



U<sup>OF</sup> Hospital

*Data Does It! Driving Team Growth  
and Efficiency with a Multidisciplinary  
Approach*

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**U<sup>OF</sup>L** Hospital

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Trauma Registry Manager  
Trauma Institute

# Learning Objectives

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- Identify how data currently being collected can be used to identify potential areas of growth.
- Discuss two ways in which multidisciplinary data collection can strengthen the trauma registry.
- Discuss the process of validating program expansion and how it can lead to further growth opportunities.
- Examine how multidisciplinary team growth expands the quality and breadth of data collection

# Disclosure Statement

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- No disclosures

# Successful Completion

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- To successfully complete this course, participants must attend the entire event and complete/submit the evaluation at the end of the session.
- Society of Trauma Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

# Background

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- University of Louisville Hospital
  - Level 1 academic trauma center ACS designation
  - ~3600 trauma admissions annually
  - Licensed for ~400 beds
  - 30% ISS >15



# Trauma Team Today

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## Trauma Institute

Trauma Medical Director  
Trauma Program Manager  
Trauma Surgery Physician Team  
4 APRN Clinical Providers  
1 Performance Improvement RN  
3 Trauma Resource RNs  
2 Trauma Social Workers  
Community Outreach / Injury Prevention  
Manager  
4 Community Health Workers  
1 Injury Prevention Registrar  
Trauma Clinical Education Coordinator



## Registry Team

Trauma Registry Manager  
7 Full Time Registrars  
1 Full Time Setup / HIM Registrar

# Trauma Team ca. 2015

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## Trauma Institute

Trauma Medical Director  
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Clinical Education /Community  
Outreach Coordinator



## Registry Team

Trauma Registry Manager  
4 Full Time Registrars

# Once Upon a Time...

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2009...

- Annual trauma admissions ~2700
- New incoming TMD
- New Trauma Registry Manager

Multiple challenges including:

Lack of standardized registrar education

Weak/Incomplete datasets

Less than stellar ACS Reverification (data)

# Weak

# Initial Steps

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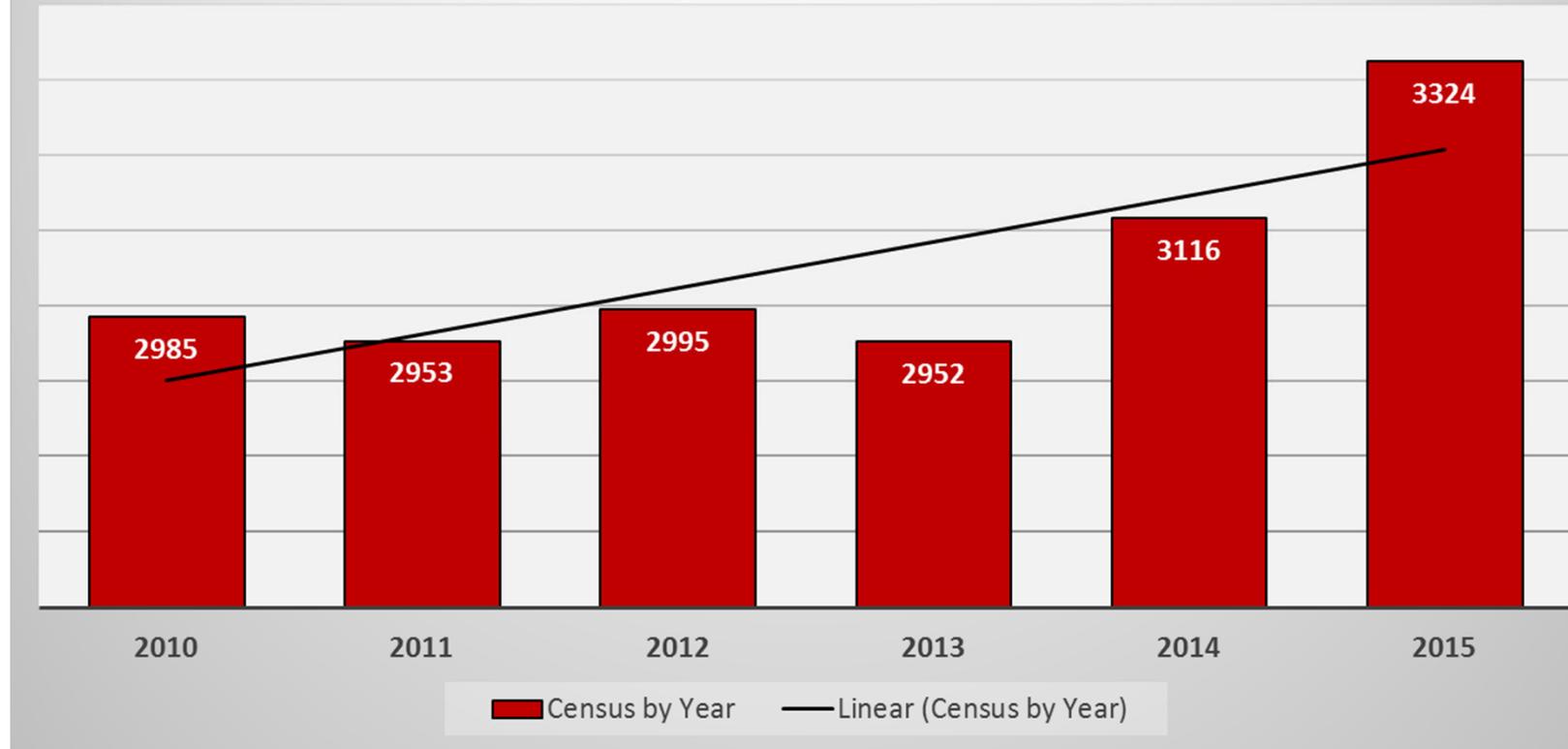
- Purchase of more efficient data software (TraumaBase)
- Acquisition of educational materials
  - Abbreviated Injury Scale (AIS) books
  - ICD9 books
  - Associated training courses

