

# ENHANCING HEALTHCARE MANAGEMENT OF PEDIATRIC HEART DISEASE – CONNECTING SCHOOL HEALTH PLANS TO MEDICAL CARE TEAMS

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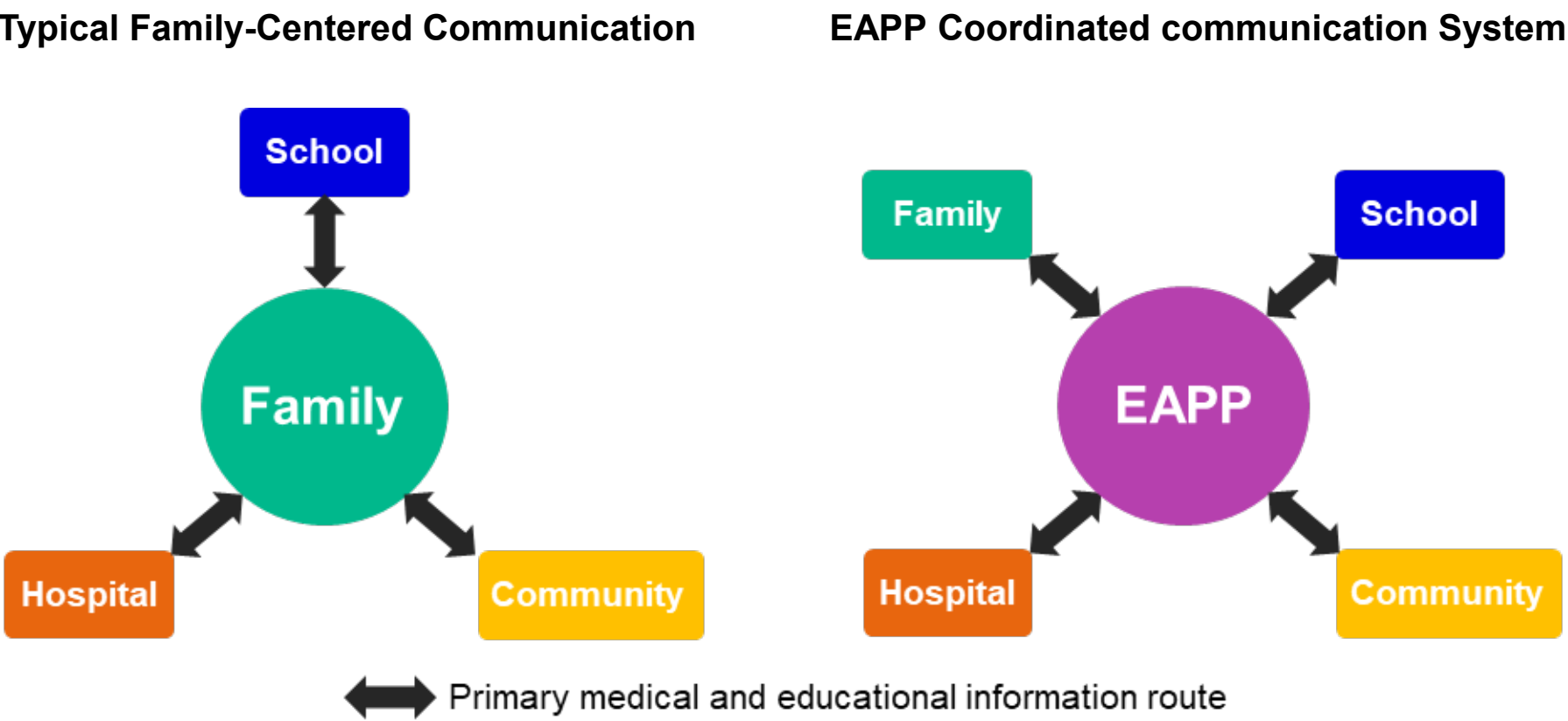
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Herma Heart Institute

