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### Converting paper faxes to electronic faxes to improve patient care, decrease paper burden, and improve staff and provider satisfaction: A quality improvement project

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# Converting paper faxes to electronic faxes to improve patient care, decrease paper burden, and improve staff and provider satisfaction: A quality improvement project

Children's Mercy Research Days

May 8, 2023

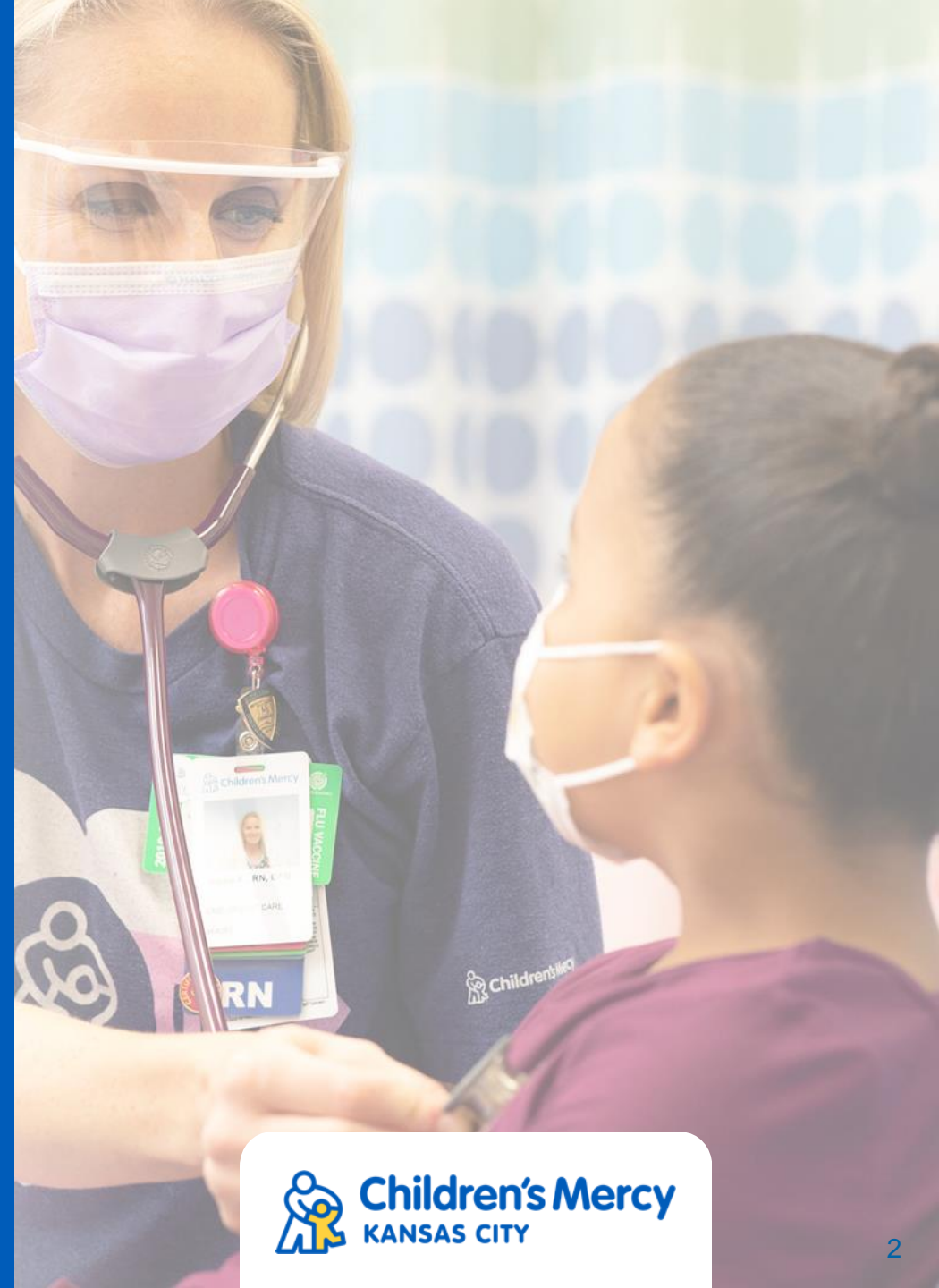
Amanda Lindenberg, DO

Stephanie Green, DO



# Special Acknowledgements

Mary Brock  
Elaine Albertson  
Dr. Mark Fisher  
Jason Chandler



A3 for Problem Solving

<b>Focus:</b> Patient care with prompt delivery of request for signature <b>A3 Team:</b> Stephanie Green, Amanda Lindenberg	<b>Owner:</b> Stephanie Green, Amanda Lindenberg	<b>Date:</b>	<b>Approved:</b>
<b>Sponsor:</b> Pediatric Rehabilitation Medicine		<b>Coach:</b> Jason Chandler	

### Clarify the Problem

What is the actual problem?

