

Pedi-BOOST

Peds Effective Discharge: Better Handoff to Home through Safer Transitions Implementation Guide

Welcome to Pedi-BOOST!

Congratulations on your commitment to improving the care of your pediatric patients. This implementation guide is designed to facilitate the implementation, evaluation and maintenance of the Pedi-BOOST toolkit, adapted from Project BOOST for pediatric use by the University of California (UC) Integrating Patient Care and Health Professions Education to Improve Care Transitions: The UC Healthcare Quality Improvement Network. We recognize that each institution is unique in terms of their experience conducting quality improvement programs, available resources, and existing discharge procedures and processes. Therefore, we have designed interventions with the expectation that they will be adapted to facilitate their integration into daily practices at your institution.

This guide acknowledges that participants will have differing experiences in interdisciplinary quality improvement. Therefore, this guide has been designed to allow site leaders to follow a clear linear path through the content, or skip around to meet the needs of local participants. However, this guide will focus primarily on pediatric-specific needs, and thus a number of elements related to quality improvement basics are not included in this guide. Please refer to the SHM BOOST website for basic QI information and tools:

http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_CareTransitions/html_CC/01HowtoUse/00_Howtouse.cfm.

Below you will see a suggested process, working left to right through the Introduction and First Steps; the second section on Analysis and Tracking outcomes; and the final and most detailed section on the Pedi-BOOST intervention and Continuing to Improve. The interventions presented include using a teach-back process during discharge education, identifying patient-specific readmission risks to better tailor communications and providing outpatient providers and receiving sites with an effective discharge record. For high-risk patients, scheduling an outpatient follow-up visit and or conducting a 72-hour follow-up call with the patient and/or caregivers is also recommended.

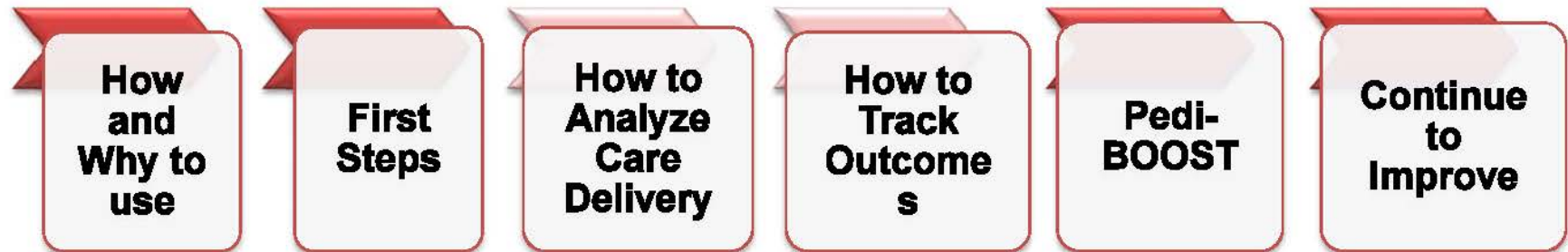
Thank you for committing to making the discharge process more efficient, effective, timely, equitable, patient-centered, and safe for our pediatric patients.

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Introduction

Best Practices

- Why should you act?
- Literature review

Needs Assessment

Build a Team

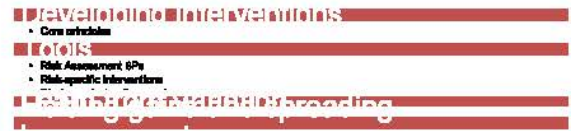
- Team Rules

Data Collection

- Quantitative
- Qualitative

Trending Data

- Reporting



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Introduction

Best Practices: Why and How to Use this Pedi-BOOST Guide

Why is care transition at hospital discharge an important issue?

Fragmentation of care following hospital discharge is related to lower quality of care for patients and increased unplanned re-admissions. Approximately 1 in 5 patients discharged from the hospital experience an adverse event, with more than half of these events being preventable.^{1,2} Communication deficits have been identified as important reason for these adverse events. Direct communication between physicians at the time of hospital discharge occurs less than 20% of the time, and discharge summaries often contain insufficient information for primary care physicians who follow-up patients after discharge.³ Many patients have difficulty understanding their diagnosis and treatment plans and in many cases patients are discharged pending the availability of results of investigations.^{4,5} Poor discharge processes cause significantly lower patient satisfaction, worse clinical outcomes and higher hospital readmission rates. In one study, 37% of parents surveyed about their child's discharge reported an adverse event or near miss. Reported issues related to medication and equipment problems, and communications between staff and also between staff and families that resulted in actions such as repeated testing.⁶ In addition, communication to the primary care provider is not consistent, whether by fax, call or electronic record sharing, resulting in failure to have follow-up appointments generated.⁷ Special populations such as neonates or teens with behavioral health concerns are at even greater risk for frequent returns to the emergency department, other morbidity or even mortality^{8,9}.

Although re-admission studies have been predominantly performed in the adult population, more interest in this for children has surfaced. The Children's Health Insurance Program Reauthorization Act has identified pediatric readmissions as one of the first measures it will develop¹⁰ and the federal Partnership for Patients initiative has targeted a reduction of pediatric readmissions by 20%¹¹. Rates for children are overall low, with one recent estimate at 6.5%; however, rates do vary considerably between institutions which suggests there is an opportunity for improvement with attention to the discharge process¹². In addition, studies of children with complex conditions have demonstrated a higher re-admission rate that increases with the number of conditions and has associations that are disease specific¹³. Some of the highest reported re-admission rates are noted for oncology, sickle cell, and neurologically impaired children, prompting calls to identify and abate the preventable components of these events^{12,14}.

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Why is trainee involvement critical to improving healthcare delivery?

Trainees are at the frontlines of delivering care, guiding hospital and discharge treatment plans. Graduate medical education core competencies of systems-based practice and practice-based learning require trainees to demonstrate their ability to work and communicate effectively within systems of care and to assess, identify and implement methods to continually improve their performance. Trainees must also be learn to work collaboratively with other health professionals, communicate effectively, help patients navigate complex healthcare delivery systems, and measure and improve the quality of their care.¹⁵⁻¹⁷ Although many academic medical centers, including free-standing Children's Hospitals, have fulfilled this requirement by developing quality improvement (QI) curricula, few programs have demonstrated their effectiveness in improving clinical processes and patient outcomes.¹⁸

What are key elements for pediatric discharge?

Literature on processes of care at discharge that are unique to the pediatric population is limited, with many focused on medication errors alone.^{19,20} Evaluating re-admissions is a convenient but incomplete method of determining best discharge practices. Language barriers and public health insurance are risk factors for repeat visits to the emergency department or hospital²¹. Risk assessments for some finite populations have been suggested²². While many elements of handoffs of care at hospital transition may be similar to that for adult patients, particularly those with dependency issues, unique issues for children may include:

- **Medications:** availability of proper formulation and/or compounding; dosing syringes; palatability/adherence
- **Equipment:** training on use; delivery to home; space/electricity needs; portability for school
- **Environment:** foster or convalescent care, teen or group home, other service site
- **Education:** engagement of children at as young of an age as possible, as developmentally appropriate; adolescent and parent individual and joint education; need to train all who will care for the child
- **Follow-up/access to care:** transportation method; barriers such as parent work schedule; goals of the follow-up

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- **Communication:** staff-patient-family; patient-family; staff- primary care provider; clarity on which providers to notify for specific concerns (as appropriate)
- **Risk assessment:** to include disease-state and past medical and surgical history

What Best Practice interventions for adults are effective in improving hospital discharge processes?

The BOOST (Better Outcomes for Older adults through Safe Transitions) toolkit is a set of expert- and evidence-based interventions that optimize the hospital discharge process.²³ The toolkit promotes patient-centered care and provides resources to engage patients in medical decision-making, which facilitates improved clinical outcomes.^{24,25} Key elements are: (1) comprehensive patient assessment on admission to determine risks for readmission or other post-discharge adverse events, (2) risk-specific patient/caregiver preparation for discharge using the teach-back method, (3) fax or phone call from sending to receiving physicians, (4) 72-hour follow-up calls to patients. In addition, timely completion of the discharge summary is stressed, with a goal for completion within 24 hours. Over 154 clinical sites have implemented BOOST in 26 states in the country. Preliminary data demonstrate a 21% reduction in 30-day readmission rates, improved inpatient-outpatient clinician communication and collaboration, improved patient satisfaction with their medical care.²³

Here in Pedi-BOOST, we combine BOOST proven best outcomes with unique pediatric-specific elements to create a toolkit for Better Handoff to Home through Safer Transitions.

Literature Review

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First Steps

Needs/Resource Assessment

Performing an Institutional Assessment of Current Care

One of the first steps to improve care is conducting a thorough survey of your current care environment, order sets, critical pathways and guidelines, and care processes central to the discharge transition process. This section contains a series of important headings under which are several questions related to that heading. You should first review the headings and determine whether these represent the critical areas of care delivery related to care transitions. Then, review the accompanying questions. Use the questions as a starting point for dialogue and discussion. You may find that some questions are more central to your organization's care transition issues than others. You may also find that there are other questions your team wants to include. These headings and questions should be used as a starting point for your team's work related to understanding your current discharge care transition processes.

Assessment item 1: Institutional support and resource identification and allocation

What is the institutional buy-in (from administration) and do you understand how your team fits into the organization's clinical quality improvement structure and priorities? Do you have the resources available for forming a team and supporting its efforts in formulating order sets, protocols, educational programs, and metrics to optimize the discharge process? How should resources be allocated, and who governs this decision? Does my site require IRB approval for quality improvement work?

A team working on an improvement effort this large is doomed to fail without recognition by hospital administration and medical staff committees of the importance of improving care transitions. If you haven't already done so, [Obtaining Institutional Support: Step-by-Step Process](#) (see Appendix), will assist you in enrolling the administration in your cause and in defining the medical staff entities to whom your team needs

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to report. A critical first step must include an honest appraisal of what resources can be committed for a pilot, and which can be expected beyond a pilot phase. Although all patients deserve a “best practice” discharge process, any successful quality improvement project starts with a small first step (pilot group) and then expands in successive cycles. This approach should match with resources available. The team should know who in their institution can direct resource allocation, and partner these individuals early in the project planning process.

Assessment item 2: Presence of a multidisciplinary team to address issues

Have you formed a truly multidisciplinary team or steering committee that works on the front lines of health care delivery, as outlined in First Steps, Build a Team and Team Rules section of this guide (see below)? If not, do so now! You won't be able to complete the assessment without the knowledge of representatives from a variety of disciplines. However, you also want to be mindful of not waiting for every area to be represented prior to initiating your process. You can always add team members and review membership along the way. The key is to engage and include the key multidisciplinary stakeholders.

Assessment item 3: Reliable data flow and metrics

What is the dashboard of measures that your institution uses to assess the quality of its discharge processes?

Is the methodology for acquiring and recording discharge measures standardized and reliable (that is, are there any concerns about data integrity and accuracy)?

Are potential gaps in patient care identified in real time, or is the process retrospective?

Are the data communicated to the front-line caregivers, and if so, how? Help on data flow, formulating metrics,

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and presenting data is available in the Track Performance Section of this guide.

The next assessment items relate to understanding the current status of your institution's discharge transition processes.

Assessment item 4: Standardized discharge processes

*What standardized processes for discharge transitions and monitoring already exist, particularly for children?
What elements of the discharge process can/should be standardized?*

*What elements of the discharge process need to be more customized to a specific patient population (ex:
Technology Dependent child; teen; over-age pediatric patient; discharge to care site other than home (ex:
juvenile justice system; convalescent care home)?*

Visit the American Society for Quality (ASQ) website at www.asq.org for information on process analysis tools.

Assessment item 5: Patient/family caregiver preparedness

*How are patients/family/caregivers assessed regarding understanding of medical issues (ie, diagnoses,
treatment, testing, and results) and follow-up plan/care?*

*Is there any "teach-back" component currently in place for discharge? All patients or diagnosis-specific (ex:
Asthma MDI use; GT feeding method).*

*Is there any standard review of potential complications, problems-solving tips, or other preventative teaching
performed for all patients? For a subset of patients?*

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Are there tools to assist in this process? (ex: Check lists for equipment use)

When does this process start?

Assessment item 6: Medication safety

How is medication reconciliation accomplished?

How are high-risk medications addressed? What kind of standardized monitoring is in place for medications that are high risk?

How is patient understanding of medication administration assessed? How are issues related to medications and multiple care interventions assessed and managed?

Assessment item 7: Follow-up care

What is the quality of the discharge communication to the outpatient follow-up clinician? What is the timing of this communication? How is the quality of this communication assessed?

Is follow-up standardized?

Are there any programs available for self-management after discharge?

How is care coordinated with the follow-up physician?

What are the most common reasons for readmission? What is the relationship between readmission and the

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quality of the care transition?

Assessment item 8: Educational issues

What is the current discharge education process?

Is there a template in place for the discharge process?

Who is responsible for teaching at discharge?

Do you routinely assess the learner as part of the educational process? At what age is the pediatric patient involved as the learner?

Do you include information on community resources and further outpatient education if needed? Is up-to-date and comprehensive written information provided as appropriate?

Do you have a reliable method for educating the patient whose primary language is not English?

Assessment item 9: General staff education and certification

What educational resources are routinely used to educate your staff about new topics or skills?

What resources are available to hospital staff to educate them on optimizing the hospital discharge transition?

Is it widely available via intra- or Internet access? Is it interactive in the form of learner-based modules? Are the modules tailored to nurses? Tailored to physicians and other providers? Is the educational program case based?

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If you are at a teaching institution, is education appropriately targeted at trainees, including students, residents, and fellows?

Is there mandatory participation by key providers?

Is there any method for tracking participation or competence/understanding of the most important concepts?

Assessment item 10: Pharmacy issues

How are pharmacists involved in medication safety?

Is the expertise of the pharmacist optimally used?

Have formulary issues between the inpatient and outpatient setting been identified and resolved?

How do you ensure that appropriate formulations (i.e. compounding) are available and will be dispensed to the patient?

Does the outpatient pharmacy have a reliable way to reach the discharging team if problems arise after discharge?

Performing an institutional assessment can be daunting at first. Remember, you don't have to fix or assess everything at once, and prioritizing an area of care is important and can narrow the scope of the initial

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assessment. An Institutional [Assessment Tool](#) (on the SHM BOOST website) can help you through this process.

Your team should reconvene to discuss the assessments as they become available, and review the assessments as you move to improve each of the focus areas. Some assessment assignments may require additional team member support and may need to be broken down into smaller assignments. For example, the assignment related to understanding the current discharge process will involve a variety of team members connected with different areas of the hospital.

