Using Technology to Improve Care Planning & Coordination

Areej Hassan, MD, MPH
Eric Fleegler, MD, MPH

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Faculty Disclosure Information

- *Dr. Hassan has no disclosures to report.*
- *Dr. Fleegler is a consultant to Veta Health.*

Learning Goals

- Assess current practice of care coordination with and without technology.
- Discuss ways to use technology to connect key players in care coordination.
  - Barriers
- Recognize system requirements for care coordination activities.
  - Understand types of coordination.
- Describe an action plan for integration of technology platforms.

Current State: Case Study

- A 14-year-old male, who is struggling in school with failing grades, was transferred to an adolescent clinic in the past year without access to prior medical records.
- His parent requests a refill of ADHD medications, which he has not taken in 6 months.
- The results of the paper “Conners” ADHD questionnaire indicate high levels of inattention and hyperactivity.

Current Coordination

- Write 1-month prescriptions for medications.
- Provide paper questionnaires for parents and teachers to complete.

Current Coordination

- Write 1-month prescriptions for medications.
  - Problem: Written prescriptions are limited to 1 month, cannot be sent electronically to a pharmacy, and are burdensome on the family, patient, and prescriber.
  - Problem: Physicians do not receive alerts about unfilled prescriptions.
- Provide paper questionnaires for parents and teachers to complete.
  - Problem: These result in poor response rates, especially from teachers.
  - Problem: It is difficult to track response to therapy.

Current Coordination: Tech-Enhanced

- Electronic medical records (EMRs) enable primary care physicians to enter notes (eg, urgent visit) to be seen by others in the clinic.
- Patient portals allow patients and parents to send messages to and receive messages from their physicians.

Current Coordination: Tech-Enhanced

- Electronic medical records (EMRs) enable primary care physicians to enter notes (eg, urgent visit) to be seen by others in the clinic.
  - Problem: This is only helpful if a patient receives other care (eg, emergency, mental health) within the same system; EMRs do not connect with other health care system EMRs.
- Patient portals allow patients and parents to send messages to and receive messages from their physicians.
  - Problem: Minimal penetration and usage of this technology because many physicians, patients, and families find it burdensome, physicians have additional responsibilities, and not all patients and families have access.
  - Problem: Physicians find it challenging when parents have access to sensitive information about their adolescents.

Other Complex Care Coordination Challenges

- Subspecialist communication
  - Who is managing a patient's specific needs, especially if care is provided across institutions?
- Adjunct therapy
  - How is information being shared with nonphysician clinicians, such as physical therapists, occupational therapists, nutritionists, or acupuncturists?
- Insurance-assigned care coordination
  - This is good, but insurance providers are not part of the hospital ecosystem, which can make assigning care coordination challenging.
- Non-health care partners
  - Community service partners, such as Big Brothers Big Sisters, DCF, and schools, cannot share information.

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Technology to Connect Key Players in Care Coordination

Minimum technology requirements

- Confidential
- HIPAA compliant (including the ability to communicate with physicians, nonphysician clinicians, agencies, and respondents)
- Secure
- Interoperability with current IT systems

Technology to Connect Key Players in Care Coordination

Goals

- Facilitate communication between providers within an institution (notifications within EMR) and across institutions (link across EMRs).
- Develop efficient messaging and response methods for the patient portal.
  - Needs to facilitate communication between patient/family and care team members.
    - Standardized, set intervals
    - Open-ended communication
    - Symptom monitoring/response to therapy in chronic disease

Technology to Connect Key Players in Care Coordination

Goals

- Provides communication to outside respondents, such as teachers, case managers.
  - Active collection of data from respondents
  - Easily viewable by care team members
  - School ability to view plans and coordinate with care team members
  - Data available as requested by other respondents (parents, teachers, etc.)
- Provides communication between pharmacy and provider.
  - Electronic Rx (when appropriate)
  - Information about Rx being filled and picked up

Technology to Connect Key Players in Care Coordination

- Adjunct therapy (physical therapy, occupational therapy, nutrition, acupuncture)
  - Share information to develop treatment plans.
- Care coordinators
  - Facilitate bidirectional communication about needs and provided services.
- Non-health care partners (community services, Big Brothers Big Sisters, DCF, schools)
  - Compare unidirectional vs. bidirectional.

