**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

687 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.

**IMPROVEMENTS AND OUTCOMES**

<table>
<thead>
<tr>
<th>Workflow</th>
<th>Traditional Vital Signs</th>
<th>Triage Nook</th>
<th>EMR Linear</th>
<th>EMR Safe Patient Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Hallway or Triage</td>
<td>H W P T BP</td>
<td>H W P T BP</td>
<td>H W P T BP</td>
<td>H W P T BP</td>
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<tr>
<td>In Exam Room</td>
<td>H W P T BP</td>
<td>H W P T BP</td>
<td>H W P T BP</td>
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</table>

**Conveyance Times:**
- **Traditional Vital Signs:** 30
- **Triage Nook:** 52
- **EMR Linear:** 69
- **EMR Safe Patient Handling:** 69

**Savings Times:**
- **Traditional Vital Signs:** 17
- **Triage Nook:** 30
- **EMR Linear:** 17
- **EMR Safe Patient Handling:** 17

**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.

**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.**