Building a Team and Team Rules

Pulling the Team Together

In many cases, improvement activities are initiated by a few individuals that identify a big gap between the current and the best-known practices and then recruit others to their improvement team.

Team Leader(s)

Team leaders for a care transition improvement team most often consist of a hospitalist or other physician and a nursing leader. These leaders are responsible for calling meetings and communicating directly with administrative and appropriate nursing, unit, and medical staff committees. The team leaders should be respected members of their respective nursing and medical staffs and have some knowledge about care transitions. He or she need does need to be a content expert in discharge transitions, but should be familiar with the relevant issues at the institution and have experience in interdisciplinary quality improvement. Additionally, at least 1 team leader should have a working familiarity with the key literature (see literature review listed above). Team leaders need to have the commitment and perseverance to drive the entire process forward.

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Trainees

The hospital discharge transition is often excluded as a training topic in medical school and residency despite the fact that trainees are on the front lines of the discharge process and see discharged patients in their clinics. Training in this important component of care delivery can be integrated into a quality improvement project, continuity clinic project or at the minimum as part of the general education on core rotations. Trainees can serve to inform the process and are key to its success or failure in most academic institutions. Efforts should be made to include trainees in the development and implementation of your Pedi-BOOST Program.

However, given the “transient” nature of trainees, it is critical to assure the system has redundancies built in to assure patient care is consistent and not dependent on a given trainee’s ability or expertise in any facet of the discharge process. Residents should learn about the importance of the discharge process by integrating it into the educational program. Opportunities to incorporate discussion of the discharge process include: continuity clinic cases, didactic case conference denouements, M&Ms, family meetings, social work and discharge planning discussions, and more. Residents can also review and summarize the literature for a journal club, including its applicability to your institution and patient population. This can address the core competencies of communication, professionalism, patient care, and systems-based practice.

Team Facilitator

The team facilitator’s main duties are (1) maintaining team rules, (2) helping the team leader stay on track by utilizing effective techniques for team and project management, and (3) introducing the appropriate quality improvement (QI) tools for practical use by the team. While mastery of QI tools at the onset of the project is not necessary, the facilitator must have a basic background in commonly used QI tools and have willingness and/or experience in presenting them to the team as necessary. Mastery of discharge transitions literature is not as important for this position. Sometimes one person can be both team facilitator and team leader, but for more ambitious projects or for projects involving buy-in from disparate physician and nursing groups, a separate facilitator is very strongly recommended.

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Process Owners, Thought Leaders, and Content Experts

Participation of frontline personnel (e.g. nurses, social workers, case managers, residents, hospitalists) is essential to having an effective team that succeeds in optimizing the discharge process. For this project, these are also often content experts, knowledgeable in the process, failure points, and variability in discharge needs between differing patient types. It is also important to include the local thought leaders; those who may not have a formal title yet are looked upon as leaders and early adopters for a given clinician group. Content experts to consider may include individuals with expertise in process mapping (engineer or quality management department personnel), computer systems and local IT abilities, education, family centered care, language and cultural needs, and others. A care transition team roster draft is included in the Appendix - Resources section of this guide.

Establishing Team Rules

At your very first team meeting, you should establish the team “rules,” and everyone needs to explicitly agree to them. Rules include general agreements to respect others’ opinions and to raise a hand to have the floor for speaking. It may also include items specific to past failed attempts to implement all or part of a new discharge process, or to acknowledge existing components of discharge (such as the Asthma Action Plan) that already exist.

Individuals who have invested time and effort in these should be overtly recognized and the impact of Pedi-BOOST on current and past projects should be agreed upon by all early in the process. Often this may require the facilitator and Team Leaders to meet with these individuals prior to a first meeting of the entire Pedi-BOOST team to agree upon plans and actions. It may even be useful to have all team members formally sign a document agreeing to these rules to communicate and stress their importance. The facilitator is usually given the task of gaining consensus on and enforcing the team rules. Breakdowns commonly occur when basic rules are ignored or violated.

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In addition to these rules, it should be made very clear that potential members should notify the leader quickly if they cannot devote the requisite time and effort so a suitable replacement can be found. Timely minutes as well as a quick turnaround for comments/corrections should be the rule.

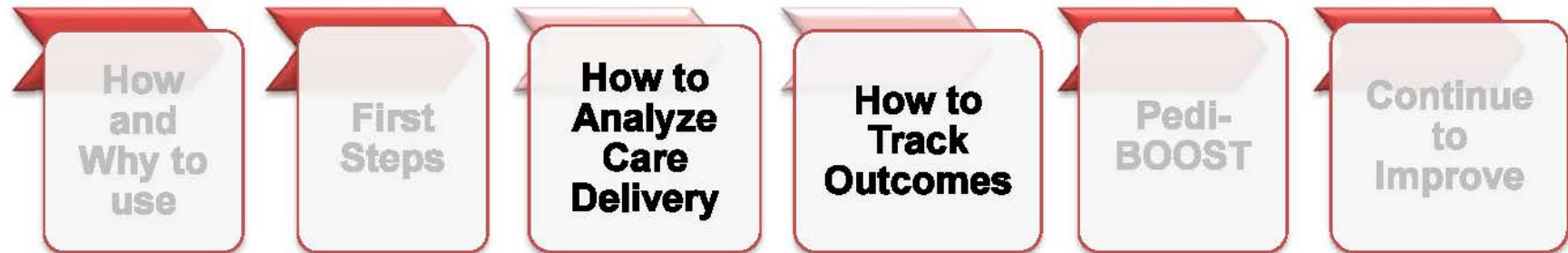
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Data Collection

- Quantitative
- Qualitative

Trending Data

- Reporting

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Data Collection

Underlying Key Principles of Data Collection and Reporting - How Will You Know You Are Making a Difference?

Data collection, analysis, and presentation are essential to the success of any quality improvement program. You can't manage what you don't measure.

The Pedi-BOOST project team plans to provide a practical approach to data collection and measurement of variables potentially affected by improving the quality of the discharge care transition. We will primarily address issues related to:

Outcome measures

- Length of stay
- Re-hospitalization and return to ED rates
- Patient and family satisfaction
- Completion rate of discharge communication (may be phone call, fax, email *or* transmitted discharge summary; within 48 hours)
- Discharge and Post-discharge medication management (medication reconciliation done at discharge; medication list given to patient/family; medications in hand at discharge, etc.)
- Scheduling of post-discharge follow-up visit

Process measures

- Patient or caregiver understanding of diagnosis, treatment, follow-up appointments, and warning signs or symptoms and response
- Rate of implementing components of the discharge tool kit

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Creation and assessment of metrics that address discharge issues unique to medically complex children, children hospitalized outside their local community, children without a medical home, and children experiencing socio-economic or cultural barriers to care

Quantitative data

Prior to implementing the BOOST discharge tool kit intervention, the team must assess the current state of the discharge process at the hospital. This requires obtaining and analyzing data at your hospital.

Baseline pre-implementation: For the preceding year (*monthly data as available is best*).

Please create data collection worksheets that you can use to collect baseline information on the following measures:

- **Basic demographic information:** age, principle diagnosis, gender
- **Discharge risk:** percentage of patients with technology needs (equipment), discharge location (to home, to foster care, convalescent home, other site), home health, palliative care, hospice, ICU stay (any), > 3 provider specialists involved during hospitalization, > 3 medications at discharge
- **Length of stay (LOS):** the ability to identify “outliers” (5% of patients with longest LOS) and separate from your analysis will be helpful. Alternatively, you can measure your *median* instead of *mean* LOS.
- **Re-hospitalization rates:** Within 10 days and within 30 days of discharge, calculated as monthly average among pediatric patients
- **Return to Emergency Department within 72 hours for same problem:** monthly average among pediatric patients
- **Medications :** percentage of completed medication reconciliation at discharge; percentage of patients with discharge medications filled by hospital’s outpatient pharmacy (equates with percentage of patients with medications in hand at discharge)

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- **Discharge Summary:** Rate of discharge summaries completed within 48 hours of discharge; transmission of the discharge summary to the referring provider; quality: Percentage of discharge summaries that include following elements- timing of discharge follow-up, new specialists or services, new or changes to medications or equipment, pending results, studies that need to be ordered as an outpatient.
- **Patient satisfaction:** Monthly average among pediatric patients for the preceding 12 months. For sites where this information is reported by unit, then choose the most applicable unit as your baseline model.
 - Overall and specific to the discharge process: These will vary based on your survey vendor (e.g., Press Ganey, Gallup). Listed below are examples of questions that your vendor may use to assess the discharge process.
 - You will want to track the proportion of patients reporting the highest level of satisfaction to example items such as these:
 - “Extent felt ready for discharge,”
 - “Speed of discharge process,”
 - “Instructions for care at home,”
 - “Explanations for taking medicines at home.”
- **Patient or caregiver understanding** — Utilizing a measurement tool (e.g. modified version of the Discharge Knowledge Assessment Tool – see Appendix), each hospital will survey a convenience sample of 50 patients/caregivers prior to implementation of the intervention to determine their understanding of their:
 - Diagnosis: Primary cause of hospitalization
 - Treatment in the hospital
 - Follow-up appointment(s)
 - Warning signs or symptoms and response.
 - Medications and equipment (i.e. name, dosing, purpose, side effects)
- **Trainee, nurse, and attending physician** - involvement in QI efforts at each participating site.

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Post-implementation: After piloting and fully implementing the tool kit, collect the same data and report them to your team on a monthly basis using data sheets. A control chart is a visually appealing way to present this data. Some data may be presented on the same graph using lines of different colors to represent e.g. LOS, re-admission rate, etc.

Include the implementation of the toolkit on a graph, using different colored lines for units or teams to encourage collaborations and awareness of performance. Color-coded score cards can be useful for summary data, but should not replace data charts.

Qualitative data

Describe your activities from a qualitative perspective.

- Document team member participation and meetings with your senior hospital administration
- Describe barriers you encountered and how they were handled
- Although quantitative results can be applied to survey tools and perceptions of knowledge, many feel that these are subjective reports and as such are often reported as qualitative data. The following should be reported in either the quantitative or qualitative section of your reports:
 - Patient/caregiver perception of their knowledge of their condition and follow-up care plan
 - Patient/caregiver satisfaction with the discharge process
 - Trainee, nurse and attending physician satisfaction with the discharge process
 - Trainee, nurse and attending physician self-reported efficacy in applying QI methodology to patient care
 - Trainee, nurse, and attending physician education and experiences in the UC Healthcare Quality Improvement Network
- Disseminate this quality improvement work within your institution

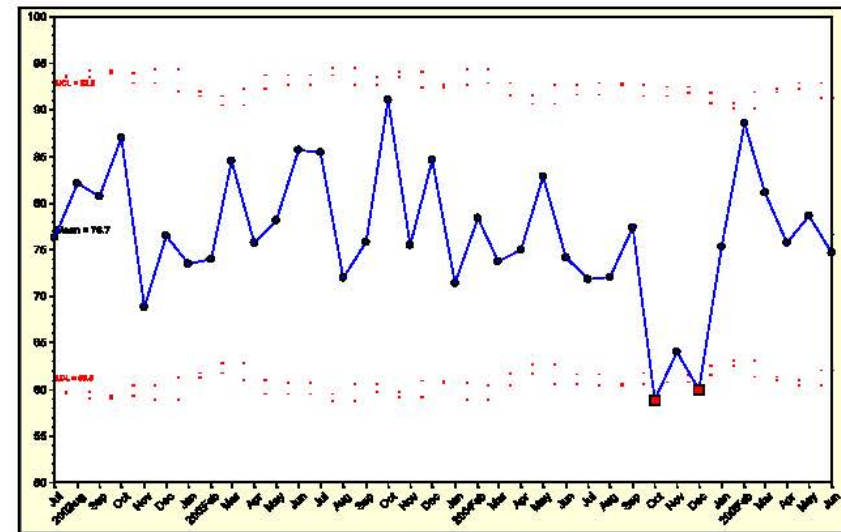
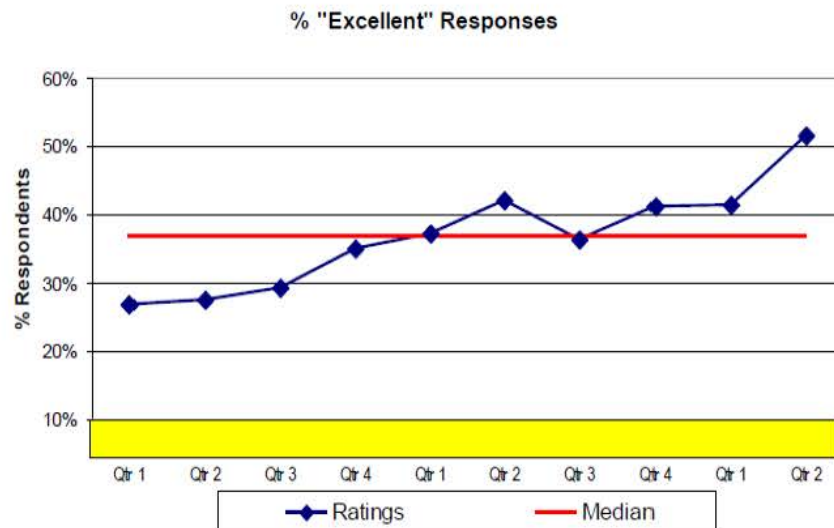
Graphical representation of data over time: Run Charts and Statistical Process Control

As you implement the discharge intervention, your team will need to assess if your efforts are leading to the desired changes in practice.

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A **RUN CHART** displays data in a graph format as results occur over time. So, the y-axis (vertical) represents the result you are measuring, and the x-axis (horizontal) represents time. In this project, for example, a run chart could display patient satisfaction, length-of-stay averages or re-hospitalization rates on a monthly basis (see sample). Run charts allow the opportunity to readily identify variation in data that suggest changes in a process over time. A run chart may contain a straight line showing the average in order to more readily visualize deviations. Upper- and lower-confidence limits have been added to the chart on the right, making it a Control Chart. Annotations can be added to show the timing of specific interventions. Reporting is best done with graphical and not numerical display. Account for special cause variation and outliers.



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Glossary

Adverse Event – An injury related to medical management, in contrast to complications of disease. Medical management includes all aspects of care, including diagnosis and treatment, failure to diagnose or treat, and the systems and equipment used to deliver care. Adverse events may be preventable or non-preventable.

