Advancing patient safety with technology

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Truman by the numbers

<table>
<thead>
<tr>
<th>Inpatient facilities</th>
<th>Level I Trauma Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>600 beds</td>
</tr>
<tr>
<td></td>
<td>60 clinics</td>
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<tr>
<td></td>
<td>7 Community clinics</td>
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<tr>
<td></td>
<td>4K employees</td>
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<tr>
<td></td>
<td>625 medical staff</td>
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<tr>
<td>1,348 nursing staff</td>
<td>3,428 births</td>
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<tr>
<td>30K+ myTruHealth patient portal accounts</td>
<td>11,153 Surgical cases</td>
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<tr>
<td>86K+ ED visits</td>
<td>490K+ Outpatient visits</td>
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<tr>
<td>1,395 Trauma admissions</td>
<td>22,602 Acute admissions</td>
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As the regional SafetyNet organization we average >$100M in uncompensated care annually over the last 10 years.
1992: Cerner relationship

2002: EMR projects and services

2009: Laying the foundation

2015: Expanded partnership

2017: Enhancing the system

2019+: Vision for the future

- Cerner
- Lab, Rad, Rx
- Remote hosting
- AMS
- 2013 Grace Award
- Dual HIMSS Stage 7
- 2017 Triumph Award
- Dual HIMSS Stage 7
- 2011-2019 by Hospitals and Health Networks Magazine
- 2017 Triumph Award
- 2013 Grace Award
- Community Behavior Health and Revenue Cycle

- Provider orders
- eSignatures
- Provider captured images
- Patient observation
- Home based monitoring

- Uptime
- Results
- Falls, HAPUs
- FTEs
- Financial impact
- Interventions
- Meds
- Interventions
- Laying the foundation
- Expanded partnership
- Enhanced system
- Vision for the future
Advancing Patient Safety Through Technology

Inpatient Analytics Ambulatory Specimen Collection Pharmacy Nursing

Hello.
I’m here to assist you.

Truman Medical Centers’ new technology is all about enhancing patient care!

Our staff is using specialized smart phones to communicate about patient care in a more efficient and modern way. Utilizing the latest technology allows us to continue to deliver first-rate care for every patient, every time.
**1.** Increased Access Points (More On Ramps)

**2.** 2.4 to 5 GHz moves traffic through entry ramp faster

**3.** Increased Bandwidth (More Lanes)

**5 GHz enterprise-wide**

**115 miles of cable installed**

- **100 Mbps → 400 Mbps**
- **740 → 1,445 Access Points**
Where we started
Where we are today

Connect Messenger
- Shared directory
- Secure text messaging
- Clinical notifications & alerts

Clinical notifications & alerts
- SIRS/Sepsis
- Patient Observation
- APTT results/reminders
- Discharge Orders

Connect Voice
- Leverages Wi-Fi for VoIP calling

Other apps
- Calculator
- Alarm Clock timer and stop watch
- Zebra Battery Hotswap

Connect Nursing
- Chart review
- Orders/items review
- Vitals documentation
- Barcode med administration
- Specimen collection
- Discern Medication
- Acknowledgements and Requirements

Camera Capture
- Image capture & chart

Cerner Bridge
- Transfusion administration
- Human milk management
Physician mobility and communication

PowerChart Touch™
- Chart review
- Simple order entry
- Documentation
- Image capture

Instanote
- Documentation

Message Center
- Message & Reminder - compose and review

Camera Capture
- Image capture

Connect Messenger
- Secure text messaging
- Image capture
- Shared directory
- Clinical notifications & alerts

Anytime, anywhere
Engagement and training

- CNO mandate for required training
- Nursing super user participation in design and testing
- Classroom training for initial phases
- Subsequent capabilities handled at the elbow
- Open houses
How could we continue to leverage technology to enhance patient safety?
Opportunity to improve current
Cost of falls in health care facilities

30-35 percent of patients who fall sustain an injury\(^1\)

Cost for a fall with injury is about $14,056\(^1\)

1 [https://www.centerfortransforminghealthcare.org/improvement-topics/preventing-falls](https://www.centerfortransforminghealthcare.org/improvement-topics/preventing-falls)
Local problem

TMC implemented a virtual observation solution to allow a trained observation technician to monitor multiple patient rooms from a central monitoring station, reduce sitter labor costs and prevent falls and other adverse events.