## BACKGROUND

- Children with heart disease experience increased risk for insufficient school healthcare support<sup>1</sup> and neuropsychological delays linked with poor educational outcomes and reduced overall quality of life.<sup>2</sup>
- The **Educational Achievement Partnership Program** (EAPP) is a unique hospital service supporting school health and learning needs of children with heart disease by integrating healthcare management and education planning among multidisciplinary teams.<sup>3</sup>

### Unique Communication System



- To manage healthcare needs in an educational environment, school nurses create individualized School Health Plans (SHPs) for children with known medical conditions.<sup>4</sup>
- Unlike individualized education plans, no state or federal laws regulate SHP standards, and SHPs vary in their level of comprehensiveness, ranging from very minimal information about the child's medical diagnoses to very complex plans for managing symptoms at school.
- To provide recommendations for improving healthcare management at school, the EAPP created a novel tool, the “**Medically-Informed School Healthcare Management And Recommended Treatment Plan**,” or **MI-SMART Plan**.

## SPECIFIC AIMS & HYPOTHESES

- Aim 1** Demonstrate the comprehensiveness of MI-SMART Plans compared to pre-intervention SHPs.
- Hypothesis 1 – Compared to pre-intervention SHPs, MI-SMART Plans will be more comprehensive: contain more detailed information in more domains of school health considerations.*
- Aim 2** Demonstrate the feasibility of MI-SMART Plan incorporation into real world school practices.
- Hypothesis 2 – Schools will incorporate MI-SMART Plan details and domains into post-intervention SHPs that are more comprehensive than pre-intervention SHPs.*

MI-SMART Plan – Key Domains			
1. Diagnoses	11. Physical Education		
2. Description of Diagnoses	12. Activity Restrictions		
3. Surgical & Treatment History	13. Water		
4. Allergies	14. Bathroom		
5. Medications	15. School Absences		
6. Medical Equipment	16. Transportation		
7. Physiological Limitations	17. Attendance Plan		
8. Symptom Management Guidelines	18. School Health Services		
9. Health & Safety Precautions	19. COVID-19 Precautions		
10. Self-Limited Activity	20. Other		

## METHODS

- For all participants, EAPP staff:
  - ✓ Collected pre-intervention SHPs
  - ✓ Conducted a comprehensive assessments
  - ✓ Created customized MI-SMART Plans
  - ✓ Shared and explained MI-SMART Plans with patients' school teams
  - ✓ Collected post-intervention SHPs
- Pre-intervention SHPs and MI-SMART Plans were examined: domains were tracked for each plan across 20 key areas of school health.
- Pre- and post-intervention SHPs were compared for each patient: new or comprehensively expanded domains related to information in the patient's MI-SMART Plan were tracked.
- The IRB approved this study: all participants provided informed consent.