- We currently rely solely on physical therapy for requests. These requests include patient referrals, equipment prescriptions, change prescriptions, therapy orders, orders of medical necessity. This causes in other additional problems:
  - It means providers and administrative staff of the pediatric rehabilitation medicine department need to communicate in 4 different ways
  - Not all providers care to double check communication, so this creates delays in delivery of our physical documentation
  - It increases cost of physical therapy requests
  - It creates additional waste by requiring physical paper including paper forms, faxes, and use of office equipment
  - If providers are for the hard copies to be created via PDF/electronic versions, it puts the administrative staff backlogs
- Providers and administrative staff are not happy with the current system for fax completion

How satisfied are you with the current system to address these communication?

Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied
1	2	3	4
10	20	30	40
50	100	150	200

- Currently there can be a delay in completion of these physical hard copy forms received in the rehabilitation medicine office and/or delay of approximately 4 days on average, as we are not always present at the fax line during. We are up for other locations for faxing including fax and college business
- This can result in delays of prescription, resulting in provider:
  - Delay in patient care (not getting medications, equipment, therapy orders on time or medical necessity signed)
  - Dislike of their recording fees (excess duplication of work and paper)
  - Subsequent delay in delivery of equipment/therapy
- The target for this project would be to have a system that notifies all providers at all facilities to decrease provider and administrative staff burden, and to reduce the spend for time in completion of paper for repeated patient care which results in increased patient satisfaction

### Develop and Implement Countermeasures

Measure	Current	Proposed	Target	Method	Frequency	Owner	Start Date	Completion Date
Request for Signature	100%	100%	100%	Request for Signature	Weekly	Stephanie Green	1/1/2015	1/1/2015
Request for Signature	100%	100%	100%	Request for Signature	Weekly	Stephanie Green	1/1/2015	1/1/2015
Request for Signature	100%	100%	100%	Request for Signature	Weekly	Stephanie Green	1/1/2015	1/1/2015
Request for Signature	100%	100%	100%	Request for Signature	Weekly	Stephanie Green	1/1/2015	1/1/2015
Request for Signature	100%	100%	100%	Request for Signature	Weekly	Stephanie Green	1/1/2015	1/1/2015

### Break Down the Problem

What are the causes of the problem?

- Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature
- Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature
- Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature
- Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature
- Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature -> Request for Signature

### Check Results and Process

Note: This will be updated once we have our results since intervention is implemented. Data will be collected in the later manner it was collected pre intervention.

### Set a Target

- Primary Target: The department of pediatric rehabilitation medicine will reduce time to complete signature requests from an average of 4.0 days to 1.0 day (75%) by March 31st, 2015.
- Secondary Target:
  - There will likely be changed by the outcome of our primary target
  - The department of pediatric rehabilitation medicine will reduce provider and administrative staff satisfaction on faxline level (based on survey) at completion date of March 31st, 2015.
  - Customer measure to provider while staff satisfaction based on pre-intervention and post-intervention survey
  - The department of pediatric rehabilitation medicine will reduce physical hardcopy requests by the provider by 50% by March 31st, 2015.
  - Reduce measure to the number of paper requests to each provider

### Identify Root Cause

### Standardize and Follow Up

- Time to completion:
  - Initially monthly check-in over a two-week interval
  - Then check bi-monthly
- Process indicator via survey:
  - Completion of 100% after implementation
  - Completion of 100% after implementation
  - Was repeat annually
- How often we can plan within specified time frame: will send weekly reminder until completed