Barriers to Technology Use

- Work flow efficiency (ease of implementation by the clinicians and administrative support staff)
- Compatibility between systems (important for the clinic, outside sites, and families)
- When possible, limit the number of technology-based systems.
- Need greater value add -- not just messaging systems but requires analytics that process and display data usefully (summary)
- Parents' and others' potential lack of access to new systems, ability to download apps, and to respond to reminders
- Responsibility/liability for information that arrives off-hours
- Caregivers' health literacy and language barriers

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System Requirements Checklist

- Usable for both patients and care team members
- Degree of customization
- Desired functionality
- Real-time notifications
- Secure communication
- Cost effective
- Integration capability
- External health system or care team member communication
- Efficient
- Updateable
- Multiple language capability

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ACTION PLAN

1. **Conduct an assessment of technology needs.**
2. **Establish the need for change.**
3. **Determine the goals and objectives with new technology.**
4. **Select and plan for a new system.**
5. **Implement new technology.**
6. **Evaluate the new system and obtain feedback.**

Ten key considerations for the successful implementation and adoption of large-scale health information technology

Kathrin M Cresswell,[1] David W Bates,[2,3] Aziz Sheikh[4]

Cresswell KM, *et al. J Am Med Inform Assoc* 2013;**20**:e9–e13. doi:10.1136/amiajnl-2013-001684

Step 1: Assessment

General assessment: "map" the current processes

- What is the current technology used in coordinated care?
- What gaps exist?
- What is the ideal approach?
- What works best in your institution/office/setting?

General assessment:

Ideal approach – current approach = defined need

Step 2: Establish the Need for Change

Identify and characterize the problem that will be addressed by adopting technology to improve coordinated care.

- What is the problem?
- Whom and what does it affect?
- What is the importance of the effects?
- Can technology address this problem?

Step 2: Establish the Need for Change

- Who are the (other) stakeholders?
- How can you build consensus that a technology change is necessary?
- What information do you need (to build a supporting argument or obtain buy-in)?
  - Existing proficiencies and perceived deficiencies
  - Current performance
  - Stakeholder preferences
  - Financial resources
  - Barriers
  - Institutional politics

Step 2: Establish the Need for Change

How will you obtain the information?

- Inventory of existing records
- Informal discussion
- Interviews
- Focus groups
- Surveys
- Observation
- Strategic planning sessions

Step 3: Goals and Objectives

- Goal = broad target
  - *“Our office will improve XXX.”*
- Objective: specific measurable outcome
  - *“By adopting new technology, medical providers will be able to*
    - *Communicate directly with patients via ….*
    - *Receive updates on emergency room visits or inpatient hospitalizations.*
    - *Discuss plan with pediatric medical subspecialists or pediatric surgical specialists.*

Step 4: Selecting and Planning for New System

- Commit adequate time and resources to consider options.
- Explore setups in other offices that have been successful.
- Network with potential suppliers.
- Determine whether the system meets the checklist of requirements (these may vary from setting to setting).
- Conduct trials of the new system comparing small group use vs all in and limited initial functionality vs multiple changes.
- Consider the costs – financial, research, and the effort to implement the system.

Step 5: Implementation

- Identify resources.
- Develop a training plan
- Anticipate barriers.
- Delineate responsibilities (training, operations, etc.).
- Conduct pilot testing.
  - Obtain feedback from all stakeholders.
- Respond quickly to initial problems.

Step 6: Evaluation and Feedback

- To determine if goals and objectives have been met
- To provide information for continuous improvement
- To assess outcomes
  - Clinical (patient outcomes)
  - Health care dollar outcomes
  - Care team member satisfaction, acceptability, etc.
  - Patient satisfaction, acceptability, etc.
- To maintain and increase support

Breakout – Small Groups

- Share information about the system currently used by your institution or office to coordinate care.
- Identify problems to be addressed.
- Determine what resources are available.
- Consider what additional resources are needed.