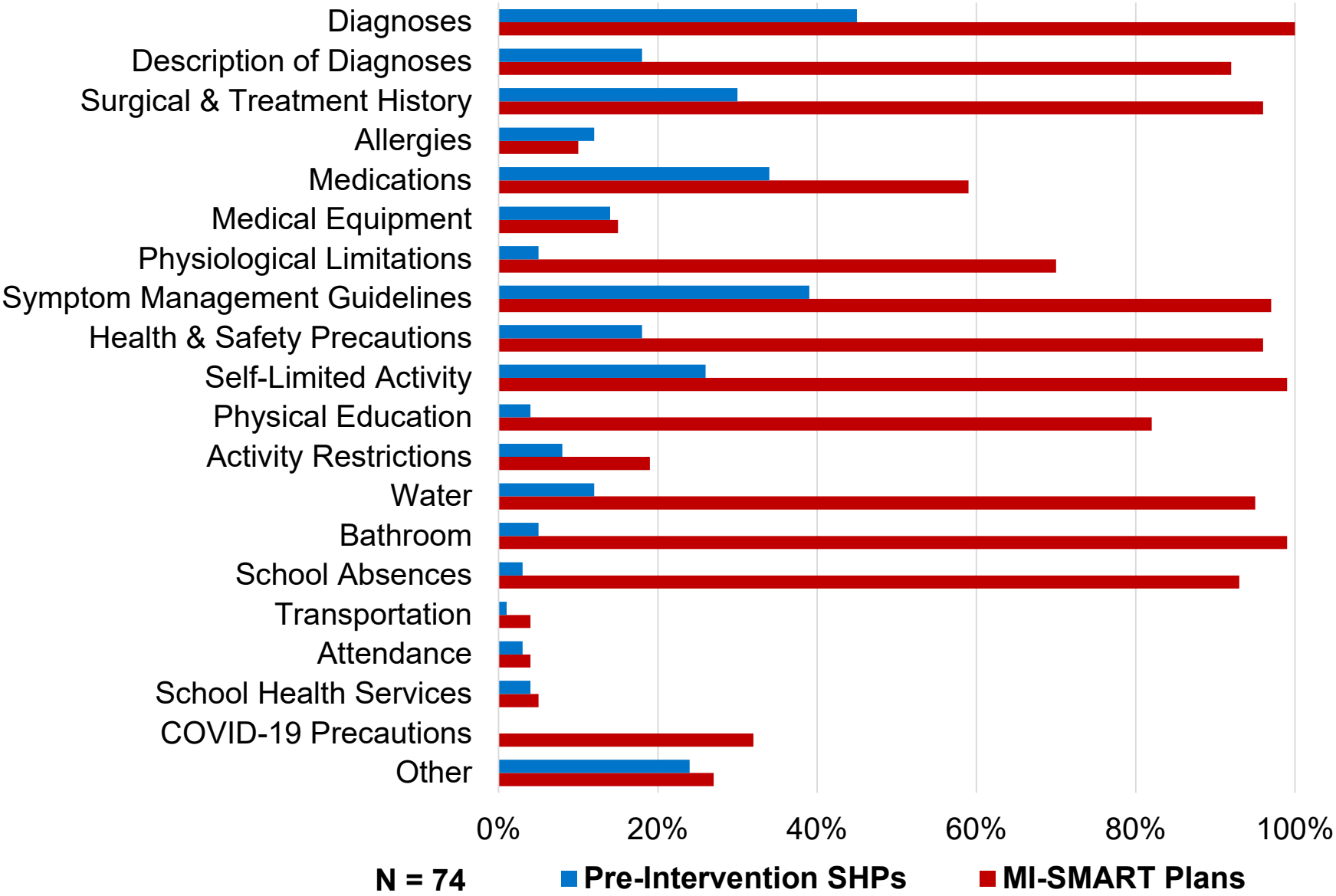
## PARTICIPANTS

- 74 cardiac patients were enrolled from January 2019 – June 2020.

N = 74		Demographics	
Age at Enrollment	Mean: 9.5 years		Range: 3.0 – 16.1 years
School Level	Pre (K3-K5) = 26%		Elementary (1 <sup>st</sup> –5 <sup>th</sup> ) = 38%
	Middle (6 <sup>th</sup> –8 <sup>th</sup> ) = 24%		High (9 <sup>th</sup> –12 <sup>th</sup> ) = 12%
Gender	Male = 58%		Female = 42%
Ethnicity	Caucasian = 76%		Hispanic = 13%
	African American = 4%		Other = 7%
Cardiac Disease	1V = 37%	2V = 55%	Other = 8%
School Type	Public = 86%		Private = 14%
n = varied			
School Community, n=71	Urban = 25%	Suburban = 51%	Rural = 24%
Household Income, n=61	<\$20K = 13%		\$20-50K = 15%
	\$75-100K = 15%		\$50-75K = 28%
Maternal Education, n=72	>\$100K = 29%		
	≤HS = 17%	Some college = 37%	≥BA degree = 46%