Current Plan Team includes: Dr. Lindenberg, Dr. Green, Dr. Fisher

# Clarify the Problem / The Current State

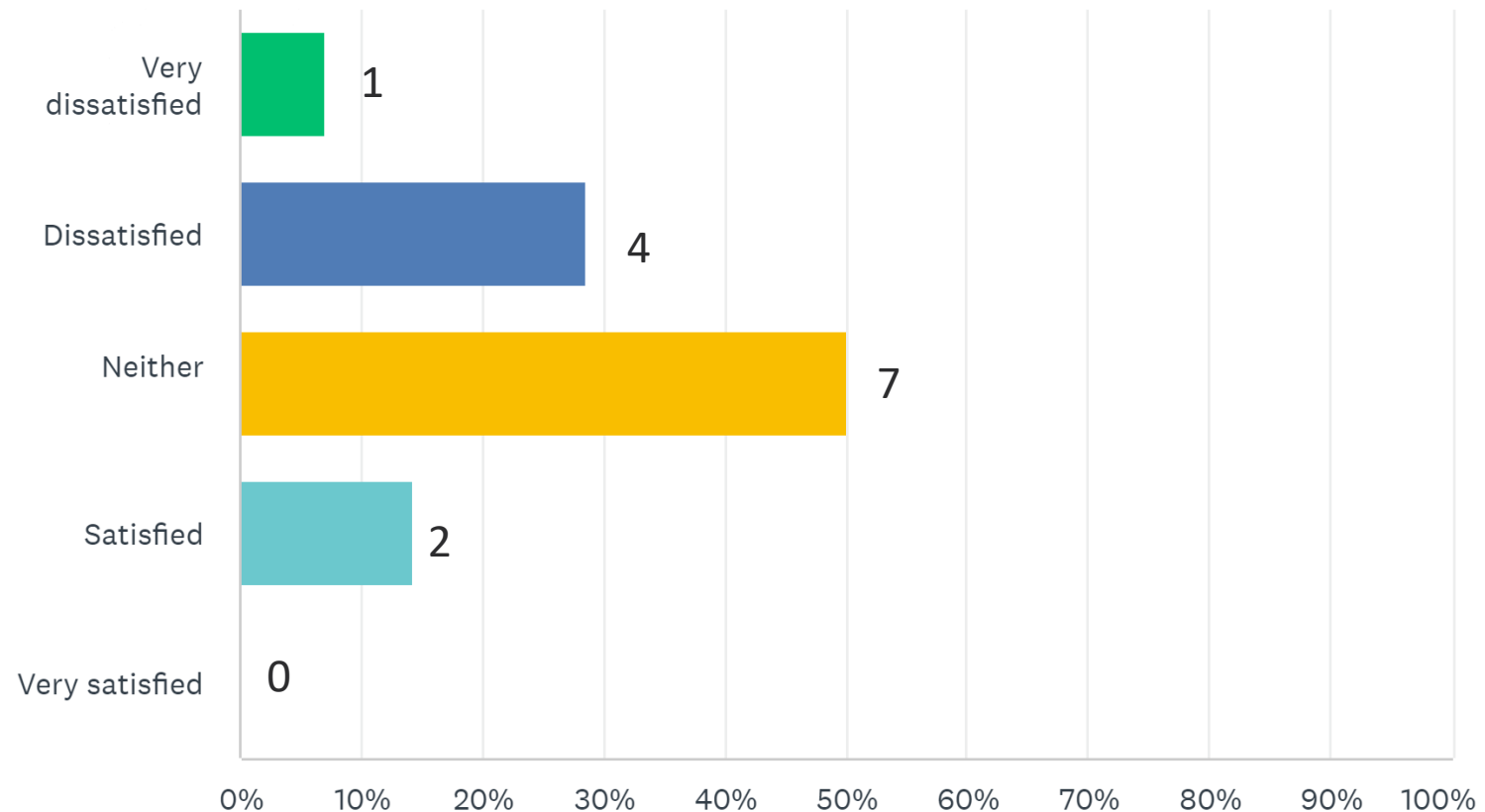
- **The Division of Pediatric Rehabilitation currently relies solely on hardcopies of fax requests. These requests include important time-sensitive information such as patient referrals, equipment prescriptions, therapy prescriptions, therapy updates, and letters of medical necessity. This causes multiple additional problems.**
  - It means providers and administrative staff must be physically present at Adele Hall
  - Not all providers come to Adele Hall daily, so this creates delays of completed documentation.
  - It increases risk of physical PHI exposure.
  - It creates procedural waste by requiring physical paper including paper, toner/ink, and use of office equipment.
  - If providers ask for the hard copies to be created into PDFs/electronic versions, it adds to administrative staff burden/tasks.

# Clarify the Problem / The Current State

- **Data and staff/provider survey show a perceived and actual delay in fax completion.**
  - 93% of admin and providers associated with fax completion believe there is a delay in completion of faxes that negatively impacts the patients.
  - Data from November and December 2022 show that out of 171 faxes analyzed
    - 100% were paper format
    - It took on average 6.75 days to complete (from fax received to fax outgoing)