Report Back From Small Groups

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Current State: Case Study

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Challenge: Monitoring Children With ADHD

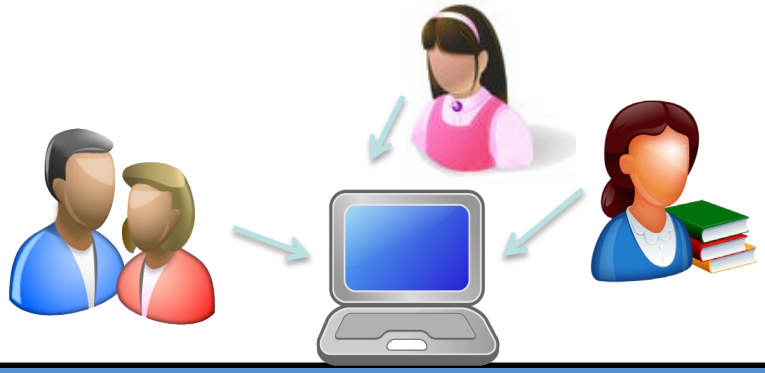
- Parent- and teacher-completed ADHD rating scales are needed to assess the patient response to treatment.

Parents: Early morning	Teachers: School day	Parents: Evening
Stimulant not in effect	Stimulant in effect	Stimulant worn off

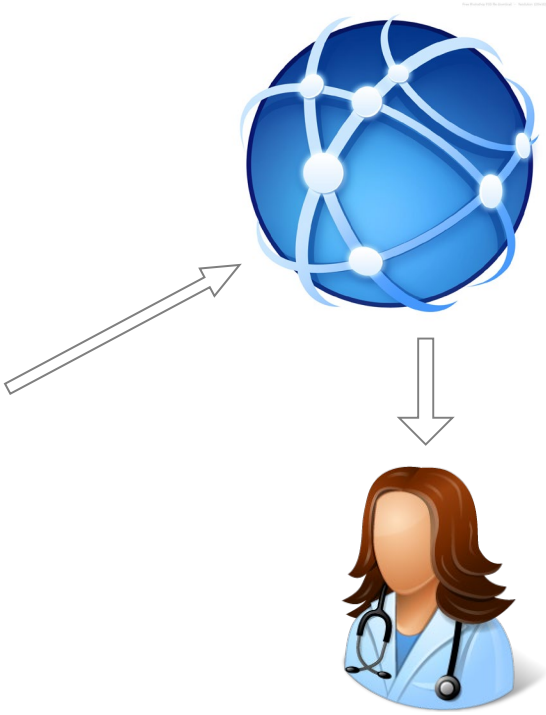
- A minimal number of rating scales are typically returned to the medical home.
  - Parent rating scales: ~20%-30%
  - Teacher rating scales: <5%
- Providers are “flying blind” with respect to medication decision-making.

