Network Operations Command Center
(NOCC)

1050 Forrer Blvd
Dayton, OH 45420

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ketteringhealth.org
Network Operations Command Center

An introduction to

• History and background
• Operations
• Inter-operability
• Resources

In preparation for
• GO-LIVE at Kettering: June 2019

NOCC
x25900
Innovation for the Future

Catalysts for Change

• Growth
  – ↑ Access Points (ED’s, Community Healthcare Destinations, KPN)

• Current Capacity Challenges
  – Tertiary Facilities Census consistently at capacity
Catalyst for Change

Closure of Good Samaritan Hospital
400 bed, urban hospital serving NW Dayton
Opportunities

Opportunity to Maximize Revenue/Resources
Improve use of Kettering Mobile Care resources
↓ LOS, LWOT’s, Diversion, Leakage
NOCC: Best Practice Command Centers

- Situation Awareness
- Easy Access to Information
- Efficient Space
- Software Solutions
TeleTracking Software Solution

https://youtu.be/K5BmPktOX1Y
Strategic Planning

Administrative visits to Carilion Clinic, Sharp Health, Ohio Health, Cleveland Clinic
NOCC Leadership Trip to Carilion Clinic

- NOCC RN Team Leaders
  - Melissa, Nik, and Laura
- Mobile Care Communication Manager
  - Addison Frei
- NOCC Director and Manager
  - Jodie Cremeans
  - Nick Squillace
- NOCC Project Manager
  - Sonya Lemmerbrock
Strategic Planning

In-Depth Discovery and Design phases including all KHN hospitals, KHN Transfer Call Center, MedFlight and Kettering Mobile Care-completed by end of 2018
TeleTracking and KHN NOCC leaders do Hospital Observations during Soin’s Discovery Phase
Discovery and Design Sessions – On the Right the RTLS Engineers are Looking at Potential Patient Exits
Hospital Observations – TeleTracking and NOCC Leadership
Strategic Planning

• Creation of Network Capacity Management and Patient Flow Council as well as campus based councils for decision making and transparency across the enterprise

• Regular updates to Executive Finance Group, Network Leadership Group, Nursing Executive Council, and Med Exec Council
Situational Awareness:

• Centralizing Key Teams - TCC Nurses, Mobile Care Dispatch, Patient Flow Specialists (bed placement)
• Medical Director
• NOCC Team Leaders
Making all the pieces fit

Centralized IS components
- Command Center all on same phone software
- Status Indicator Lights
- TeleTracking
- EPIC

Redundancy to ensure operations seamlessly (UPS, Generator)
Situational Awareness: 200 monitors
Medical Director, Dr. Pook
TeleTracking Project Kick-off
Defense Electronics Supply Center

1050 Forrer Blvd

Gentile Air Force Base
Named for WWII flying ace
Major John S. Gentile of Piqua

Closed by Defense
Department in 1993
10 year clean-up
Gifted to City of Kettering
Construction
Weekly Construction Meetings at Site

At this meeting, we taped off the space and placed cardboard cut-outs the size of desks and TV’s to experiment with space.
More Construction

- David Nelson: Led CIP
- Kristi Tolliver: Engineer
- Nathan Verrill: Construction Fellow
- Brumbaugh Construction
- Heapy Engineering
- Ohio Valley Engineering
- Saturn Electric
One Call

NOCC
x25900

Call for ALL transfers
Algorithm Building and TeleTracking Testing
Patient centered algorithms

Vertebral Column Injuries- T/L spine

- Fall from standing or less
  - X-ray
  -_low_ IMPACT FORCE

- MVC, daredevil sports, fall from height, penetrating trauma, motorcycle crash, ped vs. motorized vehicle, other
  - HIGH
  - ATLS CT

- Penetrating trauma
  - MVC, daredevil sports, fall from height, motorized vehicle, other
  - HIGH
  - CT
Patient movement algorithms

Transport Mode

- ALS paramedic
- MICU Paramedic
- CC RN
- EMT

Patient characteristics

- Cardiac monitoring
- IV fluids
- IV meds
- NG to suction
- Blood in process
- Intra-aortic balloon pump
- LVAD
- Art line
- SWAN
- Ekos catheter
- Sheaths
- Chest tube to suction

Vent status

- Long term trach
- Assist control
- Trach and intubated patients
- AC, SIMV, CPAP, BiPAP

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Family Night at the NOCC
Finally Moved In!!

