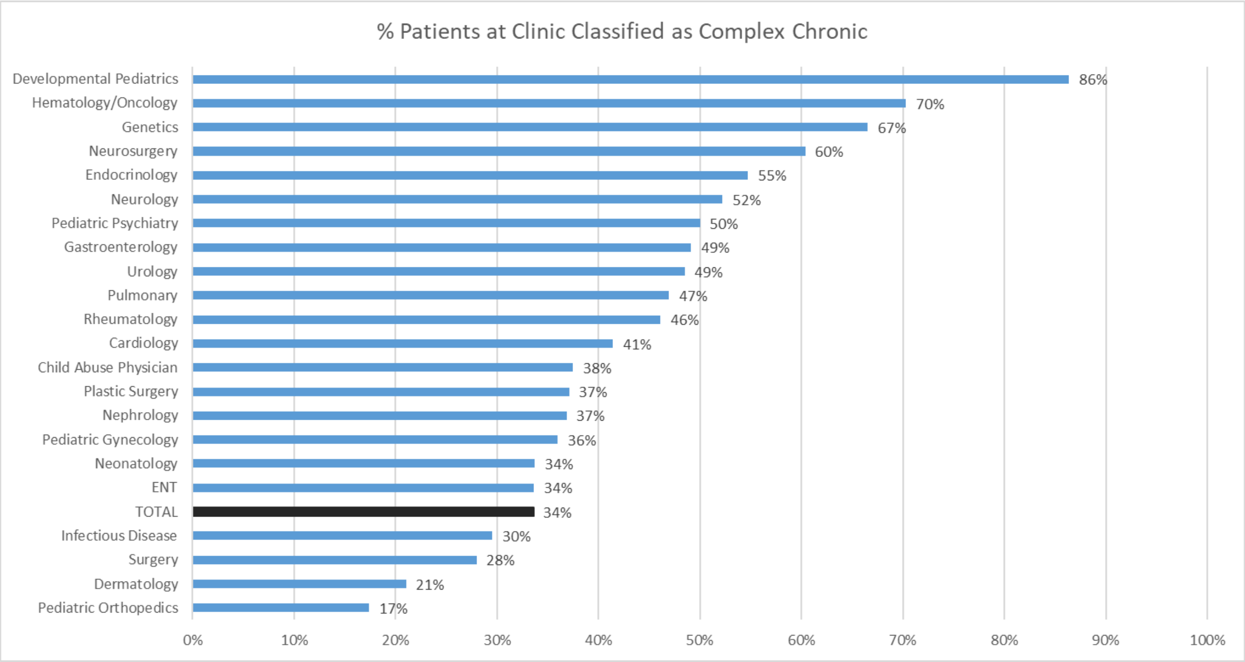


Figure 1. The proportion of patients at each clinic classified as complex chronic (two or more body systems affected and / or progressive illness and/or malignancy, over more than one medical claim in a three-year period).

For example: Half (50%) of patients seeking services in Pediatric Psychiatry were classified as “Complex Chronic”, as per the Pediatric Medical Complexity Algorithm (PMCA), indicating that these patients seeking care for behavioral and mental health are also likely seeking care from other Children’s Specialty Clinics.

How is medical complexity distributed by age?

Among all patients visiting the Children's Specialty Clinic in 2019, an estimated 31% of patients 1-4 years were classified as "Complex Chronic" as per the Pediatric Medical Complexity Algorithm (PMCA), as compared to an estimated 50% of those 18-21 years (Table 2). Also shown below is the distribution of medical complexity across all age groups and for patients with Medicaid or other insurance.

Table 2. Select demographics of Vermont patients with at least one visit to a Children's Specialty Clinic by PMCA categorization, 2019

		Pediatric Medical Complexity Categories[a]		
		Non-Chronic (Healthy) %	**Non-Complex Chronic %**	**Complex Chronic %**
Age Category (%)	0 to 11 months	56%	26%	18%
	12 months to 4 years	39%	30%	31%
	5 to 8 years	38%	31%	31%
	9 to 11 years	36%	30%	34%
	12 to 14 years	32%	32%	36%
	15 to 17 years	25%	33%	42%
	18 to 21 years	23%	28%	50%
	22 to 26 years	26%	28%	46%
Medicaid Majority[b] (%)	Yes	30%	30%	40%
	No	48%	31%	21%
Total (%)		36%	30%	34%

a. PMCA Categories are (1) Complex Chronic: Affecting more than 1 body system and either progressive or malignant; (2) Non-Complex Chronic: Only 1 body system is affected; (3) Non-Chronic: No progressive nor malignant conditions.
b. Medicaid status is determined by any Medicaid coverage during the evaluation year.

Why Complex Chronic patients need care coordination

Patients that were classified as "Complex Chronic" as per the Pediatric Medical Complexity Algorithm (PMCA), represented the largest group of patients to visit 2 (51% Complex-Chronic), 3 (72%) or 4 or more (87%) clinics (Table 3). It was not surprising that complex chronic patients visit more clinics, as they have more body systems affected that would be addressed by different clinics within the CSC. These data confirm that complex patients are visiting more clinics and are in need of care coordination with those clinics.