Intervention

1. Email notifications are sent to <u>parents</u>, <u>patients</u>, and <u>teachers</u> to complete online surveys.



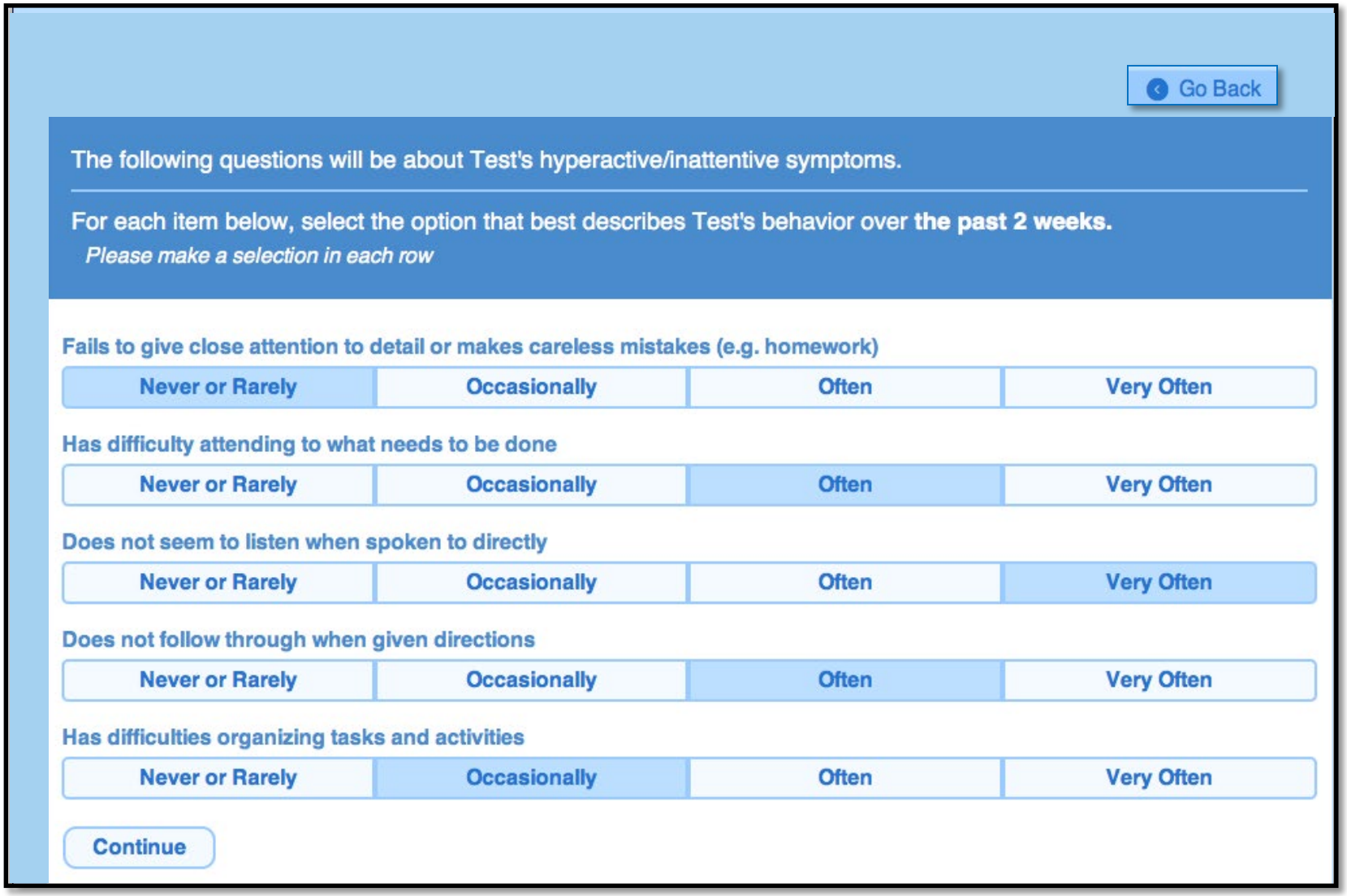
2. Scoring algorithms are automated.



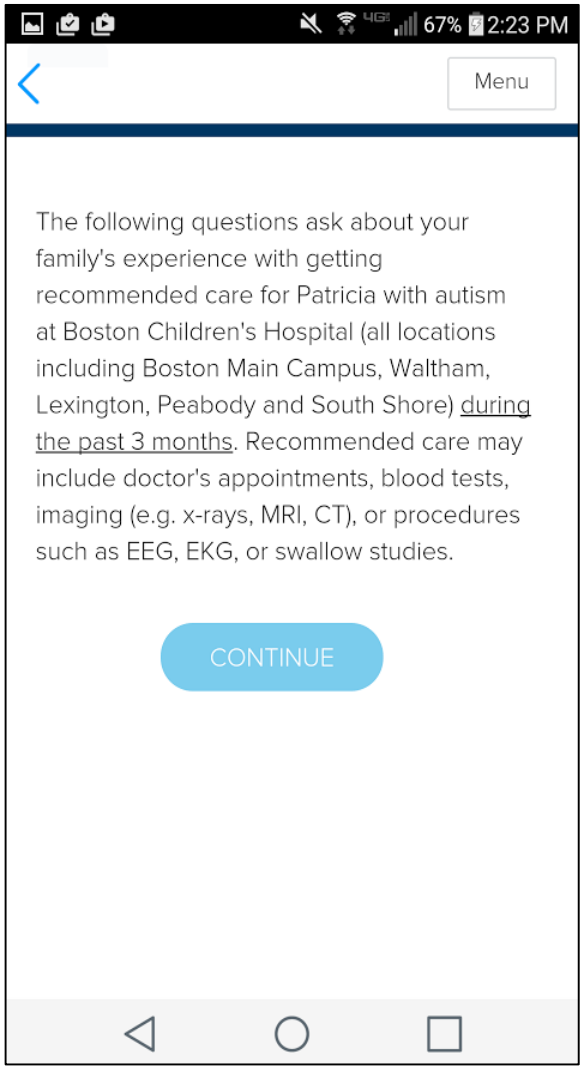
- Vanderbilt (ADHD rating)
- PedsQL (Quality of Life)
- Medication confirmation
- Side effects inventory