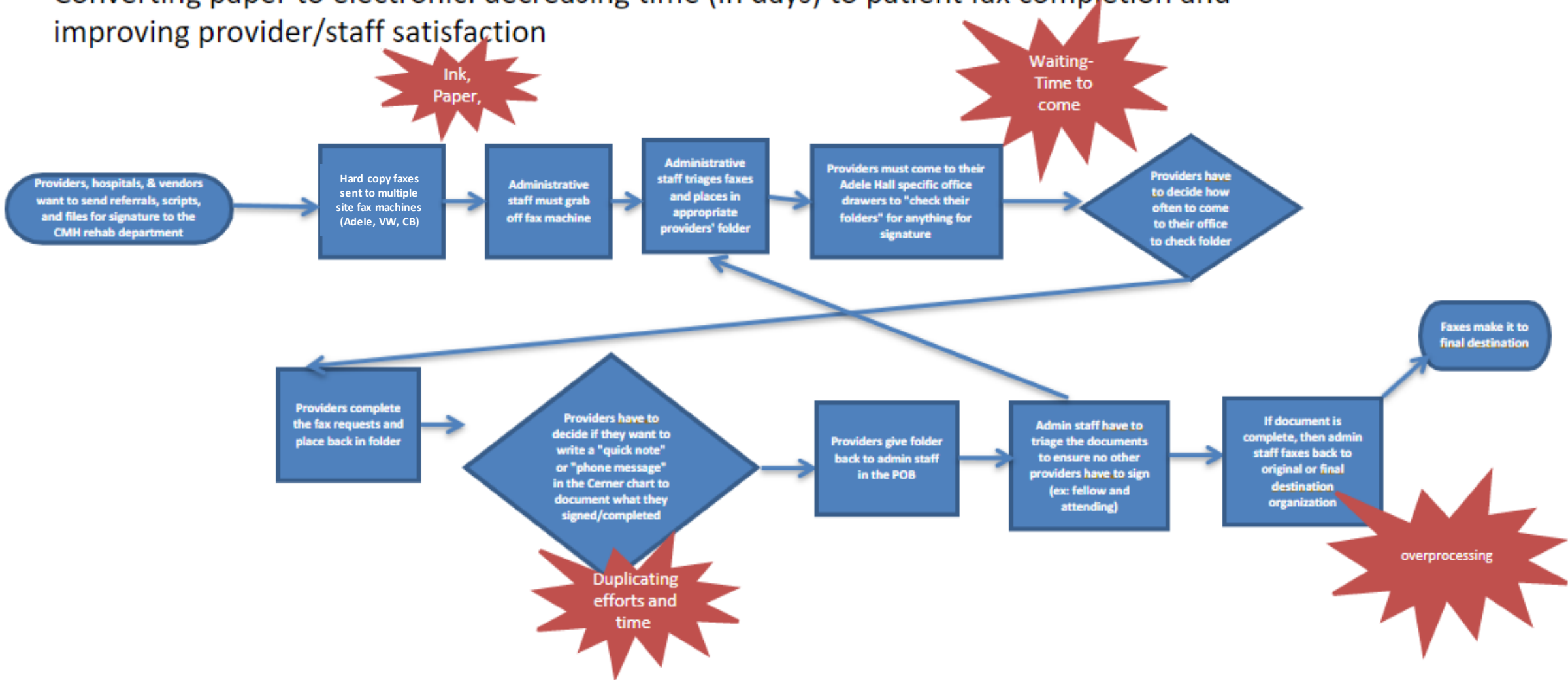
# Clarify the Problem / The Current State

- More providers and administrative staff are dissatisfied with the current system