Table 3. The percentage (%) of Vermont patients by the number of Children's Specialty Clinics visited and their PMCA categorization, 2019

	Pediatric Medical Complexity Categories (PMCA)[a]		
	Non-Chronic (Healthy)	**Non-Complex Chronic**	**Complex Chronic**
	%	**%**	**%**
1 clinic	41%	31%	28%
2 clinics	21%	28%	51%
3 clinics	8%	20%	72%
4+ clinics	omitted[b]	omitted[b]	87%

a. PMCA Categories are (1) Complex Chronic: Affecting more than 1 body system and either progressive or malignant; (2) Non-Complex Chronic: Only 1 body system is affected; (3) Non-Chronic: No progressive nor malignant conditions, mostly or all acute visits and preventative care. Presence of body systems was across more than one claim in a three-year period.

b. Data are omitted since to avoid calculation of cells sizes <11; per our Data Use Agreement, we do not share these data

Reference:

Simon, T. D., Haaland, W., Hawley, K., Lambka, K., & Mangione-Smith, R. (2018). Development and Validation of the Pediatric Medical Complexity Algorithm (PMCA) Version 3.0. *Academic pediatrics*, *18*(5), 577–580. https://doi.org/10.1016/j.acap.2018.02.010

Care Coordination: A Self-Assessment for Rural Health Providers and Organizations

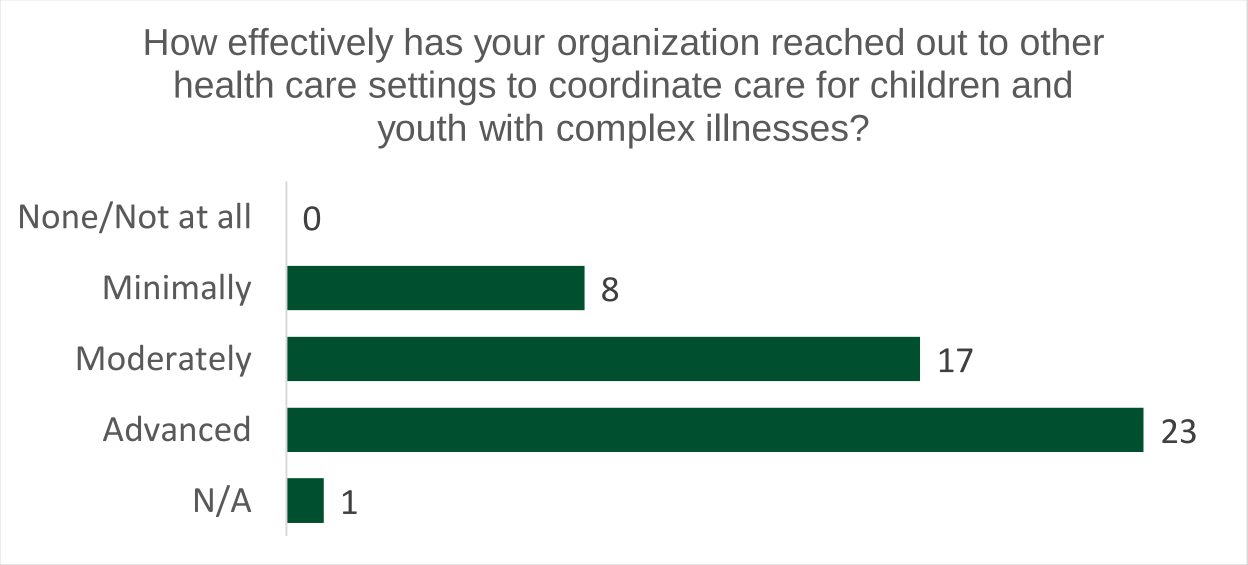
Appendix B

This Care Coordination Self-Assessment Tool helps healthcare leaders assess the current state of critical elements in care coordination and develop and enhance care coordination efforts

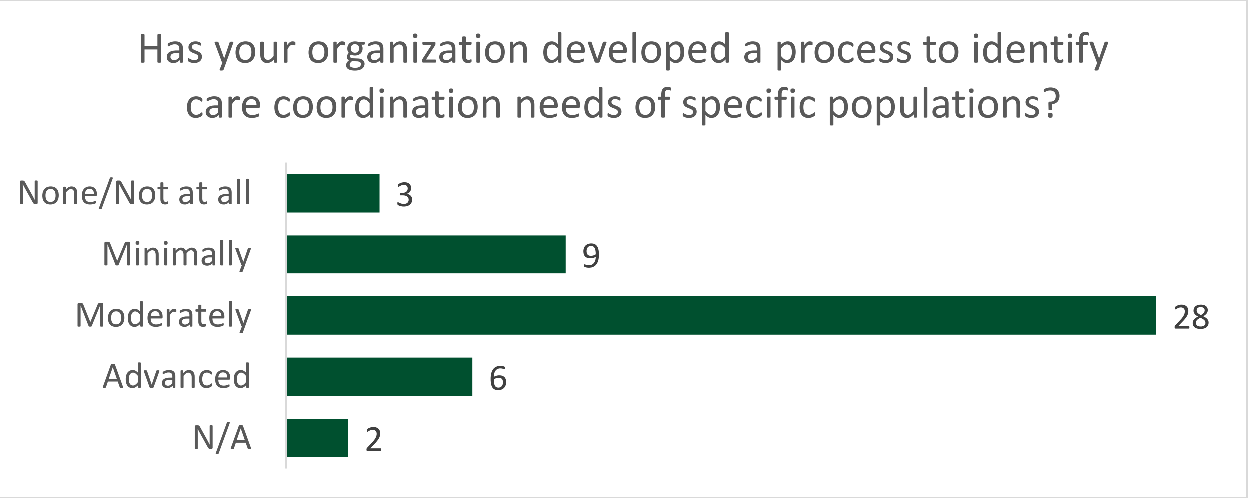
There are 21 questions grouped within 5 Domains. We are presenting results for five questions.

- **Leadership and Planning**

- **Partnership and Community**



- **Operations and Processes**



- **Data Collection, Management & Analysis/Outcomes, and Impact**