Affinity Diagram – A method used to organize and summarize natural groupings of ideas to understand problem and solutions. The issue is phrased in one sentence; brainstorming is used to generate ideas which are then sorted by like-groupings. Groupings are then diagramed with boxes and arrows indicating relationships.

Algorithm – decision tree used to suggest possible care paths

Benchmark – an achievement which serves as a standard for other providers

Brainstorming – Team method of generating ideas, free of criticism and judgment

Cause-and-Effect Diagram - Graphical display of an organized list of possible causes, solutions, or factors, focused on one topic or objective, also known as Fishbone or Ishikawa diagram

Checklist – an algorithmic listing of a series of actions to be performed for a given intervention

Clinical Decision Support – any system designed to improve clinical decision making related to diagnostic or therapeutic care.

Continuous Quality Improvement (CQI) – A philosophic approach toward quality with 3 fundamental activities: listening to the voice of the customer, listening to the voice of the process, and using statistical process control methods. A continuous process of quality improvement.

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Error – an act of omission or commission which leads to an undesirable outcome, or may lead to such an outcome.

Failure Mode and Effect Analysis (FMEA) – An error analysis done either retrospectively (as in Root Cause Analysis) or prospectively to determine “error modes”. The likelihood that a particular process failure is combined with an estimate of the relative impact of that failure to determine a “criticality index”. This allows for prioritization of targets for improvement based on index.

Flow Chart - Pictorial representation showing all of the steps of a process

Shapes are used as symbols

- Diamond: yes/no decision
- Oval: input/outputs
- Box: task performed
- Arrow: direction

Forcing Function – an aspect designed into processes to prevent performance of a next step if a specific prior step is not instituted.

High Reliable Organization (HRO) – an organization operating under hazardous conditions yet having few adverse events. Such organizations have characteristics of preoccupation with failure, commitment to resilience when failure does occur, sensitivity (attentiveness) to operations, and maintaining a culture of safety. Examples include nuclear power plants and NASA shuttle command.

Mistakes vs. Slips – Mistakes are errors due failure to choose correctly, while slips are lapses in concentration. Operationally, these can be distinguished by asking if the error involved problem solving (mistakes). These have differing factors causing their occurrence, and therefore different solutions are needed to avoid these errors in the future.

Nominal Group Technique- A letter (A-Z) is assigned to each idea. Members are asked to rank order the ideas based on importance and/or feasibility (5 ideas: highest importance = 5, lowest = 1)

- Add rank scores, highest number is 1st, etc.

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- Multi-voting variation: each member gets 100 points to distribute across the ideas
 - E.g. 25 points idea A; 0 points idea B, 75 points idea C

Outlier - An outlier is an observation in a data set which is far removed in value from the others in the data set. It is an unusually large or an unusually small value compared to the others. Statistical measures (e.g. 95% confidence intervals) allow for occasional outliers in all processes (this is called variation). An outlier might be the result of an error in measurement, in which case it will distort the interpretation of the data. However, if an outlier is a genuine result, it is important because it might indicate an extreme of behavior of the process under study. For this reason, all outliers must be examined carefully before embarking on any formal analysis.

Pareto Chart - Graphical display (commonly a histogram) of competing events, choices, or options which compares relative weights or frequencies. Also known as the “80 / 20 rule - 80% of problems come from 20% of causes”. They can identify where to focus limited resources for biggest impact.

Pay for Performance (P4P) – the act of paying a provider for performing at or above a certain standard of quality for the given indicator.

Plan-Do-Study-Act (PDSA) – a cornerstone of CQI, the cycle used for process or system improvement, first championed by Shewhart and Deming. Plan (analyze the problem, devise a plan to correct it, and determine specific measures to track); Do (carry out the plan); Study (review the outcomes of the measures); Act (modify the plan and take new action as indicated).

Preventable adverse event - An adverse event caused by an error or other type of systems or equipment failure

Root Cause Analysis - a structured method used to analyze serious adverse events that includes data collection and reconstruction of the event in question through record review and participant interviews. A multidisciplinary team analyzes the sequence of events leading to the error, with the goals of identifying how the event occurred (through identification of active errors) and why the event occurred (through systematic identification and analysis of latent errors). This solutions then often include a barrier analysis –the identification of administrative, procedural or other barriers which could have (or could in the future) prevent an adverse event.

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Run Chart – a graph in which an observation is plotted over time to see if there are “runs” of points above or below a central line (usually the median). A run of > 8 observations in a particular direction indicate a possible shift in outcome, a non-random variation.

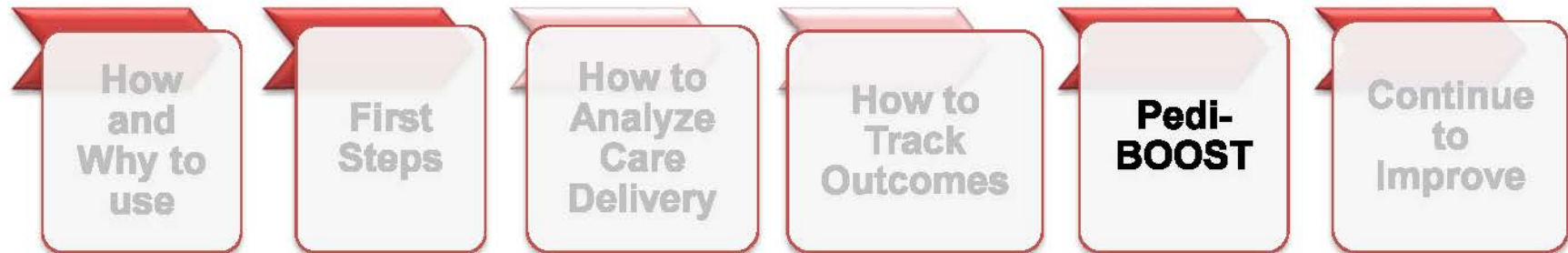
Statistical Process Control Chart – a type of run chart which includes upper and lower control limits based on calculated confidence intervals.

Triggers – signals for detecting an adverse event.

Variation, Common and Special Cause – every system has inherent variation. This is the variation that is caused by chance, is natural, and is due to the existence of the system. This is called *common cause*. A system in control has common cause variation – natural fluctuations. The variation in a system that is not natural, that is assignable to something aberrant, is *special cause*. A system with special cause variation is not in control until that special cause is identified and eliminated.

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Creating the Culture

- Guiding principles
- What I Wish I'd Known--Pitfalls and Pearls

Project Layout

Pedi-BOOST Tools

- General Assessment for Pediatric Patients (GAPP tool)
- Risk Stratification Assessment for Kids (RISK tool)
- Risk-specific Pediatric Health Interventions (R-PHIX tool)
- The Final Checklist
- Appendix

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Creating the Culture and Guiding Principles

(Note: where the term “family” is used, this refers to family/ primary caregiver inclusive of foster parents, group home caregivers, and others who are identified as responsible for delivering or assisting with healthcare and/or healthcare decisions.)

Having committed to improving the discharge transition, pulled together an interdisciplinary team, and reviewed current processes regarding discharge, it is now time to layout the project and implement it. First however, it is important to note what many experts state is the most important quality improvement initiative element to address first: The Culture. Critical to any successful project is the awareness and mitigation of barriers to change (culture of change)¹ and the agreement on guiding principles of the team².

The culture of change is one that embraces innovation, is willing to risk failure, and realizes that not all changes lead to improvement. Churchill said “To improve requires change. Perfection requires changing constantly”. A *change concept* is an approach to change that has been found to be useful in developing specific ideas for changes that lead to improved outcomes³.

Ask the team to answer these questions when thinking about your site’s discharge project⁴:

Will we eliminate waste (unnecessary resources), improve workflow, or change the work environment?

Will we improve our relationship with the patient and family (customer interface)?

Will we decrease variability of the discharge process and through this reduce errors (or even harm)?

While the team likely has already agreed on the common goal (to improve the discharge process), there may be individuals who waver and/or others not on the team who appear to be barriers to the changes needed for the project. There are three surprises about change⁵ which are common; each has a proposed solution below:

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- ❖ What looks like resistance is often lack of clarity – “how do I really to this?”
 - Solution: direct support, leadership, and clear directions
- ❖ What looks like laziness is actually “too much –system overload”
 - Solution: creation of a process that is more efficient and does not require more time or steps;
- ❖ What looks like a people problem is often a situation problem
 - Solution: incorporation of environmental changes needed to be successful and contingency plans for competing priorities

Remembering these important culture change elements, consider now also the core principles that are central to successful Pedi-BOOST implementation. Core principles or guiding principles are often value statements and may include ethical/professional expectations, re-statement of why the project is relevant, and team rules of engagement (see part 2). Examples of Pedi-BOOST guiding principles to incorporate are noted below:

Patient and family centered care (PFCC) is define by the Institute for Family Centered Care⁶ and the Picker Institute (<http://pickerinstitute.org/>) as “improving health care through the eyes of the patient” and states that “All patients deserve high-quality health care and patient views and experiences are integral to improvement efforts.” PFCC includes the following principles:

- ✓ Effective treatment delivered by staff you can trust;
- ✓ Involvement in decisions and respect for patients’ preferences;
- ✓ Fast access to reliable health care advice;
- ✓ Clear, comprehensible information and support for self-care;
- ✓ Physical comfort and a clean, safe environment;
- ✓ Empathy and emotional support;
- ✓ Involvement of family and friends; and
- ✓ Continuity of care and smooth transitions.

In 2001, the Institute of Medicine report ⁷ included patient centeredness as one of its six overarching aims for improvement. “Patient experience” is a measure of patient centeredness⁸. Although not called out specifically, inherent in PFCC is the acknowledgement and

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appropriate actions needed to assure that all communications (written, verbal, electronic) attend to language, culture, and health literacy levels of the patients and family members⁶

Empowerment of patients and families is critical to sustained success in controlling health. Empowerment includes teaching patients and families about resources available (at schools, local community sites, internet, or libraries), how and when to access the healthcare system, and how to advocate for needs. Self-(patient) advocacy should include review of patient-specific potential problems and how to clearly and confidently navigate the system for care needs. In addition, team members are empowered to ask questions about unclear processes, unanticipated problems, or failure points in the system.

Continuum of care orientation is central to the successful transition of a patient out of the hospital. This typically requires the coordinated efforts of both the inpatient team and the outpatient care team. Although the focus of this toolkit is discharge, it is clear that inpatient team communication throughout the hospitalization is critical. As a continuum of care model, Pedi-BOOST embraces the involvement of the outpatient medical providers on admission to the hospital, throughout the stay, and during the planning and execution of the transition out of the hospital. This is not easy when the acute care needs of the hospitalized patient, even those with more common disease states, are compressed into shorter lengths of stay. Over the past years, more care is rendered in the emergency department, offices and specialty clinics and day medical treatment centers, and the home⁹. This challenge makes coordinating care during and at the discharge transition even more critical yet more acute and complex.

Belief in and a commitment to safety is core to the culture of safety¹⁰. Such a commitment means an agreement that humans are fallible, that health care delivery is a high risk (hazardous) profession, and that because these human factors cannot be eliminated, systems must be designed to be as safe as possible to mitigate harm to patients. This also means that individuals – all involved in delivering care – have an obligation to be vigilant, follow best practices, identify and report errors, and to seek out solutions for improvement.

Pedi-BOOST uses these two foundational structures - the culture of change and guiding principles – as the base on which to perform this discharge transitions project. Next steps are to layout the project and use specific tools for each step.

What I wish I'd known – Pitfalls and Pearls

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A successful project learns from those who have tried and failed and tried again. Here are some of the pitfalls to avoid and pearls of wisdom from BOOST sites:

Pearls (“DO”s):

Pitfalls (“DO NOT”s):

<ul style="list-style-type: none"> • Use more process measures, and use them early 	<ul style="list-style-type: none"> • See the discharge process as a discrete moment in time
<ul style="list-style-type: none"> • Engage partners across the continuum 	<ul style="list-style-type: none"> • Focus on the disease instead of the patient
<ul style="list-style-type: none"> • Have solid basic skills in reliability science 	<ul style="list-style-type: none"> • Have the teach-back role undefined (who, when, which tools)
<ul style="list-style-type: none"> • Use a Nurse discharge coach to model and coach-teach at the bedside 	<ul style="list-style-type: none"> • Make this an “add on”; failing to assess resources prior to initiating the project
<ul style="list-style-type: none"> • Work smarter, not harder; focus on process re-design; use EHR to your advantage 	<ul style="list-style-type: none"> • Ignore patient/family limited health literacy and its impact on patient outcomes
<ul style="list-style-type: none"> • Create a yearly Teach-Back competency 	<ul style="list-style-type: none"> • Fail to change culture and assure consistent team communication
<ul style="list-style-type: none"> • Obtain leadership support 	<ul style="list-style-type: none"> • See all populations as the same and all risks as equal; failing to identify best target population with which to start the project

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Project Layout

In laying out the Pedi-BOOST project, it is helpful to use one of the two more commonly cited QI methods: Plan-Do-Study-Act (PDSA) or Define-Measure-Analyze-Improve-Control (DMAIC)⁴. The former may be more comfortable for clinicians, as it is similar to the thought process used at the bedside when caring for patients. The latter is used by those who support use of “lean” concepts that reduce error and harm by eliminating unnecessary steps in processes. Suggested layout includes basic steps which have been or will next be addressed in this toolkit in PDSA format:

- ✓ development of global and specific aims, asking “why” and “how” to assure the project is relevant and actionable;
- ✓ team composition; barriers assessment;
- ✓ background information/evidence base;
- ✓ measures with baseline data;
- ✓ meeting;
- ✓ timeline;
- ✓ implementation strategy;
- ✓ analysis of results;
- ✓ action on the results

An example Project Layout Template for your use is in the Appendix. For this project, a process map (also see Appendix) of the current discharge process will be a particularly helpful QI tool to use. A process map should also call out who is responsible for each step of the discharge process.

Complete the project layout “plan” sections with the information you have already. Then review the tools below and insert them into a new process map. Which are most actionable? Which would most engage the team? Which would be most likely to result in improvement in some/all of the metrics chosen? Each site will have different baseline status, processes, and system issues such as electronic record templates or availability of a pharmacist for discharge medication review. Based on site-specific needs and assets, determine which of the phases of the new process should be included in the first cycle of improvement, second cycle, and so on.

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Remember that in performing QI, small changes within cycles of weeks or a few months are often best to ensure the modifications work. At some sites, making all changes at once using all tools below may be possible, but for most this will not be the case. Successfully incorporating a few changes at one time can lead to enthusiasm around the project and belief that the team can make improvements that matter to the patients and the team.