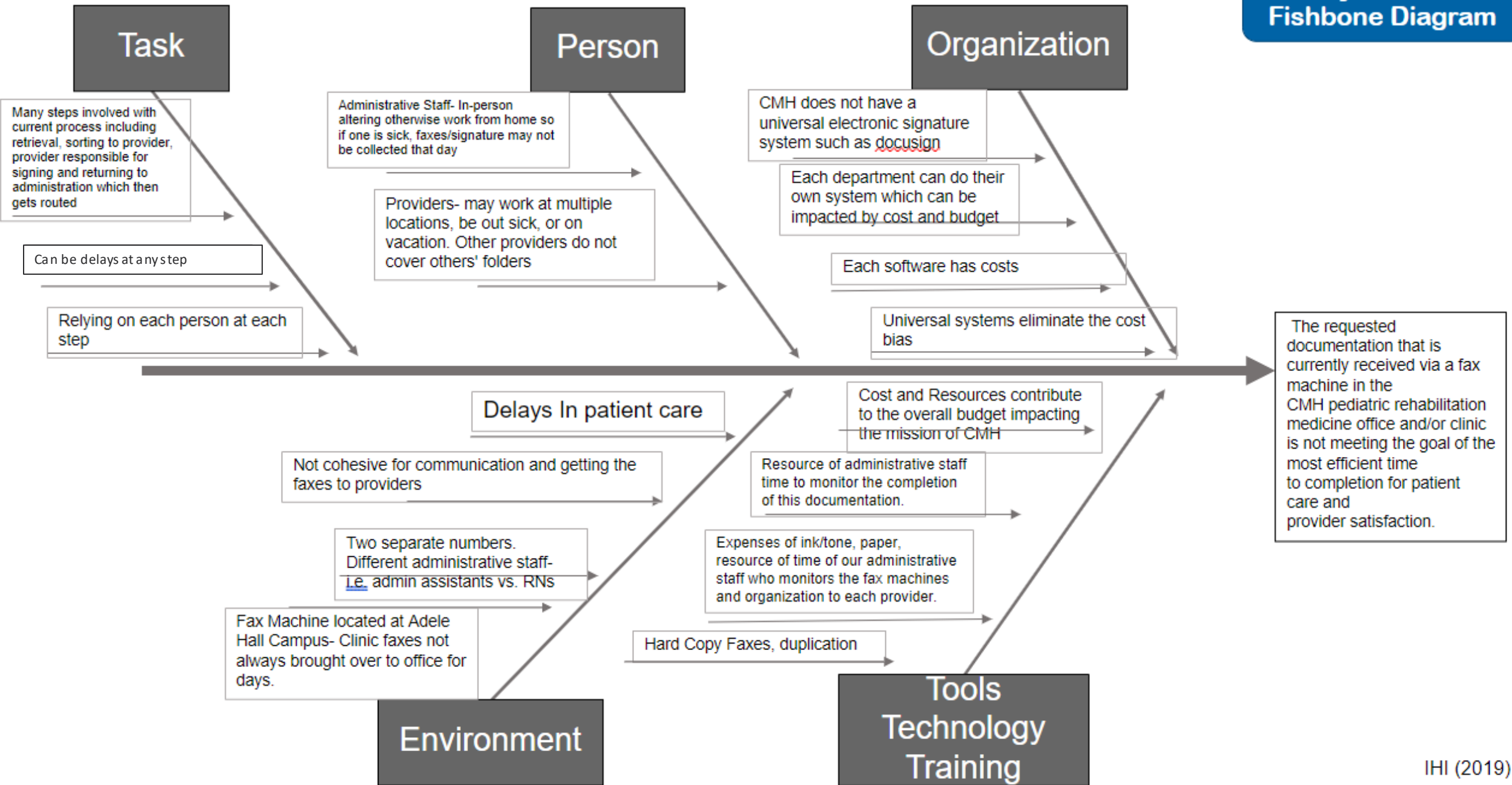
# Breakdown the Problem

Converting paper to electronic: decreasing time (in days) to patient fax completion and improving provider/staff satisfaction





**Identify Root Cause Fishbone Diagram**



# Thinking of a Target

- The target for this project would be to have a system that
  - reaches all providers at all locations
  - improves the speed for time to completion of faxes
  - improves patient care
  - increases patient satisfaction
  - decreases provider and administrative staff burden



# Set a Target

## PRIMARY TARGET

- **Statement 1** - The department of pediatric rehabilitation medicine aims to reduce time to complete signature requests from an average of 6.74 days to 5.16 days (15%) by March 31st, 2023.
  - **Outcome measure** - days for time to completion