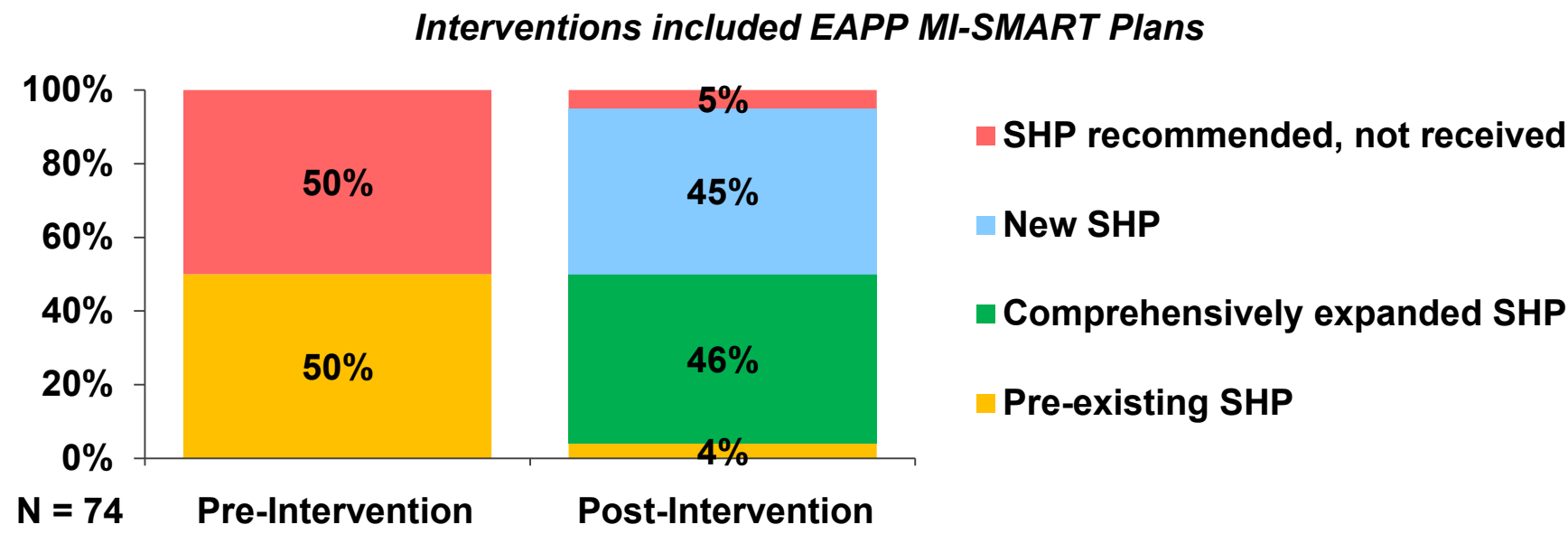
## RESULTS

### Aim 1 – Comprehensiveness

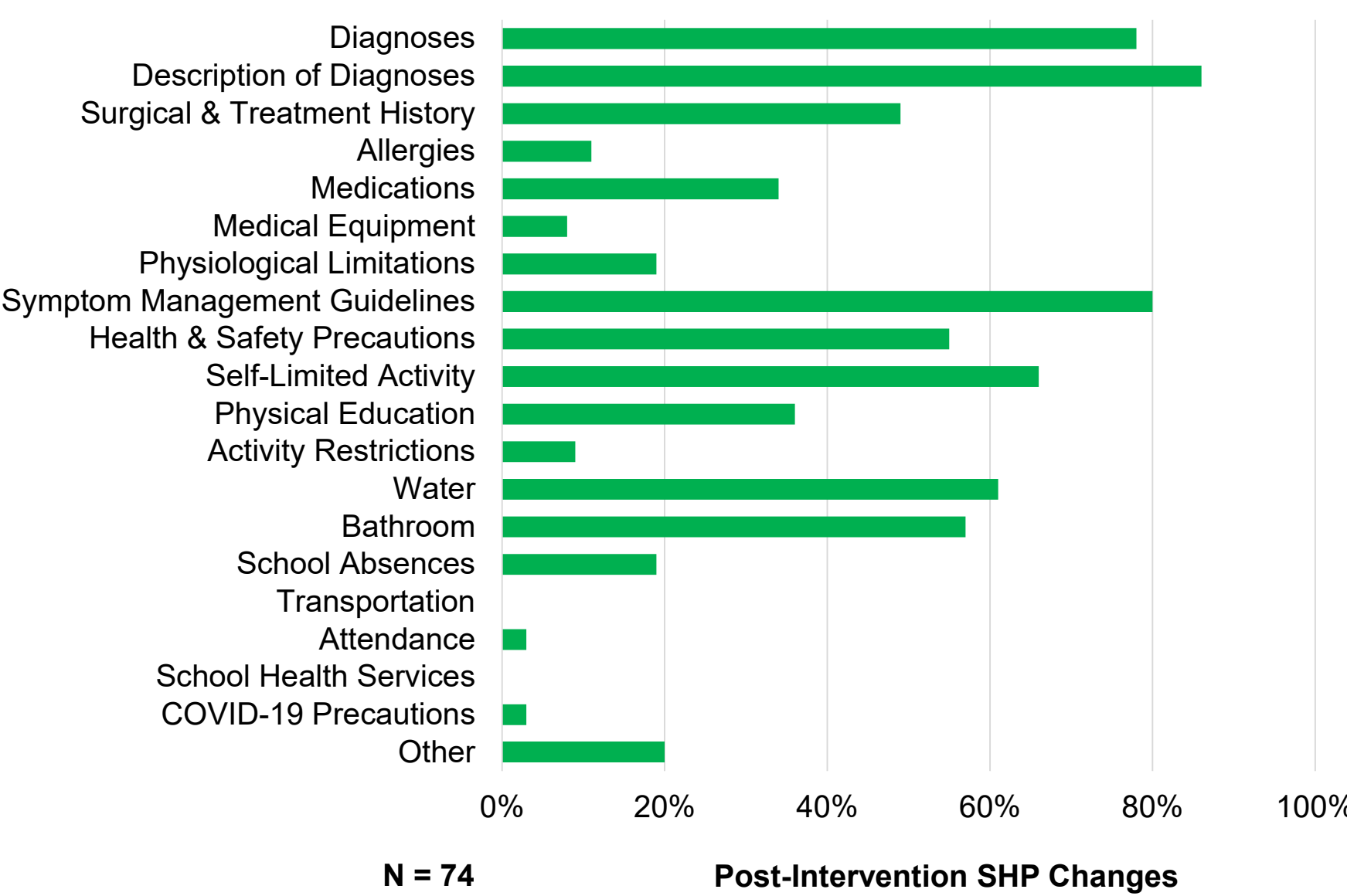


- 50%** of participants (n = 37) had pre-intervention SHPs, with an average of **6** domains per plan.
- The most common pre-intervention SHP domains were diagnoses (**45%**), symptom management guidelines (**39%**), and medications (**34%**).

### SHP Rates Pre- & Post-Intervention



### Aim 2 – Feasibility



- 100%** of participants received MI-SMART Plans (N = 74), with an average of **12** domains per plan.
- 95%** of participants had post-intervention SHPs, and **91%** were new or comprehensively expanded, with an average of **7** new/modified domains per plan.
- Participants with pre-intervention SHPs had an average of **6.2** domains added/expanded in post-intervention SHPs based on MI-SMART Plans.
- Participants without pre-intervention SHPs had post-intervention SHPs with an average of **7.6** new domains based on MI-SMART Plans.
- The most common post-intervention SHP domains added/expanded based on MI-SMART Plans were description of diagnoses (**86%**), symptom management guidelines (**80%**), and diagnoses (**78%**).

## CONCLUSIONS

- Without medical training specific to a child's particular illness, school staff may mismanage medical symptoms, underestimate health limitations, and overlook related educational deficits.
- The EAPP's novel MI-SMART Plan presents a comprehensive and feasible method for relaying healthcare information to school staff and enhancing school health plans for cardiac patients.
- Subjective feedback from school staff who received MI-SMART Plans was very positive, with many requesting this type of healthcare information for children with other types of medical conditions.
- Follow-up is needed to investigate methods to increase the availability of MI-SMART Plans to larger populations of school-aged cardiac patients and children with other chronic illnesses.

### REFERENCES

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### DISCLOSURES

There are no financial relationships to disclose or Conflicts of Interest (COIs) to resolve.