The Pedi-BOOST Tools

Pedi-BOOST tools with explanations are listed below, and are also available separately in the Appendix. Each tool within Pedi-BOOST is discussed separately, as implementation of this toolkit may be done in whole or in parts as noted above. Tools will be most successful if all members of the team have a single point of access (electronic record, paper file at the bedside, etc.) which can be updated by members at any time.

In most institutions, a single individual is responsible for the final discharge process, ensuring patients and families have correct written instructions, handouts, and follow-up plans in place. For this reason, it is often logical for the individual in this role to take ownership of completion of documents throughout the hospital stay. For this to be successful, the team must identify which team member should fulfill this role (e.g. bedside nurse) and then also give that role the authority to direct members of the team in completion of toolkit elements.

1. **The General Assessment for Pediatric Patients (GAPP)**
2. **Risk Assessment for Kids (RISK)**
3. **Risk-specific Pediatric Health Interventions (R-PHIX) “our fix”**
4. **The final checklist**
5. **Appendix: Team Roster; Process map; Project Worksheet; GAPP; RISK; R-PHIX; Checklist; Teachback; Medical Home Discharge Communication; Discharge summary template; ROI calculator; Ticket to Home; Physician resources**

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1. General Assessment for Pediatric Patients (GAPP)

General readiness for discharge begins on admission. While the entire team is responsible for noting barriers to discharge, having a checklist that is reviewed consistently daily (e.g. on rounds) and/or the responsibility of one team member (e.g. bedside nurse) will improve completion of the checklist throughout the hospital stay. As pediatric admissions often have a short length of stay (LOS), starting the GAPP on admission is critical. The GAPP assesses general socioeconomic, behavioral, cultural, linguistic and other barriers to safe discharge transition. It highlights potential risks that then can be addressed using risk specific interventions. As a screening tool, not all elements of the GAPP are expected to apply to all patients. Similarly, as the GAPP is administered first on admission when not all risks may be apparent, it is important to re-check the GAPP at some point again such as the midpoint of the hospital stay and the day prior to discharge. For pediatric patients with LOS less than 3 days, this can be a challenge. Effectively teaching patients about their health status and care needs requires careful use of verbal and written materials.

Principles for health literacy specify the use of reader-friendly written materials, which include^{11,12}:

- simple words (one to two syllables);
- font size of 14 points;
- short sentences (four to six words);
- short paragraphs (two to three sentences);
- no medical jargon, consistent language;
- abundant white space.

Focus is on what the patient needs to know, delivering this in easy-to-understand formats, and checking patient understanding. Typical failures found in patient and family caregiver education include:

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- Assuming that the patient is the key learner;
- Providing written discharge instructions (including medications and equipment) that are confusing, contradictory to other instructions, or not tailored to a patient’s level of health literacy or current health status;
- Failure to ask clarifying questions about instructions and plan of care; and
- Non-adherence of patients regarding self-care, diet, medications, therapies, daily weights, follow-up, and testing, due to patient and family caregiver confusion.

It is critical then to identify all who will care for the child after discharge and to assess the best method for learning for these individuals.

The GAPP Tool						
Provide a response for every element listed by noting Y (yes), N (no), or U (unsure). In the Solution column, list possible solutions or note R (resolved) if the issue has been successfully addressed. Date, time, and signature of the team member noting the solution should be provided.						
Element	ON admission			RE-assessment (list date)		
	Completed by (date/time/signature):			Completed by (date/time/signature):		
	Problem? (Yes, No, Unsure)	Solution?	Date/Time Signature	Problem? (Yes, No, Unsure)	Solution?	Date/Time Signature

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Primary caregivers identified (all)						
Patient understanding of known chronic condition						
Family understanding of known chronic condition						
Patient understanding of reason for admission						
Family understanding of reason for admission						
Language barrier						
Cultural barrier						
Economic barrier						

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Transportation barrier						
Placement barrier						
Medical Home						
Palliative/POLST need						
Other social						

2. Risk Assessment for Kids (RISK)

Assessing medical risk related to the discharge process for children is difficult. Not all consequences of a non-ideal discharge are seen within a 7 or 30-day post-hospitalization time frame. Asthma is one example, where a child may indeed improve from the index event, yet a repeat exacerbation is noted 3 months later. Is this a failure to understand the Asthma Action Plan? Did the parent lose the paper or not recall how or who to call in case of concerns? Is this an example of a discharge failure or a broader system failure? This toolkit cannot address these issues but does hope to emphasize that the discharge process is one phase – albeit important – that occurs when patients and families are both at heightened awareness of medical consequences and yet also are overwhelmed by an unfamiliar environment, exposed to strange language/terms, and feel powerless to help their/their child’s condition.

Although studies on pediatric re-admission or return to the emergency department tell only part of the story, they can inform best practices of process and content of discharge (the “afferent” end) which is the focus of this toolkit. Studies have demonstrated higher rates of return in children associated with insurance type (governmental), chronic disease, age, and previous admission within the calendar year prior to the index admission¹³. Some information exists on specific diseases such as Type I diabetes where low income

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as well as longer time since year of diagnosis suggest that social issues prevail over decades but that perhaps newer approaches toward disease management are integrated better in those diagnosed in the past 5-10 years¹⁴. Children with complex medical conditions and technology dependence have additional coordination of care challenges¹⁵⁻¹⁹. Acute disease states such as the common bronchiolitis, other respiratory disease, and newly diagnosed seizures are also associated with increased returns in infants under one year²⁰. Race, as an independent factor, has been associated with higher risk or return¹³ or lower risk²⁰ making conclusions about this unclear at this time. The issue of acculturation, language, and the medical home approach toward patients of varied backgrounds are also tied to both failure to return for planned care, delayed care, and unplanned returns to the hospital system²¹⁻²⁴. How confounding factors such as diagnoses, equipment type, and family comfort with problem solving play into interpretation of this finding is not clear.

Pedi-BOOST compiles these known risks from the literature (high risk medications²⁵⁻²⁷, behavioral health²⁸⁻³³, issues noted above and more) and a few pediatric risk stratification tools^{34 35,36} to make the RISK tool below. Sites are encouraged to obtain local re-admission data to better stratify risk, as population variations clearly will impact frequency and severity of any risk. RISK should be completed soon after discharge and after completion of the GAPP. As with the GAPP, the tool is most powerful if completed at least once more during the hospital stay and/or as new issues are noted.

RISK tool elements include:

1. Medications – The IHI list of High Risk medications for children²⁷ and the AAP Patient Safety Policy statement²⁶ include lists of drugs as well as pediatric-specific concerns such as liquid dosing, compounded medications, and palatability. Although new prescriptions would be assumed to be associated with more risk, even patients on these medications prior to admission should be considered to have increased risk. Multiple medications have been associated with increased risk in adult and some pediatric studies^{18,37,38}
2. Socioeconomic – access (insurance and type, transportation mode), placement (homelessness, vs other), and child protection issues should be noted (open or recent child protective services case; foster placement; *parent* high risk behaviors or status such as teen parent, psychiatric disease/drug dependency/rehabilitation), history of poor compliance to medical plan in past
3. Chronic disease – transplant status, neuromuscular, respiratory, malignancy, cardiac, renal, and Type I diabetes are suggested based on the literature above. Malignancy risk is higher overall, however it is difficult to weight-base risk for the other

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populations. Other elements such as home nursing care, parent level of education, patient engagement all clearly affect the risk with these conditions, however each is separately accounted for here.

4. Psychiatric disease/behavioral health/drug dependency – autism, manic depression, history of suicide attempt, with or without use of medications (patient)
5. Acute disease – bronchiolitis, other respiratory, conditions not yet resolved (where patient is improved but not at baseline at discharge)
6. Technology –tubes/lines/ports/implanted devices (e.g. for dialysis, chemotherapy; presence of tracheostomy or gastrostomy tube or ventricular shunt; presence of pacemaker or vagal nerve stimulator); home equipment (e.g. ventilator, enteral pump, dialysis)
7. Patient – infant, teenage; greater than 2 previous unplanned admissions within the past calendar year; length of stay greater than 14 days; no medical home readily acknowledged as coordinator/primary site for health care

Patient and family – language or culture as it pertains to perceptions of health and healthcare access; health literacy^{39,40}. Lack of ethical considerations where appropriate, such as Physician Orders for Life-Sustaining Treatment (POLST)⁴¹, palliative care^{42,43}, hospice⁴⁴, particularly if decisions are not uniform between the patient and family or between family members. Include here if *primary caregiver* has complex medical needs. NOTE: Consideration may be given to palliative or hospice enrollment as protective. At this time, there are no validated scoring rubrics for pediatric risk assessment. A site could develop its own metric. If done, that system should be applied consistently. One site is currently piloting a rubric that accounts for presence of 1 or more than 1 element in a given category with differing point valuation.

The checkboxes below may be useful when assessing a patient’s risk.

RISK element	PRESENT?	
	YES	NO

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1. Medications:		
Any high risk medication use?	<input type="checkbox"/>	<input type="checkbox"/>
Greater than 3 medications in use?	<input type="checkbox"/>	<input type="checkbox"/>
2. Socioeconomic:		
Any risk?	<input type="checkbox"/>	<input type="checkbox"/>
More than 1 risk?	<input type="checkbox"/>	<input type="checkbox"/>
3. Chronic disease:		
Any disease?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more conditions?	<input type="checkbox"/>	<input type="checkbox"/>
4. Psychiatric/behavioral/drug dependency (patient):		
Any?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more?	<input type="checkbox"/>	<input type="checkbox"/>
5. Acute disease:		
Any?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more conditions?	<input type="checkbox"/>	<input type="checkbox"/>

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6. Technology:		
Any?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more ?	<input type="checkbox"/>	<input type="checkbox"/>
7. Patient:		
Any?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more ?	<input type="checkbox"/>	
8. Patient and family:		
Any?	<input type="checkbox"/>	<input type="checkbox"/>
Two or more?	<input type="checkbox"/>	<input type="checkbox"/>

Examples:

10 year old with CP, developmental delay, seizure disorder, cared for at home with no admissions over the past year, with admit diagnosis pneumonia, LOS 4 days, home on increased CPT, azithromycin and his usual 3 anti-convulsants and usual home GT feeds using a pump. He is insured by a third party payor. RISKS: Medications, chronic disease, acute disease, technology.

2 year old with no PMH, new deep tissue infection, LOS 18 days, single teen parent with poor understanding of disease state, behind on immunizations, going home on two IV antibiotics. She has Medicaid. RISKS: Medications, Socioeconomic, acute disease, technology, patient, patient/family

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3 month old with known VSD on no meds, no previous hospitalizations, with bronchiolitis, LOS 4 days, home with nasal suctioning. She has insurance with a third party payor. RISKS: chronic disease , acute disease , technology.

In one system, patients have been placed into four “tiers”, where likelihood of post-discharge care coordination needs is higher with increasing tier. While it is intuitive that patients with a greater number of issues will have increasingly complex discharge processes, identifying these in a consistent manner prior to discharge may aid in discharge planning.

3. Risk-specific Pediatric Health Interventions (R-PHIX) “our fix”

With the above list of RISK elements, solutions or fixes can be implemented for the problems or risks. Use the R-PHIX here along with specific intervention tools found in the Appendix prior to discharge. Many of the issues noted may not have a realistic resolution or have a solution that requires ongoing attention from the medical home provider and family. These should be noted on the R-PHIX for easy incorporation into discharge communications (patient handouts, discharge call or fax prior to summary available, discharge summary). Include as many modalities as possible (videos, written materials, etc) and use plain language (www.plainlanguagenetwork.org) and/ or clear language (www.clearlanguagegroup.com). Slow down when speaking to the patient and family¹². If handouts are used, mark or circle key information. *Ask Me 3* from the National Patient Safety Foundation (<http://www.npsf.org/for-healthcare-professionals/programs/ask-me-3/>) is another useful patient communication and education tool that helps staff to teach patients 1) what the main problem is, 2) what the patient should do for that problem, and 3) why the action is important. *Ask Me 3* also encourages patients to advocate to get this information about their care.

Use “Teach Back” daily in the hospital and during follow-up phone calls to assess the patient’s and family caregivers’ understanding of discharge instructions and their ability to perform self-care. Teach Back is a top patient safety practice⁴⁵⁻⁴⁷. Teach Back involves asking the patient and/or family caregiver to recall and restate in their own words what they thought they heard during educational sessions and discussions.

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The R-PHIX Tool

Circle or check by relevant elements and interventions below. Date/time/signature should be clearly tied to the intervention. Any education or review provided should address the patient as developmentally appropriate and any family members who may care for the patient

PH= Patient handout MHComm = Medical Home communication DCSumm = Discharge summary O = Other (list): _____

RISK element	Interventions	Date/Time/Signature of person completing the intervention	Ongoing solution needed? Add to discharge communications
Medications *High Risk Meds (ex: insulin, narcotics) * Liquid dosing * Compounded medication	* Medication specific education using Teach Back provided *Clearly printed medication list in primary language, with thought to literacy level/use of pictures and diagrams * How to dose and how to		

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<ul style="list-style-type: none"> * Poor palatability * > 5 medications 	<p>administer liquid medications using Teach Back provided</p> <ul style="list-style-type: none"> * Ensure medication in hand prior to discharge or assure selected pharmacy provides compounding services * Dose provided in hospital with flavoring/other to ensure tolerance of medication * Review of medication indications, ensure best medication schedule for patient (age, school, etc), common adverse events, and “if then” problem solving * Phone follow-up at 24-72 hours post discharge to review medication issues 		
<p>Socioeconomic</p> <ul style="list-style-type: none"> * No Insurance (2); Medicaid (Medi-Cal in California) 	<ul style="list-style-type: none"> * Financial services counselor visit * Arrange follow-up visit at hospital vs. local clinic (where 		

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<ul style="list-style-type: none"> * Transportation * Not to home placement * Protection issues 	<p>possible)</p> <ul style="list-style-type: none"> * Social worker consult; review community resources; consideration of CPS involvement 		
<p>Chronic diseases (neuromuscular, cardiac, pulmonary, malignancy, renal, Type I DM)</p> <p>Behavioral diagnoses (autism, depression, other psychiatric)</p>	<ul style="list-style-type: none"> * Review disease specific and patient specific discharge goals * Create and review an action plan or “if/then” plan that addresses disease state complications * Social work support as appropriate for community resources including patient and family support networks * Behavioral health consult or referral 		
<p>Acute disease (respiratory)</p>	<ul style="list-style-type: none"> * Review of national or local discharge guidelines, where available * Disease specific education using Teach Back (e.g. 		