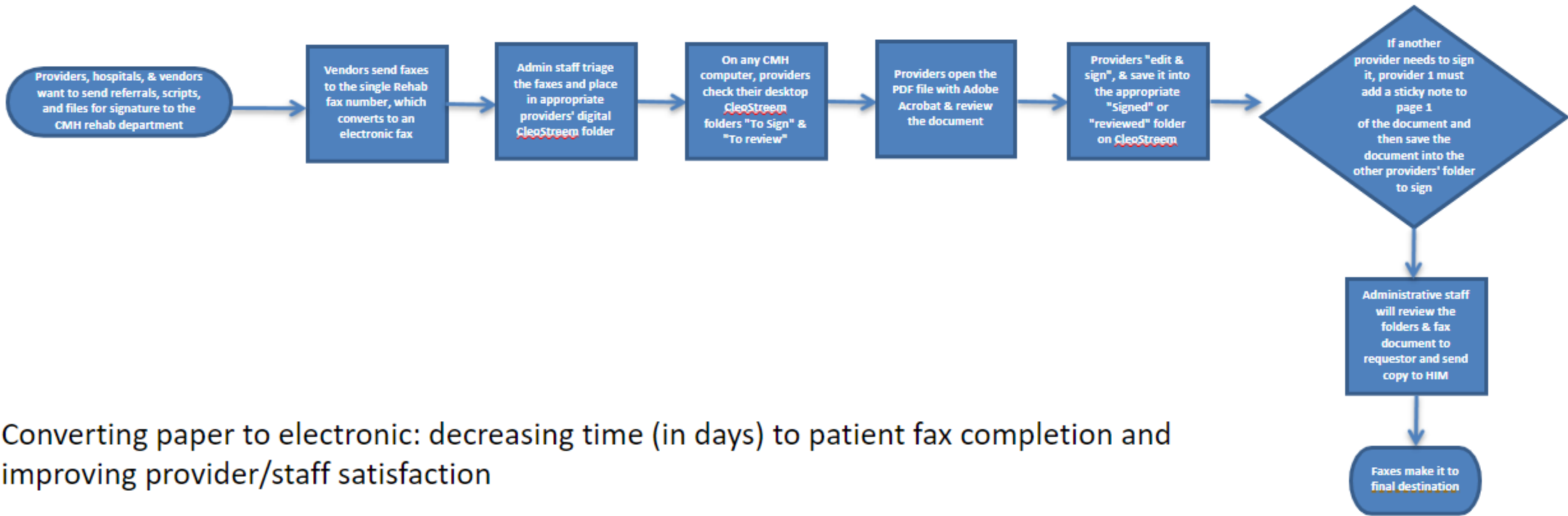
## SECONDARY TARGET

- **Statement 2** - The department of pediatric rehabilitation medicine aims to maintain provider and administrative staff satisfaction at baseline levels (avoid lowering) at completion date of March 31st, 2023.
  - **Outcome measure** - provider and admin staff satisfaction from satisfaction survey
- **Statement 3** - The department of pediatric rehabilitation medicine aims to reduce divisional hardcopy (paper) requests to the provider by 30% by March 31st, 2023.
  - **Outcome measure** - Success measure is the number of paper requests to each provider

# Developing Countermeasures: PDSA Worksheet

Countermeasure	PDSA Cycle	Root Cause Addressed	How to Measure	Actions	Reliability	Feasibility	Start Date	Who to Complete	Whom to Impact	Due Date
Electronic Delivery of documents- Electronic delivery will create a new "trail", improve time to completion to prevent delay in patient care and improve provider efficiency.	1	Location Provider CMH Administrative Staff	For one month, have providers document when they received and when they signed a document in a live document on w drive	Hard	Medium	Hard	3/20/2023	Providers	Patients Provider Administrative Staff	4/20/2023
One fax number for providers to office (not Adelle Hall Rehab Clinic) and one at College Blvd (if primary location)	1	Location Provider	Tally the number of faxes coming to clinic after providing one fax number. Posted next to fax machine	Medium	Low	Medium	03/20/2023	Administrative Staff	Patients provider Administrative Staff	04/20/2023
Direct communication with external vendors		External Organization	Continue spreadsheet documenting if document was received electronically on live document vs. Via fax	Easy	High	Hard		Provider Administrative Staff	Patients provider Administrative Staff	
Demonstrate cost efficient savings by calculating out cost of paper and toner		CMH Location	calculate out cost of paper and toner, asking admin staff for billing/financial statements/receipts	Medium	Medium	Hard		QI members	Department Hospital	

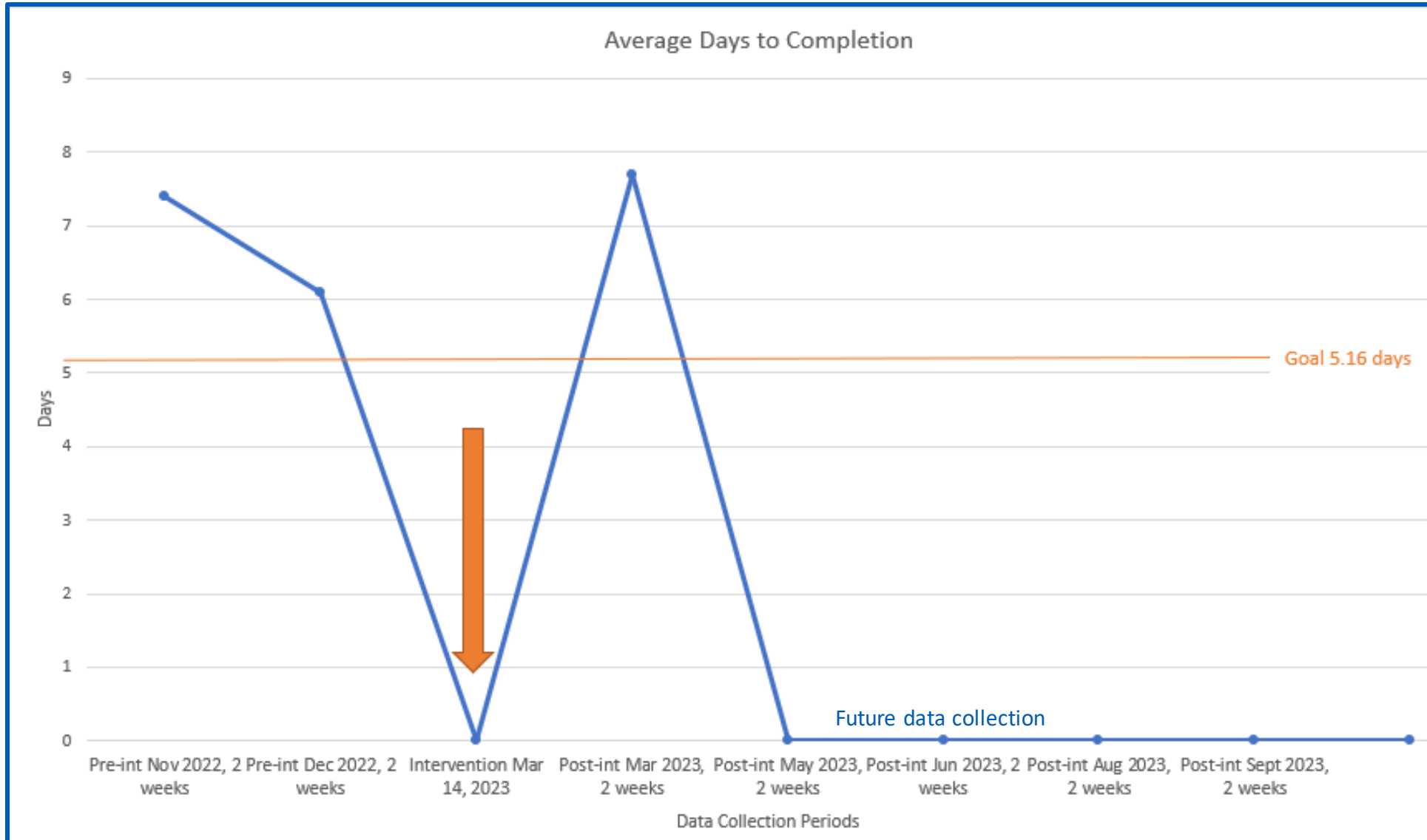
# Countermeasure: New Electronic Process