Operations Begin – January 22nd
Placing our first patient in bed in Teletracking!
NOCC Fun Facts

- 56,000 Feet of Cabling on the Command Center Floor
- 36 Floor Boxes (Data/Power Ports)
- Twenty, 86” Monitors on the Display Wall
- 40 Workstations
- All Network Bed Placement is Performed Here
- 24/7 Operations
- Internal Transportation Dispatching/Monitoring
- Internal EVS Dispatching
- Real Time System Capacity Management
Transparent movement
Tools

- IPOD
- RFID tracker for discharge
- Monitoring: app or lounge
  - From home or office
  - To discharge
ED Hold Hour Trend – TT Facilities
# IP/Obs Growth – TT Facilities

## Roll Up of Go-Live Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>2018 (Feb-Apr)</th>
<th>2019 (Feb-Apr)</th>
<th>Change</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7,547</td>
<td>8,124</td>
<td>609</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Grandview</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018 (Mar/Apr)</td>
<td>2,161</td>
<td>2,370</td>
<td>209</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Southview</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018 (Mar/Apr)</td>
<td>1,493</td>
<td>1,361</td>
<td>(132)</td>
<td>-9%</td>
</tr>
<tr>
<td><strong>Soin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018 (Feb-Apr)</td>
<td>3,065</td>
<td>3,405</td>
<td>340</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Greene</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018 (Feb-Apr)</td>
<td>928</td>
<td>988</td>
<td>60</td>
<td>6%</td>
</tr>
</tbody>
</table>

*Source: Data Warehouse*
Go-lives

Greene/Soin
- EVS time saved >60min
- Decreased CC bed time
Unit monitors

Grandview/Southview
- early morning ID of potential discharges
- time to inpatient bed 15 minutes

Sycamore/Fort Hamilton
- smoothest start

Kettering
- June 2019
Structure of Operations

- Network Operations Command Center
- Transfers In/Out of Network
- Environmental Services Dispatch
- Mobile Care MedFlight
- Bed Placement
- Case Management Social Workers

Excellence in Patient Care
Benefits of a Centralized Team

Direct Income
- Increase efficiency of access
  - One Call System, Faster Admission
- Increase out-of-network admissions
  - Create a “path of least resistance” for their admissions
- Decrease out-of-network leakage
- Better utilization of beds network-wide to allow ALL campuses to be full
- Expanded nursing home business with one call system & transport initiatives
- Decreased hospital reroute hours & ED hold hours

Intangible Benefits
- Increased Physician Satisfaction
- Increased Patient Satisfaction
- Creation of virtual beds through improved throughput efficiencies
- Creation of best practice, scalable processes and procedures for throughput and access.
- Variation management in nursing practice and workload management
- Standardized nursing units
Patient Movement
Centralized Patient Flow Management

Goal:
• To implement a center for patient flow management, with a patient centered approach and real-time visibility to Kettering Health Network bed capacity.

Benefits:
• Reduce lost transfers by using auto acceptance and auto transport launch
• Improve access to care
• Optimize available capacity
• Reduce ED and PACU holds
• Improved customer satisfaction
Implementation of Best Practices

Keys to Success:
• Right patient – Right bed – Right Place – First time
  • Use of ready to move
  • Use of attributes
  • Use of bed priorities
  • Use of pending discharges functionality
Concepts In the Science of Flow

Concept 1:
- When utilization is high in a hospital (Near capacity), planning for the timely transitioning of a few appropriate patients can have a substantial effect on delays and free up needed space at the right time.

Concept 2:
- Successfully discharging at least 25% of your patients by 11AM each day will alleviate the late afternoon crunch.
Mobile Care / Buckeye Key Points

- Centralized Transportation Dispatch
- Auto Launch of Air and Ground Transports
- Centralized Precertification of Non-emergent Transports
- Real-time GPS Tracking of Vehicles
- 54 Vehicles in the Mobile Care/Buckeye Fleet
- 185 Team Members
- 2.1 Million Miles Driven in a Year
- Standardization of Levels of Service
  - Helicopter
  - MICU
  - ALS
  - BLS
Kettering Mobile Care Update

- **June 2016**: New and fully staffed - 5x24 hour shifts
- **April 2019** Growth
- Running 12-14 trucks
- Understaffed
  - Regional/State/National Shortage
  - Providers are moving to the public sector or out of industry
- NO 24-hour shifts – Safety and Retention
- Paramedic holes in schedule
Graphs show that the floor trips are scheduled for late afternoon/evening and then the ED's start to increase transfers/discharges. This causes crews to be tied up on floor discharges when the ED's start the transfers. Floor runs are then delayed to allow for ED trips. Attempts are being made to move the floor discharges earlier in the day to allow for more units to be available during evening boluses.
Kettering Mobile Care

Where does that leave us now?

– Extended ETA’s
– High Level of frustration
– Difficult communication
– Damaged relationship
– Compromised patient experience
How Can You Help

• Secondary EMS Providers
  – Allow the NOCC to contact secondary providers
  – Tell Mobile Care “no availability” then give campus an ETA

• Average On Scene Times
  – ED – 0:20 *Thank You!*  
  – Floor – 0:45
KHN Preparedness/Event Management

**Hazardous Materials**
- Training
- PPE
  - Highly Infectious Disease
  - Chemical, Biological, Nuclear, Radiological (CBRN)/WMD

**Radio Communications**
- ED-EMS
- Disaster

**Event Medicine**
- Equipment
  - Medical
  - ATV/UTVs Patient Transport/Access
Routine and directed review of transfer opportunities

• Timeliness of transport
• Patient safety
• Physician capacity
• Nursing/staff capacity
• Facility capability
Case review: 80 y.o. female

Midshaft femur fracture
vs.
Pulmonary Hypertension
Interested in more?

- Tour
- Solutions
- Chart review

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