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	<p>suctioning, assessment of respiratory distress, other)</p> <p>*Action plan or “if/then” plan reviewed with patient/caregivers regarding what to do and who to contact in case of problem</p>		
<p>Technology</p> <p>* Indwelling devices</p> <p>* Home equipment</p>	<p>* Review of indications, complication history (patient-specific) and action plan or “if/then” plan for common or past problems</p>		
<p>Patient</p> <p>* Infant or teen</p> <p>* previous admissions (past year)</p> <p>* No Medical Home</p>	<p>* Review past admissions to note any remediable issues</p> <p>* Secure Medical Home and contact the provider while patient in hospital</p>		
<p>Patient and family</p> <p>* Language</p> <p>* Culture</p>	<p>* Utilize translators</p> <p>* Have family meetings with appropriate family members in attendance who best represent</p>		

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<ul style="list-style-type: none"> * Health literacy * Ethical issues 	<p>the cultural needs</p> <ul style="list-style-type: none"> * Use Teach back, provide handouts with diagrams and visual cues (including medication lists) * Ensure goals of care are written and agreed upon by patient and family including future needs in case of acute decompensation 		
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4. The Final Checklist

This final checklist should be used to ensure completion of all tasks related to barriers/concerns/preventable events as elucidated from the GAPP and the R-PHIX. Note that elements not completed from the GAPP and the R-PHIX may be appropriate to address as an outpatient. In these cases, discharge should not be delayed in an effort to complete tasks not feasible to complete during the hospital stay. This may vary due to day of week, site, patient, or many other competing issues. If an element is to be completed in the outpatient setting, it is critical to secure follow-up and to ensure the Medical Home provider acknowledges these needs.

The Final Checklist			
Element	List any not addressed here and why (or note "none")	Action needed? (list)	Comments
GAPP and RISK elements			

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R-PHIX elements			
Medication Review – why/how/when should I call if concerns			
Teach back* – both patient and family. Include “if/then” scenarios			
	List which given/method used		
Patient handouts – include websites, paper action plans or diagrams (tube use; congenital heart disease, other). After visit summary or other hospital template may be used for additional general information.			
Follow-up visit(s) scheduled – including for tests (ECG, follow-up labs, etc). Medical Home follow-up should be within 1-3 days in most cases.			
Medical Home Communication* – this should be “immediately” at discharge or as soon as possible (in person, phone, fax, secure email, electronic record message)			

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Interdisciplinary Family meeting prior to discharge			
Discharge summary* – received by Medical Home provider			
Telephone contact with patient/family 24-72 hours after discharge			
Items noted with * have examples in the Appendix. For High Risk patients, every effort should be made to complete all elements of this Final Checklist.			

5. Appendix: Team Roster; Process map; Project Worksheet; GAPP; RISK; R-PHIX; Checklist; Teachback; Medical Home Discharge Communication; Discharge summary template; ROI calculator; Ticket to Home; Physician resources

The Appendix contains the tools above as well as a few other templates that may be of value for your team such as a Medical Home Discharge Communication and Discharge summary. Resources for physicians (QI terms glossary, readings, and on line learning) are also included. The ROI calculator is addressed in the next and final PediBOOST section “Continue to Improve”.

Two other helpful documents are “Teachback” and “Ticket to Home”. Teachback is a method that can be used at almost any encounter throughout the hospital stay. The method employs use of questions that prompt the patient and family to re-state the discussion had in their own words. This is contrasted to being asked “do you have any questions?” or “did that make sense to you?”, both of which can be answered with a “yes” or “no” which do not truly prove the communication was received as intended. The Teachback document gives a step-by-step instructions on using this method, as well as resources for further education.

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The “Ticket to Home” is quick form that can be given to the patient and family that uses elements of Care Transitions Measures-3 (CTM-3) developed by Dr Eric Coleman. Questions address understanding of the reason for hospitalization, medications and their use, and more. The team can use the patient and family’s responses on this form to identify areas requiring further discussion. This form is intended to be completed on or soon before the anticipated discharge.

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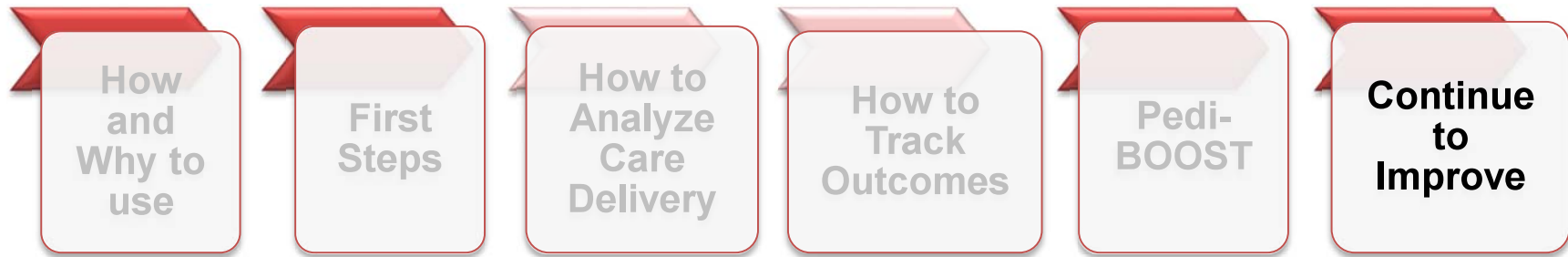
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Continue to Improve

- What did I learn?
- Variation - Interpreting the Data and Finding Trends
- Attention to Culture

Maintain the Good - and Spread the Improvement

Return on Investment

- ROI calculator
- Final Words: The Leadership Investment

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What did I learn?

By now you have implemented your project, having chosen to use all or part of the tools given to you here in Pedi-BOOST. Even if you have chosen to pilot in a small area or selected population, assessment of your outcomes and barriers to success are critical. As discussed earlier, obtaining, analyzing, and presenting data graphically to your team members helps all to see gains and address challenges. One way to systematically and consistently re-assess your project's status is to use the Project Layout Worksheet to compare changes in your chosen metrics, list reasons why targets were or were not met, and plan for the next cycle.

You may have learned that:

- Your barriers were greater than expected – was the time to complete a checklist greater than anticipated?
- The new interventions did not address something unique to your institution – do all patients have to walk to the outpatient pharmacy to obtain discharge medications?
- Change was not fully embraced – was a key thought leader not included in the planning and decision-making?
- Operations were not easy – were lists and guides available at many sites? (patient record, nursing unit, physician work room)
- Operations were not clear – did processes make sense to those who were not part of the core team?
- Benefits were not clear – did team members embrace the project for its benefits?

But you may also have learned that:

- Performing the needs assessment was insightful and allowed for implementation of a solid discharge process at your site
- Data that is easily obtained and displayed visually to team members is critical to success

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- Frequent discussions and review of data (weekly or bi-weekly to start) with team members engenders support and enthusiasm for the project
- Having a team that embraces change, empowers team members and agrees on guiding principles leads to success even in the face of setbacks or barriers
- Laying out the project aided in step-wise planning, definition of team roles, and securing of resources
- Using the PediBOOST Toolkit offers a consistent approach toward pediatric discharges

Variation - Interpreting the Data and Finding Trends

If you do not look for variation, you will not find it. As you track your outcomes it will become apparent that there is variation in practice. It is important to determine which variation is appropriate variation (inherent natural fluctuations in the system as noted in Part 2) and which is not. Similarly, if you do not determine why there is variation, you will not be able to adequately address issues that will improve compliance. Are there *special causes*? (E.g. Intermittent adherence to tool use by some team members, lack of printed materials on one unit, or patient type not addressed well by the tools). Is there a *common cause* causing lack of success? (E.g. no agreement on the change needed by team members; processes and tool use not reviewed with team members). Or is the common cause variation you see due only to natural system variation? (E.g. satisfaction with tool use varies with new resident group rotations, percentage of residents participating varies with census, return to emergency department rates varies with level of acute respiratory infections seen). *Trends* can be identified by reviewing graphs and reviewing adherence to processes.

Graph your data (refer to Part 2). Run charts and statistical control charts are usually more impactful than presenting a table with numbers. Adherence to processes can be assessed in a number of ways, such as reviewing steps with team members at a meeting, observing a discharge, asking team members to draw a flow map of their work, reviewing completed checklists for consistency and validity. Barriers to implementation can be addressed by compiling this information and presenting it to the entire team or to a smaller group of key leaders, depending on the issues identified.

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Finally, do not hesitate to use examples that demonstrate success! Remember to take responsibility for problems and to give credit for success to the entire team.

How to review graphs

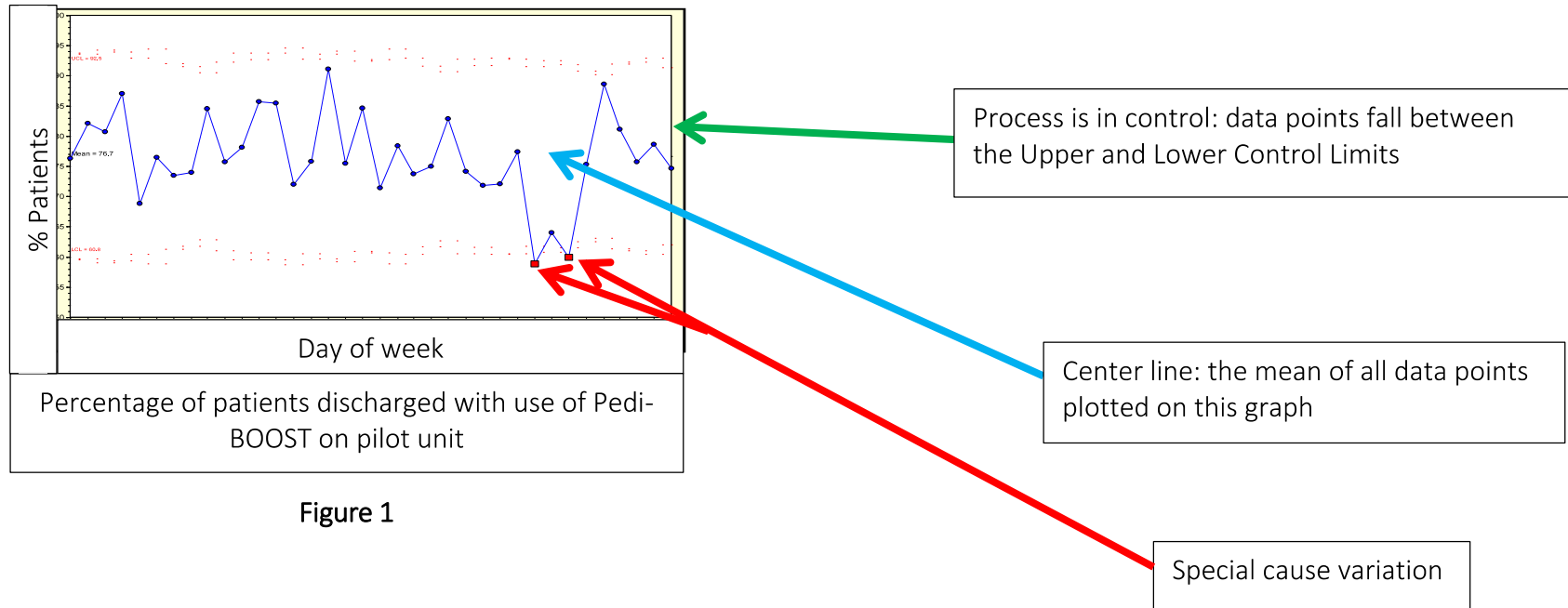


Figure 1

Put in your control limits (traditionally there the 3 standard deviation lines). When a point falls outside of these control limit lines, then the team must responsibly determine whether a special cause has occurred. If one has, then determine if the results with the special cause make the system better or worse. If worse (as in the example in Figure 1), then that cause should be eliminated if possible. If better (this would be a point *above* the upper control limit due to e.g. one nurse

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is highly engaged in the project and the team involved with her completes all tasks consistently), it may be appropriate to intentionally highlight the special cause within the system and look for ways to spread the gains .

How do I recognize a *trend*? Statistically, a trend is noted when there are 6 or more points (some state 9), all on the same side of the center line, there is a shift in the process. Figure 1 shows a process in control – no trends – but with 2 special cause events. Can you see any trends in the data below? Compare this now to Figure 2 (same data).