Converting paper to electronic: decreasing time (in days) to patient fax completion and improving provider/staff satisfaction

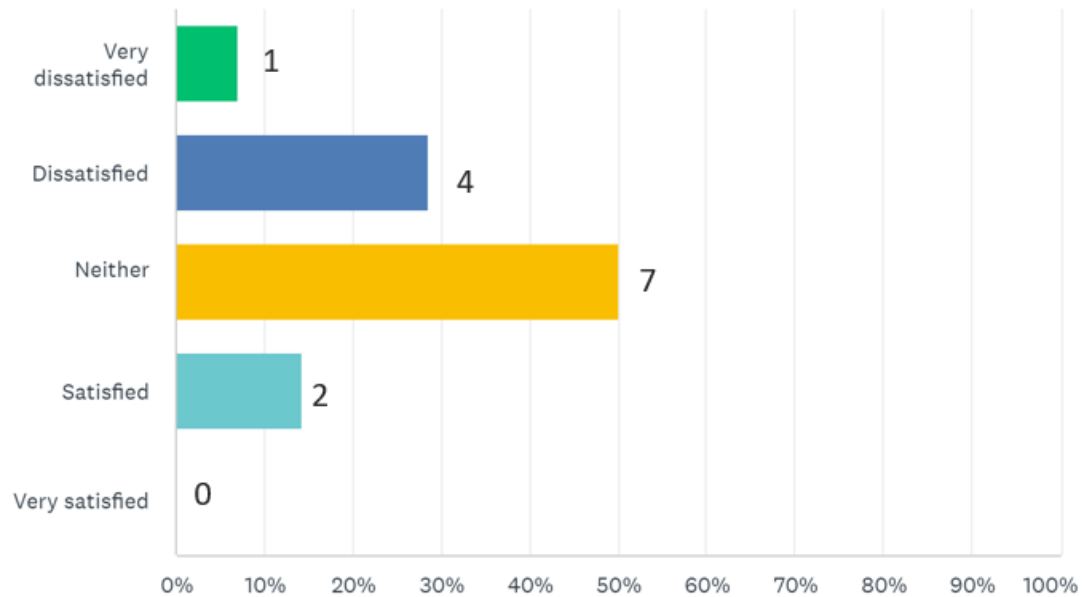
This new process flow map demonstrates the updated digital process via a combination of a single fax machine, Cleo Stream digital folders, and Adobe acrobat soft ware