# 2014 State of Affairs

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- New TPM (previously in-house)
- Registry staffing changes
  - Retirements
  - Terminations
- Steady annual trauma census increase

## Annual UofL Hospital Trauma Census 2010-2015



# New Challenges

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Beginning in late 2015...

- Loss of personnel and lack of experienced medical coders applying for open registry positions.
  - Initial six month training period for registrars once hired
- Implementation of ICD10 for all trauma data records announced, beginning with patients arriving to our hospital for injury care starting **January 1st, 2016**

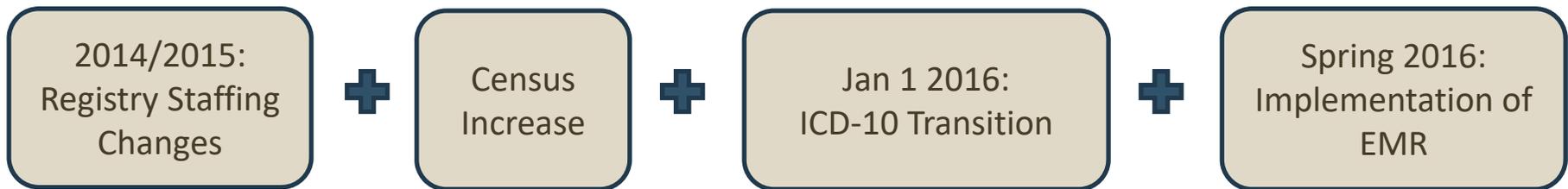
# New Challenges

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- Implementation of new electronic medical records software (Cerner) announced for the **spring of 2016**
- Census increased to over 3000 trauma patients annually