26.53%	0.00%	4.00%	13.04%	14.29%	14.49%	39.34%	55.93%	54.05%	62.86%	70.59%	66.67%	78.57%	49.06%	57.14%	63.64%	63.46%	43.16%	25.67%
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	avg	SD

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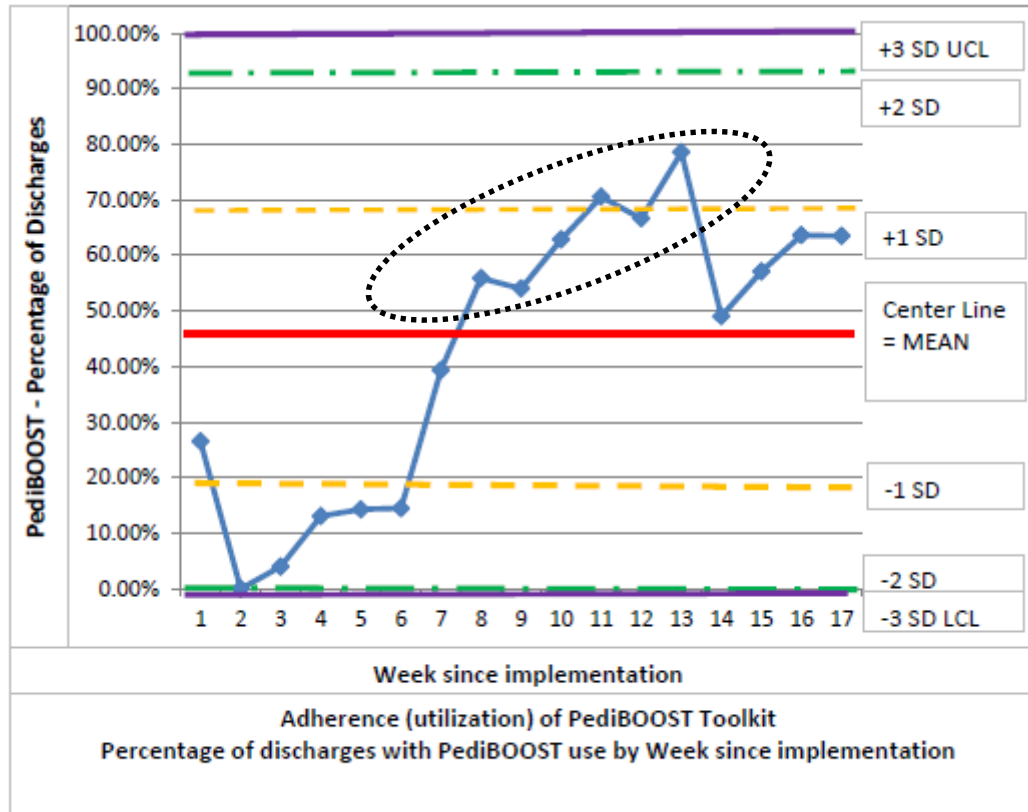


Figure 2 demonstrates a number of points:

- √ The center line (mean, calculated from all data points noted in the graph)
- √ 1, 2, and 3 standard deviations (SD) calculated from the sample
- √ Plus and minus 3 SD are noted as the Upper (UCL) and Lower (LCL) Control Limits
- √ Because percentages are finite (0-100), calculated SDs falling above or below these numbers are noted as 0 or 100 (respectively)
- √ A trend of 6 points (circled)

Figure 2

How to review processes

In addition to reviewing the above data on use of the tools, satisfaction, and other metrics you chose at the start of the project, it is important to ensure processes are working. There are a number of ways to assess this as noted above. If you

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do not have resources to perform observations, give team members a process map you may have created earlier and/or the PediBOOST tools and ask for a review, possibly using a recent patient discharge as a case scenario. Questions to pose may include:

- Does everyone agree on who is completing which part of the discharge process? Is this clear?
- At what frequency should the GAPP Tool be used for re-assessments? Is there a best time frame for certain patient types? For certain units or teams?
- Is RISK scoring consistently completed? Is there agreement on assigning patient risk between team members?
- Are the components of the R-PHIX Tool being completed in an appropriate time frame prior to discharge? Why or why not?
- Are components of the R-PHIX Tool that will require continued care post-discharge noted and incorporated into the discharge communication? Is this being incorporated in a way that is effectively received by post-hospital care providers?
- Is the Final Checklist being reviewed by all team members? What happens if items are not completed?

Once you have identified barriers, solutions, and also highlighted best practices, define a time frame for implementing any changes and re-assessment of the impact of these. Remember to choose small, relevant, attainable changes to better assure success. The Project Worksheet (appendix) may be helpful for this step and subsequent cycles. Some changes may benefit from a rapid (few days) check to see if practices have indeed been successfully changed. For most changes, the time between re-assessments of the PDSA cycle are best done weeks or months after the change.

Attention to Culture

Remember that “culture eats strategy for lunch”; a powerful quote attributed to writer and renowned management consultant Peter Drucker popularized by Mark Fields during his leadership as the Executive Vice President, Ford Motor Company beginning in 2005¹. Return to the First Steps section of this Toolkit (Part 1). Have institutional support or team roles changed? Return to Creating the Culture and Guiding Principles (Part 3). Are PFCC, empowerment, continuum of care

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orientation, and a commitment to patient safety embraced by team members? Leadership of the PediBOOST team requires attention to the culture and personal team relationships (using facilitating, counseling, and coaching skills) as well as task/process completion (delegating, directing, and again coaching skills). There are many ways to manage change, however the most commonly cited steps are from Kotter²: create the sense of urgency, form a powerful coalition (team), create a vision, communicate the vision, remove barriers, create short-term wins, build on the change, and anchor the changes into the corporate (hospital system) culture. Some of these steps are also found in the DMAIC method (see Part 3). At this step of *Continuing to Improve*, use the graphs, trends found, process review to create short term wins. Reward best practices created at your site and team successes with team and public respectful praise and acknowledgement of specific skills attained. Present data at committee meetings and create posters for public hallways and hospital staff report/work rooms.

Maintain the Good – and Spread the Improvement

Once PediBOOST has been implemented, it may seem appropriate to move on to other issues and to stop monitoring the process. But to avoid hard work going to waste, resist this temptation. Do *not* assume the discharge process is “fixed” simply because the intervention has been implemented. In fact, Kotter states that many projects fail because complete success is declared too early. To make the new process change part of daily habit takes time. The critical short-term wins are only the beginning of the process of achieving long-term change. To build on the change and assure sustained success, the team should continue to meet, using the outcomes (see graphs above) to determine where to emphasize actions.

At this step then:

- After every cycle, review data and processes with the team during planned, scheduled team meetings
- Review monitoring intensity – reduce frequency of monitoring if not sustainable at initial levels, but do not drop too low
- Set relevant, achievable goals to continue building on the momentum and assure continued short-term wins
- Embed what works well into system ‘fixes’ to make it easier to do the right thing

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- Keep the team cohesive but look for new team members with enthusiasm or content expertise to continue to build upon the gains made
- Keep the team engaged by having a 'journal club' on latest methods for discharge processes and publications related to at risk populations. Have a conference call with other PediBOOST sites to share lessons learned.

Creating breakthrough levels of improvement is hard work, but it also can be exciting and rewarding. Ideally, others will learn from your experience and implement your interventions in their own environment. The improvement in the discharge transition in your target population can serve as a model for other areas in your organization. Some points to consider when defining where to disseminate your successful project in a Phase II:

- Which patients would most benefit from the PediBOOST Toolkit?
- Are key leaders and team members available for a Phase II of PediBOOST?
- What are the strengths, weaknesses, opportunities, and threats (SWOT) of having a Phase II? ...of having a Phase II now? ...of having a Phase II for a particular site or patient population?
- Can a subset of the PediBOOST team serve as consultants to Phase II?
- What specific lessons learned would affect the success of a Phase II?
- What are the competing priorities of the institution that may affect a Phase II?

Based on the above, and using the First Steps (Part 1), determine the best timing, people, and geography for a Phase II implementation. As with the first PediBOOST implementation, small changes are best so do not hesitate to start to spread the success!

Return on Investment (ROI)

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ROI calculator

It is clear that clinical quality outcomes should drive healthcare decisions. However the metrics chosen for PediBOOST are broad and intended to address the real issues of resource management and cost conscious care. Some metrics will more readily address this, such as a decrease in return to emergency department or re-admission. Others may be more defined, such as decreased repeated laboratory studies or medication costs due to better coordination of care at discharge. Inpatient wasted resources related to discharge may be bed flow delay or re-admission³, but perhaps more tangible for pediatric patients may be: delayed outpatient consultation or follow-up testing resulting in mis- or over-use of medications/therapies prescribed at discharge; failure to schedule simultaneous specialty follow-up visits resulting in ineffective visits if decisions cannot be made in isolation; or failure to transition therapy visits to school resulting in parent loss of work. While most of these are outside the scope of PediBOOST, addressing ROI in some form is critical to keep hospital leaders attentive to any new project⁴. Finally, as the Affordable Care Act⁵ has become a reality, the changes made through PediBOOST which may adversely affect revenue generation may instead add revenue in an Accountable Care Organization (ACO) model. In such a model, organizations are rewarded for coordinated, efficient, cost-conscious care⁶⁻⁹. In an ACO, acute care encounters of any kind (hospitalization and emergency department visits) are seen as a failure for not only the patient, but the organization's finances as well.

The table addresses both "hard" (quantifiable, often from administrative databases) and "soft" (harder to quantify; survey databases) dollar ROI:

Hard Dollar		Soft Dollar	
<i>(↓ = lost revenue/cost; ↑ - increased revenue/savings)</i>			
Re-admissions reduced <i>In current medical reimbursement environment</i>	↓	Patient care clinical outcomes improvements	↑
<i>In Accountable Care Organization environment</i>	↑		
Resources expended for PediBOOST	↓	Hospital ratings improvements	↑
Specialty clinic and pharmacy costs reduced <i>IN current medical reimbursement environment</i>	↓	Patient Satisfaction, PFCC enhanced	↑
<i>In Accountable Care Organization environment</i>			

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Bed Flow and ED Flow improvements	↑	Hospital and Medical Staff satisfaction enhanced	↑
Re-admissions penalties avoided	↑	Primary care provider satisfaction enhanced	↑

A ROI calculator is included in the Appendix. The calculator is intended for use by PediBOOST team members, however some sites may find it easier to ask a member of the hospital billing/revenue cycle for assistance. The soft dollar ROI should not be underemphasized: satisfaction gains can lead to increase referrals by PCPs, decrease human resources workload, improved staff retention (all), and significant patient-family-community reputation enhancement.

Final words - The Leadership Investment

PediBOOST is an effort that aims to meet the challenge of improving safety at the time of hospital discharge for pediatric patients. It is, however, a project based in team building, culture change, patient and family centeredness, and leadership. Because of this, when done effectively the ROI of PediBOOST is much more than what is evidenced by the clinical and financial outcomes and improved metrics chosen in Part 1. Success in this project will influence other unrelated work, excite others to attempt change, result in other leadership opportunities for team members, and spark ideas for broader projects related to patient communication, education, clinical care coordination and more. This ROI should also be tracked where possible, and recognized as a “leadership ROI”.

Congratulations on committing to PediBOOST!

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APPENDIX

Obtaining Institutional Support Step-by-Step

**** Note:** It may be helpful to refer to the *Return on Investment (ROI)* section with this document*******

Implementing a successful intervention requires support from your medical center leadership. To obtain support, clearly explain how Pedi-BOOST efforts will enhance quality and safety, improve processes and patient satisfaction, and impact the hospital's reputation and financial performance.

1st step: Do I need IRB (Institutional Review Board) approval/waiver? The majority of institutions do not require IRB review of local quality improvement work. IRBs review research, and are tasked with assuring human subjects protections are in place and meet many standards. Some institutions do however require IRB review. Check with your institution's quality management department and/or your local IRB to determine if you need to submit your project to your local IRB for review. For use of quality improvement work for other than local improvement efforts, it is recommended that you contact your institution's quality management department and obtain guidance from your local university academic department/school of medicine/employer based on your affiliation/employment model.

2nd step: Create a direct line of communication with a senior administrative officer. This will be the "Executive Sponsor". This can be someone in the "C suite" (Chief Executive Officer, Chief Medical Officer, Chief Nursing Officer, Chief Operating Officer, Chief Informatics Officer) with whom a relationship has been built through other project work. If this is not possible, meet with the Director of the unit on which the pilot will be performed, and also with the Patient Safety Officer and Marketing/Customer Relations Department. Discuss the benefits of the Pedi-BOOST project with each, and then ask for support and for one or all of these members to prepare a joint presentation to a selected C suite member. Choose a C suite member most likely to resonate with the project and with those on the team. A letter (sample below) may be sent prior to such a meeting to help set the context for the meeting.

3rd step: Bring a few relevant documents to the meeting. Use visual aids and family vignettes to make the case for the need for Pedi-BOOST. Aids can be graphs related to metrics (baseline data) or information from team members or the unit director, Patient Safety Officer, or Marketing/Customer Relations Department. Be prepared to make 2-3 points that are easily noted on the graphs or depicted by the vignettes. Highlight a few elements from Pedi-BOOST that would address these issues.

Do not bring multi-paged proposals and do not review every detail gleaned from the data and vignettes. A single paged handout is more powerful than reams of information. Many

find that following the “SBAR” (situation-background-assessment-recommendation) format is helpful, where the “R” may instead be replaced with request-and-discuss. Alternately, some prefer to use a SWOT analysis (strengths-weaknesses-opportunities-threats) to make the presentation resonant with an executive. Examples are shown below.

In addition, it may be valuable to include a SMART aim that identifies the patient population to be addressed, the time frame, and all elements of a specific, measurable, achievable, relevant and time-bound aim. This will help clarify the project in one crisp sentence. Include a gross list of resources needed, such as personnel time, office products, and team member/trainer time.

Pay attention to the time allotted for the meeting as well as the preferred presentation format of the prospective Executive Sponsor. The latter can be obtained from those noted in the above step one, or from the executive’s administrative assistant.

4th step: Meet with or send regular updates to the Executive Sponsor on a regular basis. Invite the Sponsor to participate in team meetings, ideally for 5-10 minutes to either hear a key presentation or give words of support or advice.

Sample Cover Letter to Executive Sponsor

Dear *(Executive Sponsor name here with title)*

As *(pediatric hospitalists; team of XXYY)*, one of our key goals for patients is a safe transition from hospital to home. Despite our best efforts, patients are sometimes negatively affected by the healthcare system that often does not adequately address patient and family medical, social, and medical literacy needs.

Attached are findings of a preliminary evaluation of current state of the discharge process at our hospital. Also attached is a summary of what is occurring nationally in this area *(use some Pedi-BOOST information here)*. In the interest of optimizing the care of our patients, *(names here)* would like to request: *(choose most appropriate)*

_ a meeting at your earliest convenience to discuss this topic and how improving the discharge process could align with the strategic goals for our organization

_ a meeting of stakeholders including *(list any key individuals here)* to discuss next steps in improvement of discharge process

Sincerely,
(pediatric hospitalists; team of XXYY)

SBAR for Pedi-BOOST (example)

Situation: Over 5000 children are discharged yearly from Cute Kid Hospital. Over 25% of these children return to the emergency department within the month after discharge, and 62% of these are re-admitted with a problem directly related to their first (index) admission. Patient and family satisfaction scores for “would recommend” as well as most survey questions around “good provider communication” are at ~ 70% for “sometimes” to “always” responses. ED throughput time has steadily grown over the past year from 92 minutes to 212 minutes on average and is highest on days with more admissions.

Background: Most hospital providers of care have not been taught how to prepare patients and families for discharge. Pedi-BOOST, based on the adult model of BOOST from the Society of Hospital Medicine, is a toolkit that uses evidence from adult and pediatric literature and best practices to create a model for improving the discharge process. BOOST has been highly successful at decreasing re-admission rates in adult populations and in increasing both hospital provider and patient satisfaction. Cute Kid Hospital does not have a consistent, interdisciplinary, patient and family-centered discharge process.

Assessment: Cute Kid Hospital has a high re-admission and return to emergency department rate. This increased emergency department volume is one contributor to the worsened throughput time and patient and family satisfaction scores. Improving the discharge process using an interdisciplinary approach that is patient and family centered would improve each of these rates and scores.