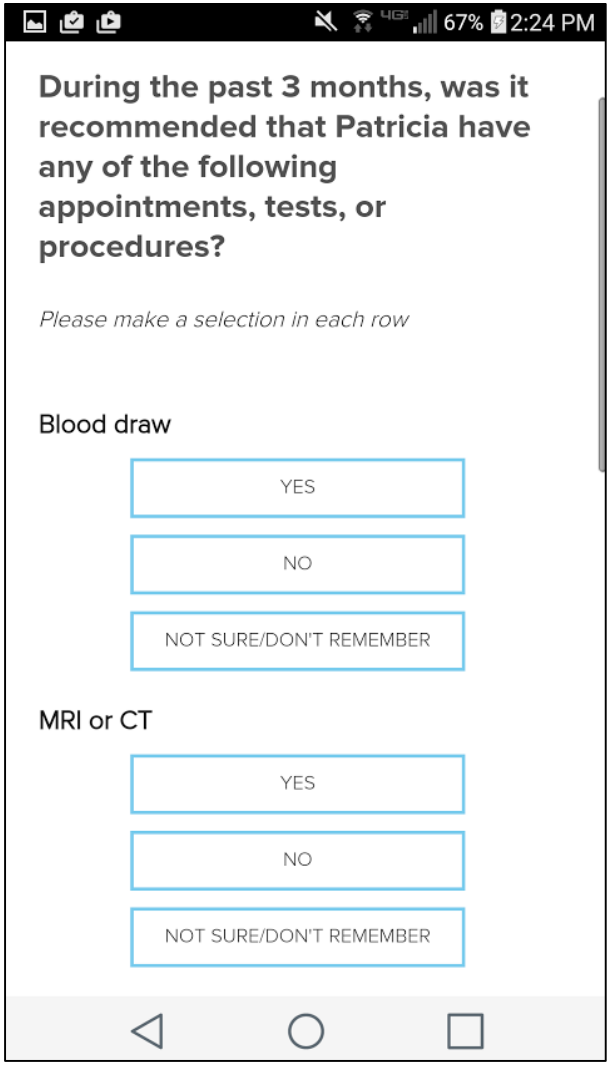
3. Email notifications are sent to clinicians with alerts.