# Primary Outcome: via Run Chart



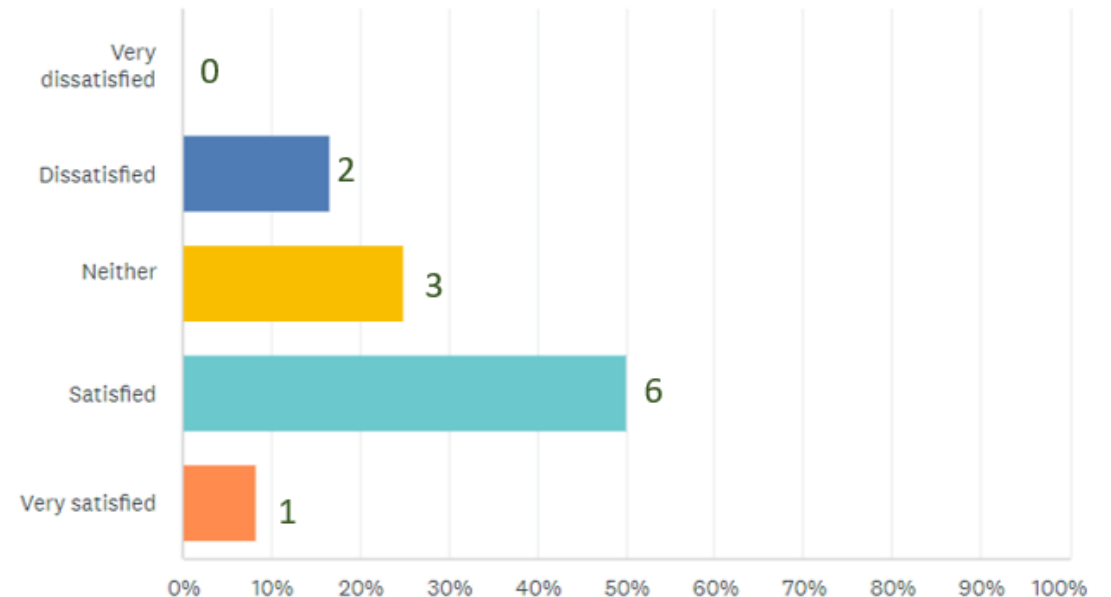
# Outcome 2: Provider Satisfaction

## Pre-intervention October 2022



Satisfaction  
Score = 2.7

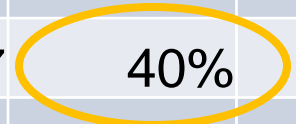
## Post-intervention April 2023



Satisfaction  
Score = 3.5

# Outcome 3: Reduction of Paper

	Average Days to Completion	Number of documents	Paper	Digital	Percent Paper	Precent Digital
Pre-int Nov 2022, 2 weeks	7.4	110	110	0	100%	0%
Pre-int Dec 2022, 2 weeks	6.09	61	61	0	100%	0%
Intervention Mar 14, 2023						
Post-int Mar 2023, 2 weeks	7.69	95	38	57	40%	60%
Post-int May 2023, 2 weeks						
Post-int Jun 2023, 2 weeks						
Post-int Aug 2023, 2 weeks						
Post-int Sept 2023, 2 weeks						





# Summary of Results Compared to Targets

## PRIMARY TARGET

- Statement 1** - The department of pediatric rehabilitation medicine aims to reduce time to complete signature requests from an average of 6.74 days to 5.16 days (15%) by March 31st, 2023.

## SECONDARY TARGET

- Statement 2** - The department of pediatric rehabilitation medicine aims to maintain provider and administrative staff satisfaction at baseline levels (avoid lowering) at completion date of March 31st, 2023.

- Statement 3** - The department of pediatric rehabilitation medicine aims to reduce divisional hardcopy (paper) requests to the provider by 30% by March 31st, 2023.

## PRIMARY TARGET

- After 2 weeks of the intervention, by March 31<sup>st</sup>, 2023, there was increased time to complete signature requests from an average of 6.74 days to 7.69 days.

## SECONDARY TARGET

- The intervention increased overall provider and administrative staff satisfaction, based on new satisfaction survey April 10, 2023.

- The department decreased paper faxes from 100% to 40% by March 31st, 2023.

# Future Opportunities



# Control Plan Chart

Measure	Spec. Limits / Requirements	Measurement Method	Collection Frequency	Who/What Measures	Where Recorded	Action when Outside Limits or Actions Not taken within timeframe
Time to completion of signature	Measured in days over two week intervals	Record time to completion from time fax was provided to the provider to the time it was returned by administrative assistant	Monthly for 3 months	Administrative Assistants	Excel spreadsheet with each provider and each incoming fax	Will discuss to ensure that we have 14 days worth of data collected in the same way that it was previously obtained
Provider and administrative support satisfaction	Qualitative measure	Standardized survey	60 days after implementation, 6 months after implementation	Providers, administrative support	Survey monkey	Will need to repeat the survey including weekly reminders for completion of the survey

# Control Plan for Future Opportunities

- Collect data for 2 weeks each month over the next 6 months
- Repeat provider satisfaction survey
  - in June (3 months after implementation, and before provider turnover)
  - In September (6 months after implementation)
- Provide feedback updates to admin, staff and providers at the monthly divisional meetings
  - Average time to completion per provider
  - % of paper vs. digital
  - Satisfaction survey results from June and September