Recommendation: Institute a pilot of Pedi-BOOST, the pediatric version of the successful BOOST Toolkit, starting with an engaged unit of hospital staff on one busy unit in Cute Kid Hospital. Once successful, the project can be disseminated across all units in Cute Kid Hospital.

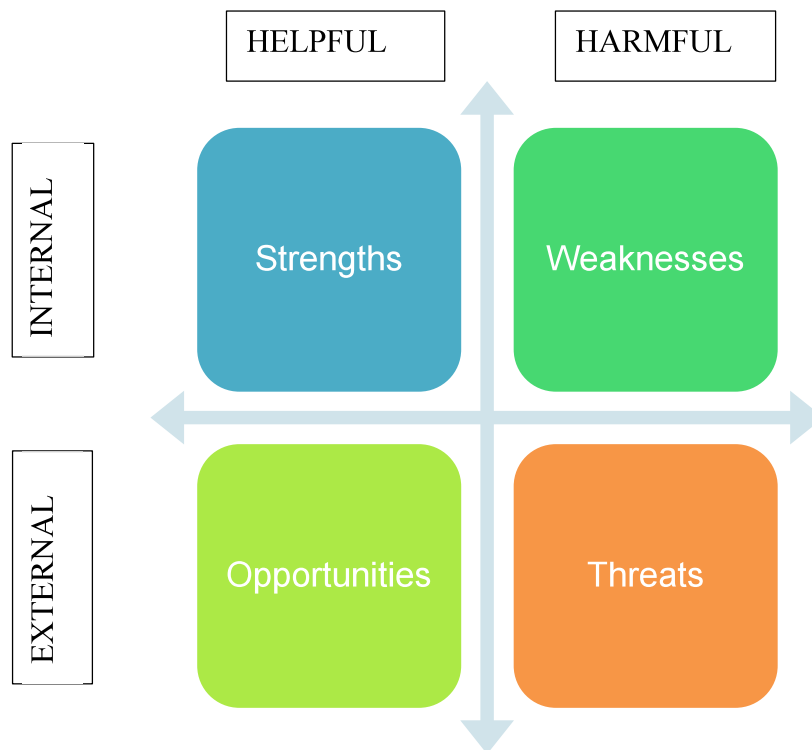
SWOT analysis (example)

Strengths: characteristics of the hospital system, Pedi-BOOST, and the project team that give it an advantage over others (why success is likely). Most often “internal” to the organization.

Weaknesses (or Limitations): are characteristics that place the team at a disadvantage relative to others (why there is risk to performing this project, such as competing priorities for the nursing unit or the hospital system). Most often “internal” to the organization.

Opportunities: chances to improve or gain something if Pedi-BOOST is successful (refer to metrics chosen here; include other future opportunities not immediately related to Pedi-BOOST such as creating leaders for future QI projects). Most often “external” to the organization.

Threats: elements that could cause trouble for the project (refer to barriers list here); *or*, unwanted outcomes that could occur if the project is not done (what may happen if Pedi-BOOST is not performed?). Most often “external” to the organization.



How to Run an Effective Meeting

To distribute to all team members

I agree to:

1. **Start and end on time.** If I need to arrive late/leave early due to clinical/work/family obligations I will inform the person leading the meeting prior to the meeting start time.
2. **Leave rank at the door;** everyone on the team is valuable and will participate fully.
3. **Listen actively,** respect others when they are talking, and refrain from having side conversations. I will not interrupt others.
4. **Practice "respectful engagement."** I welcome differing opinions and will not make disparaging comments. I will listen with an open mind and challenge ideas, not individuals.
5. **Support the group outside the group.** If I have disagreements or negative opinions they will stay in the room.
6. **Speak up.** If I do not speak up on a topic, I cannot later state I do not agree with the group decision.
7. **Respect the groups' time** and keep comments brief and to the point, so that everyone has a fair chance to speak.
8. **Actively identify shared interests/agreements,** without minimizing legitimate disagreements. I will take into account the interests of the group as a whole.
9. **Complete assignments on time,** or signal as early as possible that I cannot do so. I am accountable for following through on agreed upon actions and will help the group hold ourselves mutually accountable.
10. **Be responsible for knowing the content and plans of all meetings,** even if I cannot attend. If I cannot attend a meeting, I will read the minutes and contact team members for clarifications as needed.

Optional - name, signature and date

Name _____ Signature _____ Date _____

Effective Leadership Styles and Tips

Leadership styles vary, both between individuals and in differing situations. Many leadership books and articles note that behaviors such as coaching, directing, facilitating, and delegating may be used depending on whether the need is higher for tasks completion or instead relationship development. Working with individuals from different generations and cultural backgrounds may require a leader to develop leadership skills not previously honed. In addition, a leader must be able to work with direct (in person) and indirect (email or phone) communication methods and understand the benefits and potential miscues each may cause. Key attributes of any leader are:

Self-awareness: recognition of personal emotions and thoughts and the influence of these on actions

Self-regulation: abatement of emotion or ability to re-route to an emotion more effective for the situation.

Motivation: identification of key drivers for individuals or groups, and the effective use of these to help all achieve goals. Key drivers should be internal in most cases, often foundational but also inspirational.

Empathy: awareness and sensitivity to others' needs and emotional states.

Social skills: ability to balance interpersonal relationships with multiple people, in varied settings, and under various stressors.

Which attributes do you have? Which do others feel you have? Think of the last meeting you were in where you were a leader. What made it successful? What was not productive?

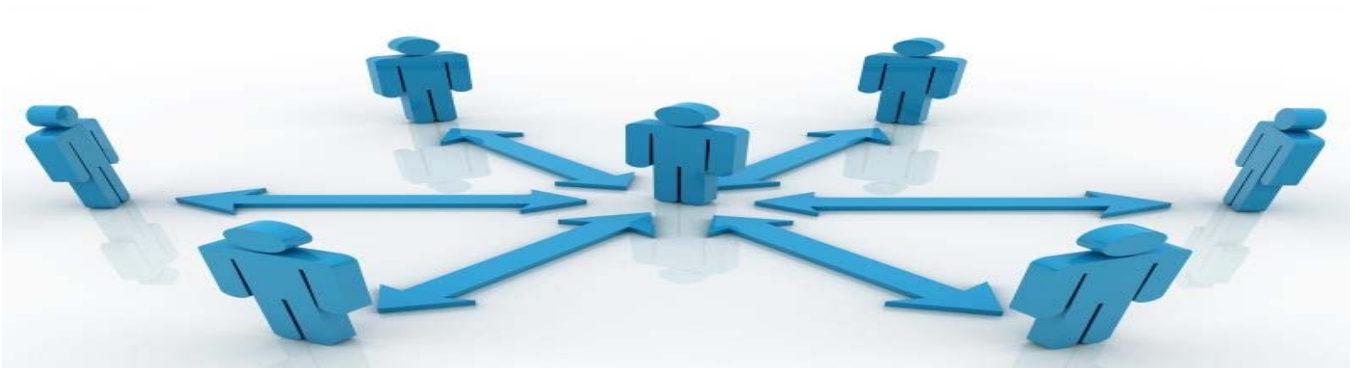
Ineffectiveness can be due to:

excessive control; competitive behavior; lack of presence with the team (failure to connect in a real way); demeaning behavior, particularly in team environments; taking credit for the team's work.

Effectiveness can be realized with:

consistent approach to problem-solving; willingness to train individuals who are not at performance expectation; effective and frequent communication (bidirectional, listening and acting on what is heard); making hard decisions rationally and honestly, in group meetings and not in private sessions.

Leadership is a verb – it is interactive



How to Run an Effective Meeting

An effective meeting must have some common elements. Here are the most common considerations when planning any meeting.

1. Determine why you are having a meeting. What do you want from *this* meeting? I would like to...

- Make a decision
- Have at least 3 ideas for how to resolve problem X
- Review our work to date, show two graphs on our progress and determine next steps

From this, you can now know what you need to prepare, and who are the critical individuals who need to present information, or be present to review it.

2. Be efficient: Prep before the meeting

Make an agenda. This sounds difficult, but it is not. Put the issue on the left side, and a number of minutes, and the responsible person's name on the right hand side. If you are starting out and unsure of how much time it takes to present data or have a discussion, ask someone at your institution for an agenda from a meeting of someone you know is effective. Use this as your template. Always include your meeting objective at the top, along with the meeting location/date/time.

To prepare an agenda, consider the following factors:

- Priorities – what absolutely must be covered?
- Results – what do you need to accomplish at the meeting?
- Participants – who needs to attend the meeting for it to be successful?
- Sequence – in what order will you cover the topics?
- Timing – how much time will you spend on each topic?
- Always end with “next steps” – what you will do before the next meeting

Make sure all team members receive the agenda and know their roles. Do they need help to prepare? Do you need someone to be a leader to discuss one particularly troublesome topic? Remember that you are the leader, and often the facilitator, but that all team members should participate. This includes presentations and active roles at the meeting.

Ask someone to be a time keeper. Be willing to move something to the next meeting if necessary. Send out information prior to the meeting if possible. Do not review things for those who are late!

3. Be efficient and effective: During the meeting

- Take notes along the way and state “so we agree to move the time of completion the R-PHIX to X as a pilot for this next week. That will be championed by Rob RN and Katie resident, yes? OK, now moving to the next agenda item...”
- Be aware of your team members; assure no one is dominating the conversation; involve all present in discussions.
- At the close of the meeting, quickly summarize next steps and ask everyone to review the meeting summary you will send out by email in a few days.

4. Review your work and prep for the next steps in your project

Review how you did. You may want to ask for feedback from a few participants. Prepare the meeting minutes (or review and edit if someone else took them for you). Send these to all participants and other stakeholders. Ask for all to respond by a certain date (a week or less) with any changes or concerns. A lack of response should be noted as tacit approval of the minutes, and therefore of the tasks assigned to all.

Teach back Process

“Teach back” is a method that allows the treatment team to engage the patient and family in managing their disease in a patient and family centered way. More traditionally, education around health issues has been given with perhaps a follow-up yes/no question such as “did that make sense?” or “do you understand?” Teach back instead asks patients and families to repeat what was said in their own words.

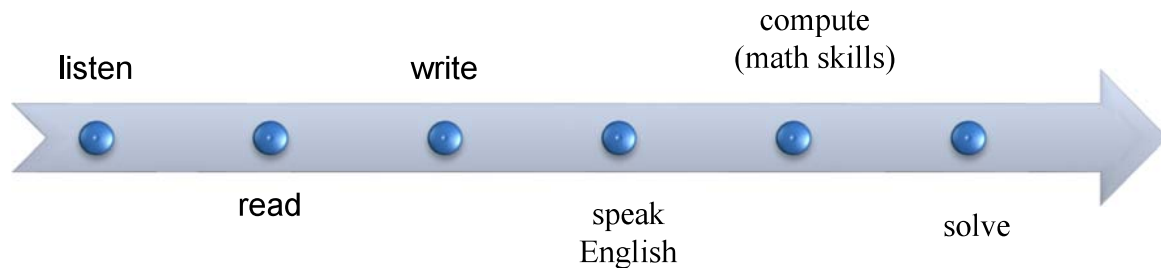
Have you ever had this experience?

“I had just explained that the child had a pneumonia with fluid around the lung. I stated that the child needed a tube put into the chest to drain the fluid, and that the antibiotics would also need to be changed. I reassured the mother that the child would have adequate pain control and in fact would be having the tube placed with use of what is called sedation medications that make the pain less and relieve anxiety. I asked her if she understood, and she nodded her head.”

What if this happened instead?

“[same scenario as above]...relieve anxiety. Then told her that I wanted to be sure I explained everything clearly. I asked her ‘Can you please explain it back to me so I can be sure I did?’. She looked at me with a smile and said ‘my son needs a tube in his chest, and he needs antibiotics and other medicines...what was the name of them? ...are going to be put in the tube to make it work.’”

Clearly the latter example demonstrates the difficulty in effectively communicating with patients and families. Add to this the other barriers of language, culture, being in an anxious or stressed state, health literacy, and others, and the process of communicating any information or new skill is clearly challenging. Recall that literacy is a spectrum:



Some helpful steps:

- Speak in common terms (lay language), and choose 2 or 3 key points to be made if at all possible
- Stop after you have made 2-3 points
- Use pictures and handouts where possible

- Ask the patient and family to explain what they heard, in their own words
- Carefully and respectfully note any misinterpretations
- Ask the parent to restate what they heard again

Some helpful phrases:

- “What will you tell your father/(child’s name) father today about the changes we made to your insulin today?”
- “We’ve gone over a lot of information, a lot of things you will need to do once you go home with the new feeding pump for your baby. In your own words, please review what we talked about. How will you make it work at home? Do you have everything you need?”
- “I want to be sure that I explained your medication correctly. Can you tell me how you are going to take this medicine?”
- “Many people have difficulty reading and understanding the medical information I give them, so please feel comfortable asking questions if there’s something you don’t understand.”



Some helpful behaviors:

- If a patient or family does not understand what you stated, assume you did not provide adequate information, or need to adopt a different approach
- Assume patients and families feel uncomfortable revealing what they do not understand.
- Ask families if there is a particular family member they would like present when discussions occur.

Some helpful terms:

Medical term	Common term/phrase
Cardiologist	Heart doctor
Lumbar puncture	Put a tube in the back using a needle, to take out fluid that is around the nerves
Antibiotics	Medicine to kill infection caused by things called bacteria
CT scan	Special picture of the (body part here) that helps see what is inside; like an XRay but more pictures and more detail can be seen
IV catheter	Tube in the vein used to give medicines or fluid if you cannot drink

Anemia	Low count in the blood of the cells that carry oxygen all over the body
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Some helpful habits:

Make Teach back “automatic”. Check the daily work flow of team members and see where Teach back can be embedded as a habit. Try to have all patients receive Teach back once a day starting with the day of admission. Ask each team member to try Teach back on one patient, one day. Meet that day (preferably immediately afterward) to compare outcomes. Did the patient or family understand the information? What percentage was communicated effectively? How long did it take to perform Teach back? What part of the work day, for which team members, is best suited for embedding Teach back?

Using this information, pilot the new work flow, and follow-up daily with the team until the Teach back is successfully embedded in the daily work flow for at least one team member per patient daily.