Goals include:

• Maximize time of caregivers at the bedside
• Avoid occurrence of never events
• Satisfaction and retention of staff
• Leverage available technology
Integrating technology with alerts & notifications

**Connect Messenger**
- Shared directory
- Secure text messaging
- Clinical notifications & alerts

**Clinical notifications & alerts**
- Sepsis
- Patient Observation

**Connect Voice**
- Leverages Wi-Fi for VoIP calling

**Other apps**
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**Camera Capture**
- Image capture & chart

**Cerner Bridge**
- Transfusion administration
- Human milk management
Patient Observation

- Observation of up to 12 patients per monitoring station
- 14 Cameras available across two facilities
- Motion zones defined to meet the unique needs of each patient
- Provides another layer of care when patient is alone in the room
- Allows for more efficient capacity management and staffing level changes
Integrating technology with alerts & notifications
26,867
Budgeted Labor Hours
remained focused on clinical care rather than sitting

13,830
“Good Catches” Since go-live

311 unique patients monitored

Fall Rate Decreased* by more than 34%

Data source: Patient safety reports

“I've actually had family members express to me that they like another set of eyes (on patients).” - Yasmin, RN

*without adding nursing staff to headcount (through May 2019)
CareAware Connect / Patient Observer Adoption
Adoption metrics reflecting usage across a 30 day period

- 31,183 calls made
- 11,942 alerts sent
- 34,447 texts sent
- 53% of meds administered via mobile device
CAREWARE CONNECT ADOPTION

Adoption metrics reflecting usage across a 30 day period

- 457% increase in initial communication between physicians and providers
- 49 hours saved after implementing camera capture
- 32% reduction in steps
- 80% fewer devices

457% increase in initial communication between physicians and providers
49 hours saved after implementing camera capture
32% reduction in steps
80% fewer devices
Where are we going?

- Infusion Suite Management
- Pump Association
- Auto-pump Programming
- Quick Charting
- Pain Intake and Output
- Care Team
  - Displays patient care team for easier communication
- Capacity Management
- EVS and Transportation
- Increasing Throughput
- Phlebotomy Specimen Collection
- Single Sign-On
Key learnings

• Big Bang is the way to go
  • ALL clinicians
• Use the data to influence behavior & drive adoption
• Strong leadership engagement is critical
• Required training is vital
• At the elbow support was beneficial for physician engagement
• Super Users are key to adoption and expanding capabilities as they come available
Transition to the Cloud
Cloud transition at TMC

Available **Today**
- CareAware Connect Messenger
- Bedside MDI
- Lab MDI
- VitalsLink
- CareAware Connect
- Event Management
- Remote Device Connectivity
- Bridge: BabyMatch, Breast Milk Mgmt, Specimen Collection, Transfusion Administration

**Blue** = live

**Green** = planned

<table>
<thead>
<tr>
<th>2019 Plan</th>
<th>Beyond 2019</th>
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<tbody>
<tr>
<td>Event Processing</td>
<td>FetaLink</td>
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<tr>
<td>WaveForm Management</td>
<td>New Innovations</td>
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<tr>
<td>Enhanced Dispensing</td>
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<tr>
<td>RoomLink</td>
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<td>Tracking</td>
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<td>Patient Flow</td>
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<td>CareView</td>
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<td>Assignment Manager</td>
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Project plan key dates/tasks

- **Project kick-off**
  - Week of 9/17/18

- TRUM_MO Cloud Environment Development
  - 9/12/2018

- Domain setup and configuration/solution onboarding
  - 10/1/2018

- MySQL Copy/CareAware RBS
  - Week of 10/29/18

- Testing and Issue Resolution
  - 11/5/2018

- Go/No Go Decision Point (go given for 9/26)
  - 9/26/2019

- Go live at 2:00 am
  - 10/1/2018
Key considerations

• Data Migration:
  • Had to determine the best methods to migrate CareAware Connect
  • StaffLink (now Cerner Care Team Assignments)
  • Reporting
  • Event Management data over to the cloud

• Determine timeline based upon cloud appliance hardware
  • Switched from CHO hardware to RHO hardware part way through the project

• Migrations will require a longer timeline in order to allow for technical considerations and additional testing

• Non-PROD (Sandbox) environments are Millennium domain specific, which will require more in-depth planning for future projects and domain strategy.
Benefits of cloud

• Streamline getting the latest code out to the system

• Improved monitoring and response time on systemic issues

• Ability to manage devices remotely

• Platform for new functionality
“We try to **create the best possible environment** for our patients and caregivers. Reallocating additional PCTs from their primary jobs to one-on-one patient observation underutilized their skills and shortchanged our care teams. We needed a **more predictable, efficient way to keep our patients safe**”

Amy Peters, RN, MBA  
Chief Nursing Officer  
Truman Medical Centers

“I have been amazed to see our most technologically challenged nurses **embrace the phones** – It’s a win!”

Brigid Toyne-Barfoot, RN, MSN  
Director of Med/Surg  
Truman Medical Centers

“It’s been **easier** for people to contact me, while I’m in another room. It also allows me to **get a heads up** before things are taking place.”

Amardip Sienkiewicz, RN  
Telemetry  
Truman Medical Centers