MAXIMIZING PATIENT CARE WITH EFFICIENT VITAL SIGNS ACQUISITION

DEFINE

Problem Statement: Vital signs are the very beginning of every patient-caregiver interaction. Typical processes include multiple stations to capture base vital signs (height, weight, pulse, temperature and blood pressure); some stations are semi-public spaces. While the vital signs process has not changed significantly in 30 years, the integration of electronic medical records (EMR), new technologies and automated devices could have a significant impact on the overall efficiency of the process.

Project Aim: Midmark partnered with a research firm to examine potential workflow efficiencies during the acquisition of vital signs, as well as the interaction between patients and caregivers, in an effort to identify near- and long-term implications for efficiency.

Project Focus: The study included non-acute care facilities ranging from independent practices to integrated delivery networks (IDNS), sites with paper-based medical records, and sites transitioning to EMR or fully integrated with EMR. The facilities also included automated and manual acquisition of vital signs.

MEASURE/DATA

Data Collected:

- Workflow and sequence to acquire base vital signs including height, weight, pulse, temperature and blood pressure
- Time required to acquire base vital signs including height, weight, pulse, temperature and blood pressure
- Location of vital signs acquisition

667 patient interactions observed

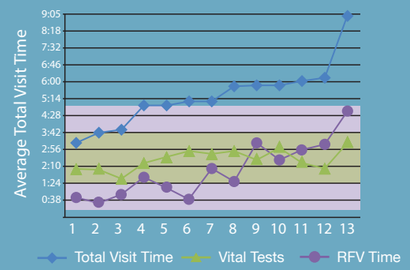
12 non-acute care facilities

277 total hours of observation

68 medical assistants observed

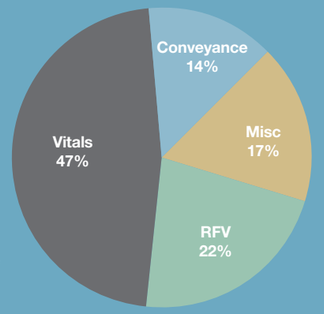
OBSERVATIONS

Care interaction was observed from the time the patient was called from the waiting room, through vital signs acquisition, to the time the patient was ready to see the physician. The average time was 5 minutes, 7 seconds.



Time Consistency Across Sites

Average Total Visit Time varied between 3:17 and 9:02. Most of the difference is attributed to Reason for Visit.

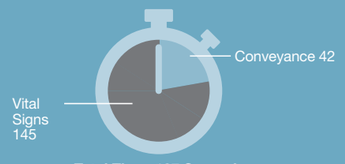


- EMR woes: EMR takes longer due to more extensive data entry (average difference of 1:47)
- Ergonomics for both patient and caregiver have a lot of room for improvement (access to patient and placement of equipment)
- Data transfer is not streamlined: all offices except one used paper to record vital signs even when on EMR, transferring from different sources and locations
- Accuracy: 'proper' blood pressure positioning and procedures were rarely followed and room setup does not help facilitate it

IMPROVEMENTS AND OUTCOMES

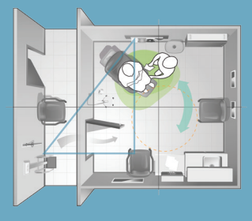
Traditional Vital Signs (Workflow 1)

In Hallway or Triage	In Exam Room
H W P T BP	H W **P T BP**



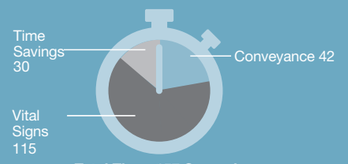
Total Time: 187 Seconds

The traditional workflow requires an average of 187 seconds from the time the patient is called through vitals acquisition.



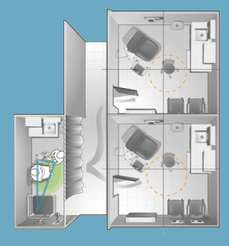
Triage Nook (Workflow 2)

In Hallway or Triage	In Exam Room
H W P T BP	H W P T BP



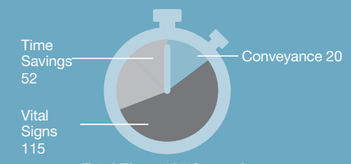
Total Time: 157 Seconds

The triage nook workflow, when compared with the traditional, saves 30 seconds by implementing automated vitals.



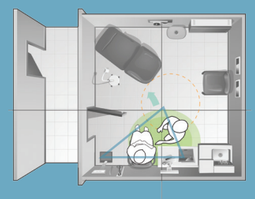
EMR Linear (Workflow 3)

In Hallway or Triage	In Exam Room
H W P T BP	**H W P T BP**



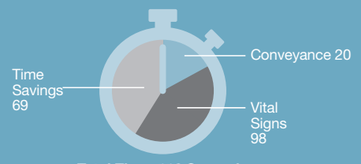
Total Time: 135 Seconds

The EMR linear workflow, when compared with the triage nook, saves 22 seconds in conveyance time by moving all vitals to the exam room.



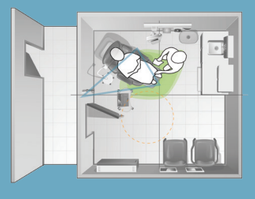
EMR Safe Patient Handling (Workflow 4)

In Hallway or Triage	In Exam Room
H W P T BP	**H W P T BP** (On Exam Table)



Total Time: 118 Seconds

The EMR safe patient handling workflow, when compared with the EMR linear, saves 17 seconds by taking the weight, temperature, pulse and blood pressure on the exam table.



Results of the Midmark study on vital signs acquisition indicated that taking a number of steps, including moving vital signs into the exam room and implementing automated vital signs, could reduce conveyance and acquisition time by as much as 36 percent. The Midmark Clinical Solutions vital signs workflow models developed based on the research findings provide a foundation for the integration of vital signs acquisition into a modern, efficient workflow. By rethinking vital signs workflows and incorporating elements of these models into their own settings, caregivers can streamline efforts without sacrificing accuracy or patient satisfaction.