Some helpful training:

BOOST Teachback DVD and Curriculum, and a webinar “Implementing Teach Back as a System-Wide Patient Communication Strategy” are available for purchase at: https://www.hospitalmedicine.org/source/Orders/index.cfm?section=SHM_Store&task=3&CATEGORY=EDU&PRODUCT_TYPE=SALES&SKU=EDU%5FBOOST%5FDVD and at: http://www.hospitalmedicine.org/Content/NavigationMenu/Events/SHMWebinars/Principles_of_Hospit.htm

Videos: There are a number of videos available for free on Teach back. One is noted here (accessed 06.06.2012): <http://youtu.be/2N0gCzdVFnM>

Question/answer role play: You have the feeling that the grandmother who is primary caretaker for a 12 year old diagnosed with Crohn’s disease does not understand the severity of the disease and the importance of taking the medications. She often asks the same questions many days in a row. You are worried about discharge tomorrow. Have one team member play the grandmother, one the nurse, and one the physician. Address the situations using some or all of the elements below:

- You the physician have seen the grandmother write down something when she is not aware you are looking. You believe she has limited writing skills and are concerned she may not be able to read.
 - How would you approach medication teaching for this family?
 - How would you engage the 10 year old patient?
 - What of the above may help in determining who should be in the room with the grandmother? How the education is performed? What type of handouts or documents might be used?

- How can you partner with other team members on assuring a safe and effective discharge?
- You the nurse have been repeating the same information daily and have noticed the grandmother does not seem to understand when you ask her to repeat what she has heard. You are concerned she may have a problem processing information. She is kind and attentive to her 12 year old grandchild.
 - How would you approach asking her about her comfort in going home?
 - What of the above may help in determining who should be in the room with the grandmother? How the education is performed? What type of handouts or documents might be used?
 - How can you partner with other team members on assuring a safe and effective discharge?
- You are the grandmother and are anxious about going home tomorrow with your grandchild. You are feeling confused and do not understand the medication names. You have taken care of your 74 year old spouse who has Alzheimers and diabetes for the past 2 years. You are overwhelmed by the worry that you may give a medication in error to your grandchild. In addition, your arthritis has flared and you are not able to write well for the past few days.

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The Final Checklist

Element	List any not addressed here and why (or note "none")	Action needed? (list)	Comments
GAPP* elements			
R-PHIX* elements			
Medication Review – why/how/when should I call if concerns			
Teach back* – both patient and family. Include “if/then” scenarios			
	List which given/method used		
Patient handouts – include websites, paper action plans or diagrams (tube use; congenital heart disease, other). After visit summary or other hospital template may be used for additional general information			
Follow-up visit(s) scheduled – including for tests (ECG, follow-up labs, etc). Medical Home follow-up should be within 1-3 days in most cases.			
Medical Home Communication* – this should be “immediately” at discharge or as soon as possible (in			

person, phone, fax, secure email, electronic record message)			
Interdisciplinary Family meeting prior to discharge			
Discharge summary* – received by Medical Home provider			
Telephone contact with patient/family 24-72 hours after discharge			
Examples of items noted with * are available in the Appendix. For High Risk patients, every effort should be made to complete all elements of this Final Checklist.			

Discharge to: __ parent __ caregiver __ other (list) _____
Discharge Condition: __ at baseline __ at new baseline __ fair/good and improving
Discharge Medications (list all with name, dose with dosing instructions clearly noted,
and reason for medication):

Previous medications – still continued:

New medications:

Discharge Diet: Home diet or other (list) _____

Discharge Activity: ad lib or other (list) _____

Pending labs/studies: _____

Follow-up (schedule any possible appointments/studies; note date/time):

Discharge Instructions (include what signs or symptoms should prompt a call to the PCP
or specialist and why): _____

Name: _____

Signature: _____

Pager or other contact information: _____

Date and Time: _____

Pedi-BOOST Return on Investment (ROI)

Summary and Frequently Asked Questions

**** Note:** It may be helpful to refer to the *Obtaining Institutional Support Step-by-Step* document with this document*******

What is ROI - and for whom does ROI matter?

When assessing the return on investment (ROI) for Pedi-BOOST, the following questions should be considered. Who are the stakeholders? How am I defining ROI? How can I demonstrate ROI that is not direct dollar costs or savings? How and when should I communicate ROI results with these stakeholders?

Using the Pedi-BOOST Toolkit may result in changes to the outcome metrics chosen (see Part 2), but in doing so the system may have also resulted in changes to job descriptions for individuals and/or costs to develop and implement the plan.

Your outcomes link to your ROI (examples below):

- Patient related – decreased re-admission rate; increased satisfaction; improved demonstration of understanding of disease process
- Provider related – satisfaction with program; enhanced communication skills; increased trainee engagement in QI projects
- System related – financial savings from improved hospital throughput; decreased emergency department visits
- Community related – improved PCP satisfaction scores due to improved coordination of subspecialty visits; increased timeliness of receipt of key discharge information by PCP; increased patient use of community resources as appropriate

What do I need to know about ‘how hospitals work’ to better make the case for Pedi-BOOST ROI?

Despite the fact that not all ROI is financial, controlling costs and improving care while maintaining costs steady is mandatory for any project’s success. Here is brief information on how hospitals are paid, who pays them, and why this is important to include when assessing Pedi-BOOST success.

How Hospitals Get Paid

Hospitals are paid differently based on how many patients are seen and the types of services rendered. In the United States there are two common payment methods in use today:

1. Fixed “Global Budgets” – these are used in systems such as Kaiser where funding will not vary according to the volume of services provided in a certain time period (e.g. a year). These systems receive a fixed amount of money to cover all expenses for a time period. The system then must then work to ensure patients are seen appropriately while not spending more money than is available to pay for those services. Hospitals in these systems may look for ways to control costs by buying services also at a set rate for a time period. If money can be saved in one area, it can be moved or shifted to another area to add a service or offset a loss. In this environment, Pedi-BOOST can offer improved provider and patient satisfaction scores, decreased bed days, and more opportunity to help the system work more efficiently and have improved patient and family outcomes.
2. “Utilization-Based Budgets” – these are used where funding will vary based on a combination of how many patients are cared for by the hospital, the types of services provided, and the mix of payers (also called “payer mix”, further described below) who will compensate the hospital for those services. Hospitals in these systems must anticipate who will pay the bill – the “payer mix” – and then anticipate new costs or new patient types (e.g. if a new surgical service is offered, what patients may come to the hospital merely due to knowing that service/surgical team is now available?). Types of services provided are also paid for differently, such as emergency department, radiology, infusion center and more. Common payers are listed below:

Who are the Payers?

Medicare: (uncommon for hospitals treating only children) Traditional “fee for service” Medicare coverage uses a prospective payment system, where a fixed amount, a “*case-rate*,” is paid for all hospital services provided during an admission. To determine payment, hospital administrative data describing the patient’s clinical condition and the services rendered during the hospitalization are used to assign each case to an MS-DRG. The compensation rate for each MS-DRG (Diagnostic Related Group) is based on national data describing average lengths of stay and average costs for that MS-DRG, adjusted for regional differences in wages and other costs. Except in cases where incurred costs are extraordinarily high, MS-DRG payments are not influenced by the actual cost of a given hospitalization. Under the case-rate prospective payment system, hospitals are financially rewarded for controlling costs for Medicare admissions. Under new regulations, care for many preventable hospital-acquired conditions is no longer covered by Medicare.

Medicaid: (common for hospitals treating children) Medicaid is available to financially disadvantaged children, their parents, the elderly, and those with disabilities. Some Medicaid programs operate on a fee-for-service system, while others operate as managed care programs (the latter is used in California). *For both types of programs, payments to hospitals are lower than the rates that Medicare pays and typically are far less than the total cost of providing inpatient care.* Because compensation is generally lower than costs, hospitals are rewarded for controlling costs for Medicaid admissions.

Commercial Insurance: (e.g. Blue Shield, Aetna, and others) A very small percentage of commercially covered patients are in an “indemnity” or “fee-for-service” model, where hospital charges are paid in full or near full rate such as a discounted fee-for-service (e.g. agreement to

pay 80% of hospital charges). Many commercially covered patients are in a managed care model. In the managed care models, the hospital contracts with the commercial insurance plan to provide acute care services to covered patients. Payment rates are negotiated with each hospital or health system and typically reflect a discount on the hospital's usual charges. Common types of rates negotiated between the hospital and the commercial insurer are

Case Rates, a fixed payment for a particular type of service such as an appendectomy;

Negotiated per diem, a fixed payment by day regardless of diagnosis but varied by intensity of service (e.g. a ward day rate differs from a NICU day rate); and

Capitation, a fixed payment per patient "member" of that plan per month to cover any hospital services that may (or may not) be incurred. This is often also called "partial" or "full" risk, depending on what menu of services the hospital is guaranteeing such as provider fees, infusion center, home care, pharmacy and others.

So, what does this mean for Pedi-BOOST?

Understanding the payer mix at your site will allow understanding of how Pedi-BOOST will affect hospital finances. Pedi-BOOST is designed to reduce length of stay and return visits, which is a positive for hospitals in all but the "fee for service" model. For this group, however, other benefits will likely outweigh this reality. In adult systems, the Clinician and Group Consumer Assessment of Health Care Providers and Systems (CG CAHPS) is used to assess communication, appointment timeliness, health education, and shared decision making, and other elements that are addressed in Pedi-BOOST. By implementing Pedi-BOOST for children hospitalized in adult systems (i.e. community hospitals or children's hospitals-within-a-hospital), system improvements in these elements can translate to adult discharges. At sites where BOOST has already been implemented, Pedi-BOOST solidifies these improvements system-wide.

In addition, the Accountable Care Organizations (ACOs), part of the 2010 Affordable Care Act (ACA), are being charged to specifically target readmissions and other components of care aimed at improved coordination of care for populations of patients¹⁻³. ACOs for Medicaid pediatric patients have begun in 2012. Other aspects of the ACA, such as Value Based Purchasing where reimbursements are tied to performance, physician quality reporting, and partnership for patients each require documentation of improvements, streamlined processes, patient and family engagement and more – all things included in the Pedi-BOOST Toolkit. Pedi-BOOST can assist tracking of processes, finances, clinical outcomes, and satisfaction needed for ACOs.

In the short run however, it is important to know the realities of hospital financing today as well as in the near future, and be prepared to address both of these with the hospital leadership.

What hospital information should I know?

Below are questions to ask of the quality department and/or finance department. Having a quality or patient safety officer as part of your core team is very helpful for this step.

Some Key Questions (refer also to Part 2 for metrics to collect):

- What is the current LOS for patients who will be in Pedi-BOOST?
- What is the cost of these cases? (you may be given charges)
- Do we currently make money or lose money on these cases?
- What is the payer mix? Will reducing the length or cost of these admissions help or hurt our hospital's bottom line?
- What is the readmission rate for potential Pedi-BOOST patients?
- Do we currently make money or lose money on the readmissions?

- Are the readmissions longer or more costly than the initial admissions?
- If we free up bed days are there patients that might fill those beds, potentially increasing hospital revenues?
- What is the ED wait time, “left without being seen” (LWBS) rate, and satisfaction score?
- Which specific diagnoses are being tracked or publically reported?
- What is the payment denial rate, and what are denial reasons?
- What do we know about the current level of patient/family/physician/staff satisfaction with the discharge process? Is there a family advisory council?

How do I present Pedi-BOOST ROI to the hospital leadership?

At and after discussions securing an Executive Sponsor (see *Obtaining Institutional Support Step-by-Step*), be prepared with reminders of the objectives of Pedi-BOOST and the outcomes to date. These should include:

- Metrics – see Part 2
- Identified key improvements valued by your stakeholders - a subset of the metrics, or new ‘wins’ noted during the implementation process. Examples may include identification of a subgroup of higher risk patients for whom Pedi-BOOST is particularly helpful or a parent group or family advisory council support
- Costs of implementation
- Projections over a future time frame – take care to note short and long term anticipated outcomes, such as re-admission rate (long term improvement) or satisfaction (short term for staff, short or medium term for patients and families). Address how costs may be higher earlier in the project and note where they may plateau after staff have been trained, where appropriate.
- Payer mix discussion – the leadership may wish to revisit contracts based on Pedi-BOOST outcomes.
- ACO discussion – it is very important to review all aspects of the ACA and highlight where Pedi-BOOST can aid reporting, outcomes, and reimbursements. It may be best to have a local expert help with this review and discussion, such as one of the team members mentioned in the *Obtaining Institutional Support Step-by-Step* document. You do not need to be a healthcare finance expert. However, it is helpful to have someone on the team who can speak to these issues and it is critical for any team leader to understand them to a basic level.

How can I better present dollar changes due to Pedi-BOOST?

In this appendix is an ROI calculator, created by BOOST and modified for Pedi-BOOST use. The calculator accounts for bed days, impact on the ED, and other specific payments such as performance payments or Disproportionate Share payments⁴. Expectedly, a calculator cannot include soft dollar benefits noted above.

To use the calculator, enter your hospital’s data into the green colored cells. Some values are noted as examples only. Hints are noted in the right hand column of the spreadsheet calculator.

Final words and the harsh reality:

Pedi-BOOST offers tools to improve the discharge process for hospitalized children. In doing so, many benefits can be realized by patients, families, staff, and others who seek or are part of healthcare delivery for children. Despite this, it is critical for the Pedi-BOOST team to realize how hospitals work and the competing pressures of those in the leadership suite.

The harsh reality: For the majority of hospitals facing financial pressures in the current economy, it can be very difficult for a hospital CFO to sign off on a QI project that requires financial investment and reduces revenues, *even if she/he agrees it improves patient quality.*

So, using the suggestions in this ROI summary are critically important to Pedi-BOOST success. In addition to the presentation elements above, listing real hard dollars (true money paid out or in) and soft dollars (intangible qualitative improvements, or harder to quantify cost or revenue effects) may help. Note for some hospitals, a decrease in re-admissions may result in a loss of revenue in the current healthcare payment world. It would be helpful to review this with someone who understands your hospital's payment model (see above).

Impact on Hospital Financials:			
Where ↑ is improved and ↓ is worsened			
Hard Dollars		Soft Dollars	
Pedi-BOOST Implementation	↓	Patient and family satisfaction	↑
Reduced re-admissions	↓ or	Staff satisfaction/decreased turnover	↑
↑			
Reduced ED LWBS rate	↑	Malpractice rates	↑
Increased bed utilization	↑	Externally reported disease, satisfaction metrics	↑
Others may be ACO payments (↑); medication errors/adherence to treatment regimens (↓↑ depending on drug cost responsibility); home care/patient support services (↑↓ depending on cost responsibility and payment model).			

With this ROI summary and the ROI calculator, Pedi-BOOST can be presented to the leadership in a thorough manner, inclusive of immediate and long term outcomes and hard and soft dollar benefits. With these, your Pedi-BOOST team can be successful!

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