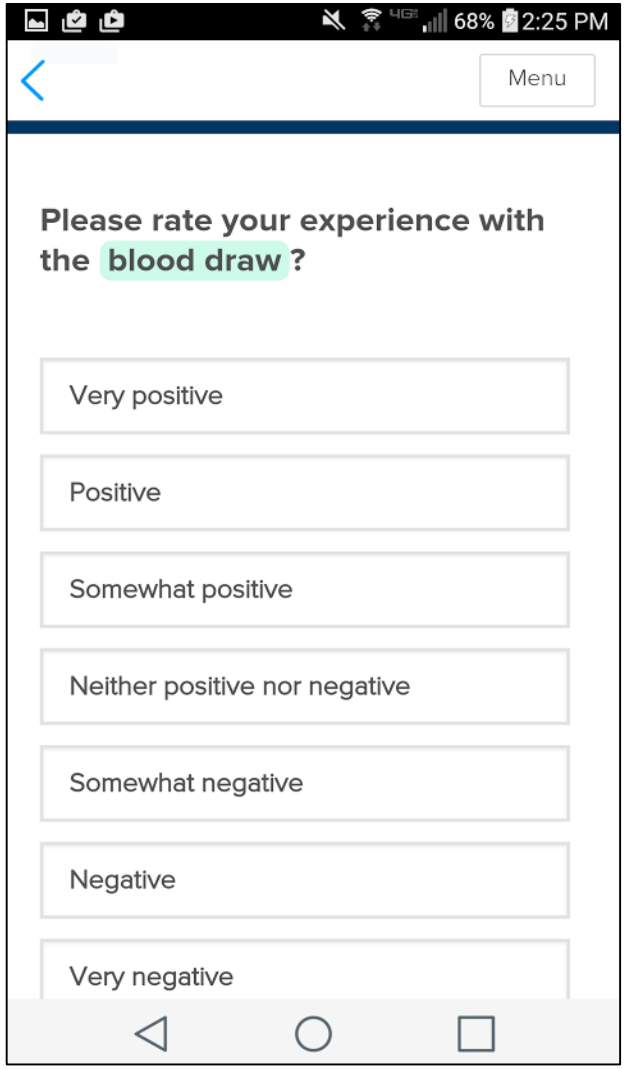
Responder Interface



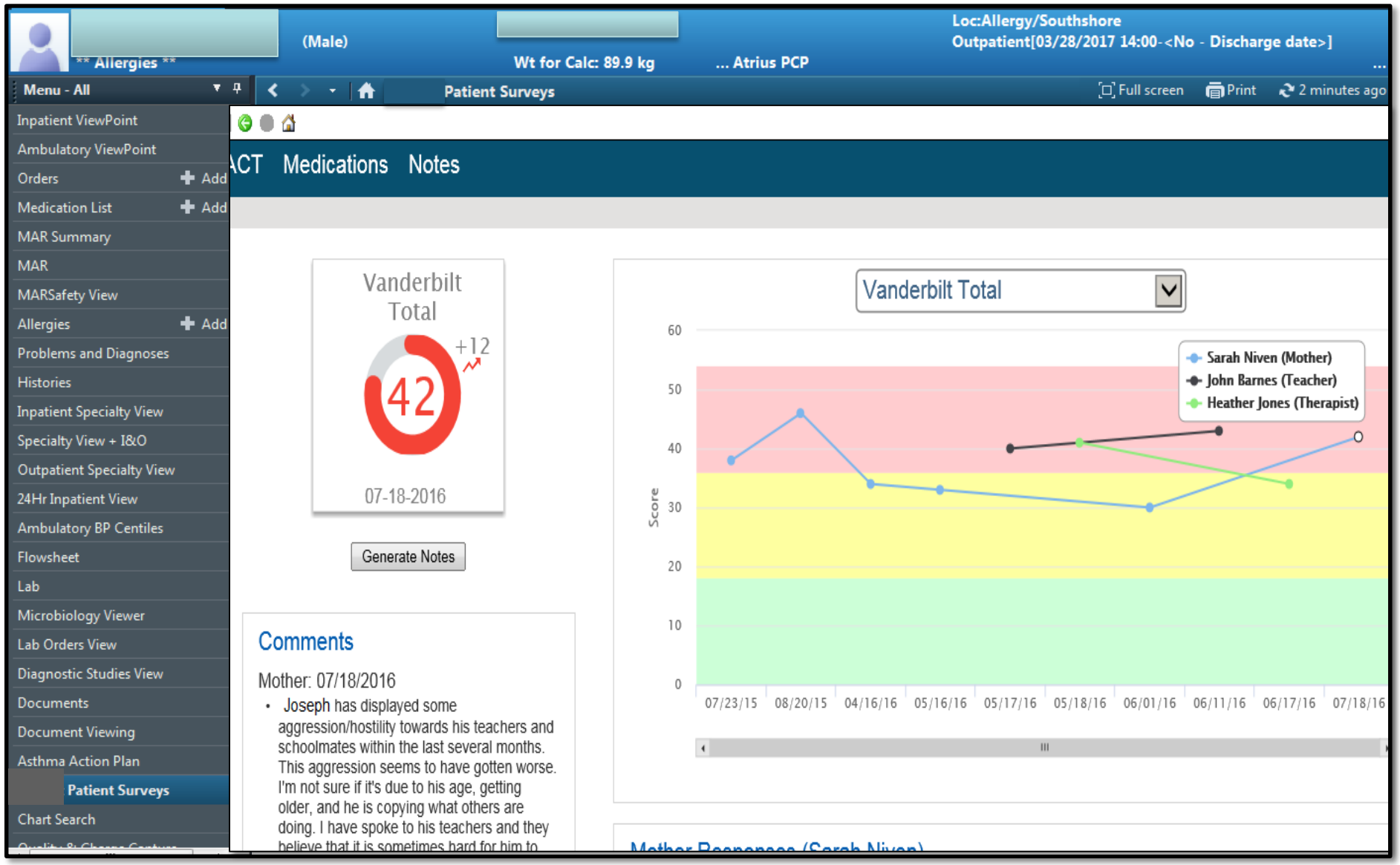
Mobile





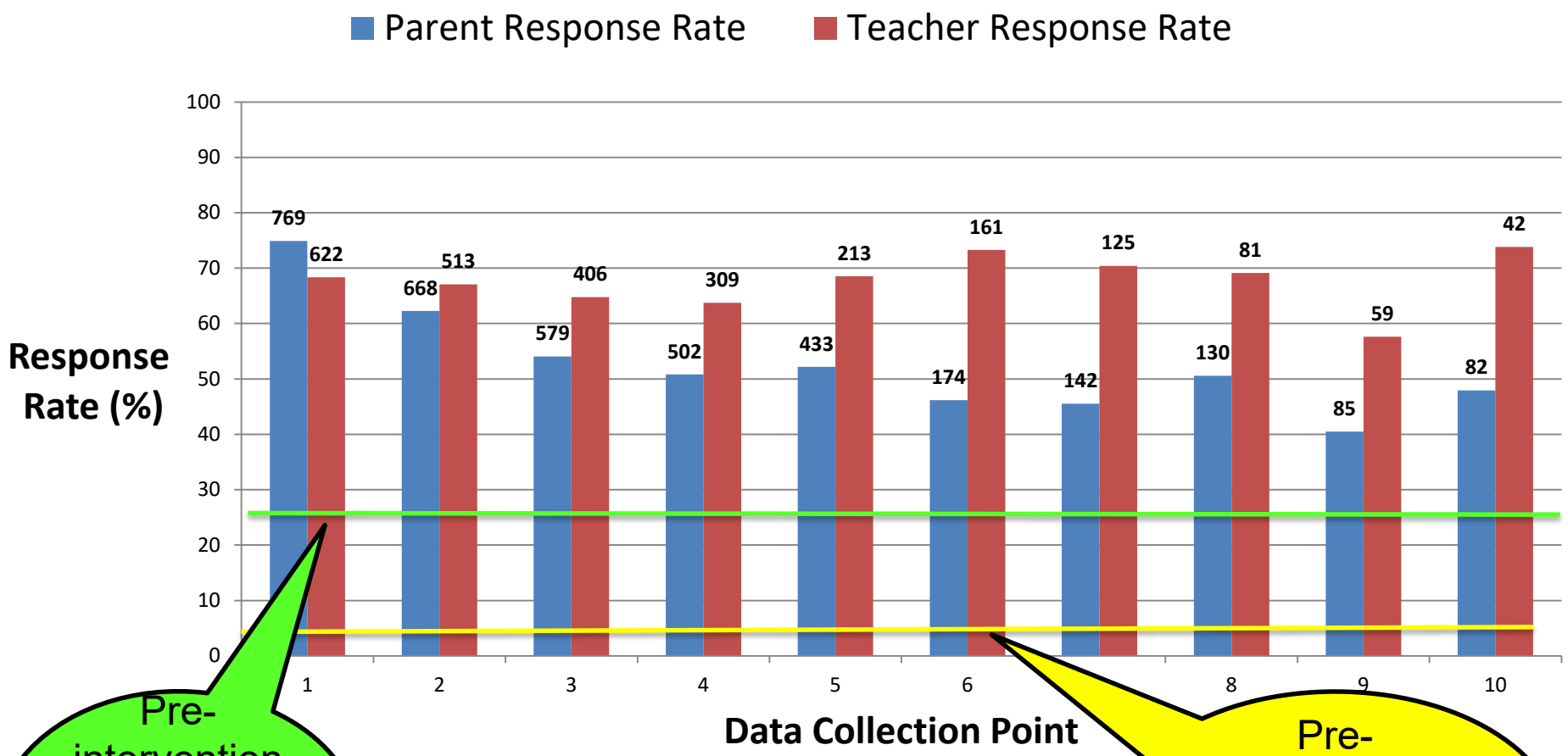


Provider Interface



Response Rates Over Time

Among those who have completed at least one survey request



Pre-intervention parent response rate 20%-30%

Pre-intervention teacher response rate <5%-10%

Discussion and Questions