# A Perfect Storm is brewing...

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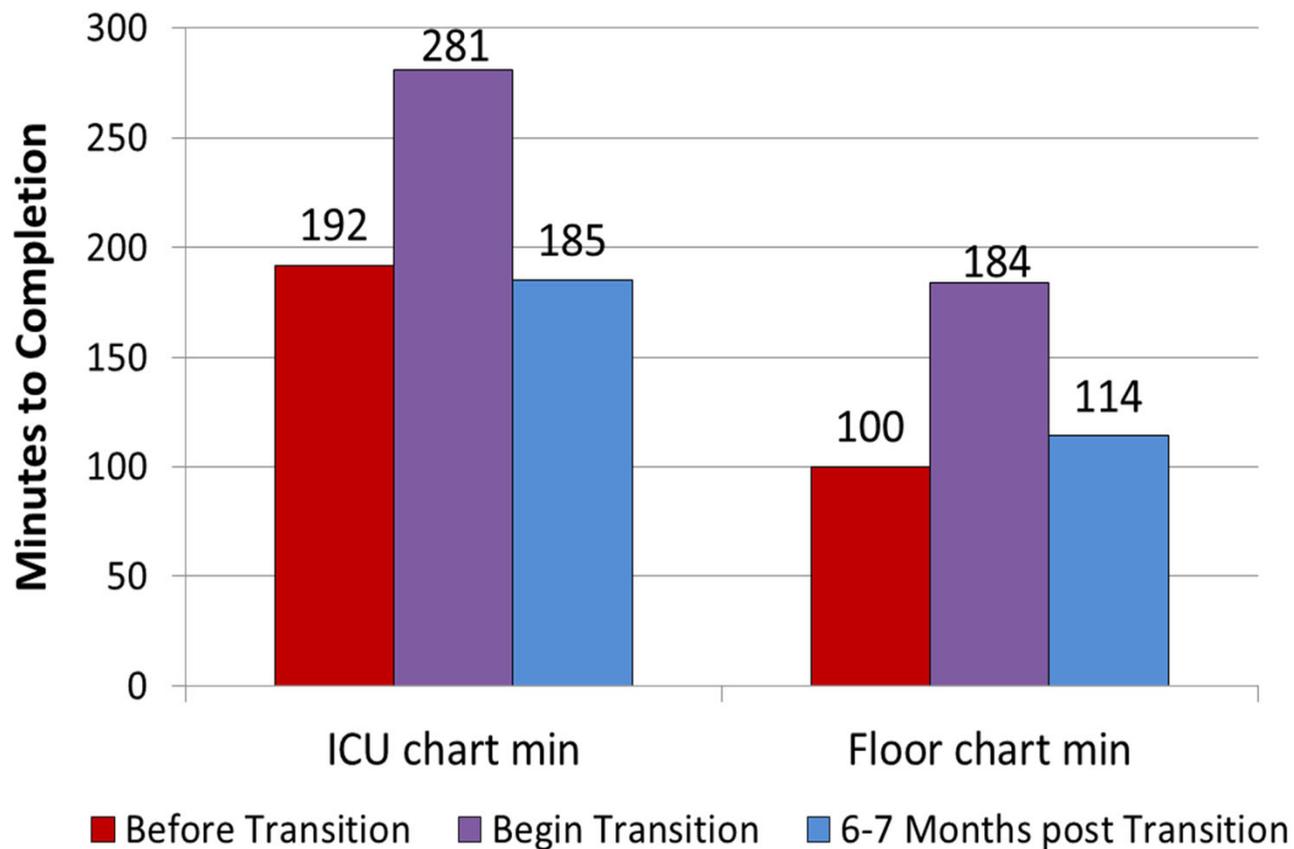
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# Damage Control

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- Immediate measures:
  - Onboarding of external consulting agency to ensure continued timely abstraction of patient charts until open positions could be filled
  - Standardization within the registry team was implemented with regard to the electronic medical record for specific data point abstraction and monthly meetings were held to ensure optimal communication and understanding between team members.
  - Time study of registrar productivity was conducted by the registry manager to track improvement efforts until an adequate return to pre-2014 productivity levels was observed.

## Measuring Trauma Registrar Productivity: Minutes for setup/ abstracting/coding/scoring/inputting N = 710



# Next Steps

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The information gathered from the time studies was presented to hospital administration to demonstrate the need for an additional trauma registrar. The position was approved and the hiring and training process began again.

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Further time studies were conducted six months after implementation of all system changes to determine if efficiency improved with greater familiarity/experience with the new information systems.

Time for data completion decreased to 2.4 hours avg. per chart (144 minutes).

Subsequent time studies have confirmed that time to complete data abstraction has remained stable.

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**But while we were at it...**

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- An ever growing annual patient volume
  - Desire to expand and grow clinical, research, and data initiatives
  - Maximize efficiency of current resources
  - Limited FTEs

The need to strengthen our data foundation was clear, as was the need to streamline and grow our team.

# Trauma Resource Nurse: The Pilot

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- 3-month trial
- Designated trauma nurse in the ED to assist with level 1/2 activations
- Improve trauma patient throughput from the ED to ICU/Floor
- Decrease the ED LOS
- Improve patient safety

Length of Stay for Level 1 and Level II Trauma Patients in the Emergency Department		
December 2015	January 2016	February 2016
105.45 minutes	76.75 minutes	38.8 minutes

# The More, the Merrier

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# A Day in the Life of a TRN

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- Patient care begins on arrival to the ED
  - Order tracking
  - Lab trending/ Vitals
  - Early documentation of pre-existing conditions & complications
  - Assist unit nursing staff with critical aspects of patient care, easing workload
  - Critical documentation within EMR
  - Coordination of care plans between multiple consulting teams
  - Formation of a trusting relationship with nursing and physician staff

## Improving Patient Safety



# Current TRN- led data initiatives

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- **ED hourly documented vital signs/ neuro assessments**
  - Previous consistency issues w/ ED nursing
  - Process implemented to assist in reminding nursing of the need of Q1 hour vitals/neuro assessments

## Barriers Identified:

- Transition from paper charting in the resuscitation bay to electronic charting in the main emergency department
- Transition to new electronic health record (EHR)

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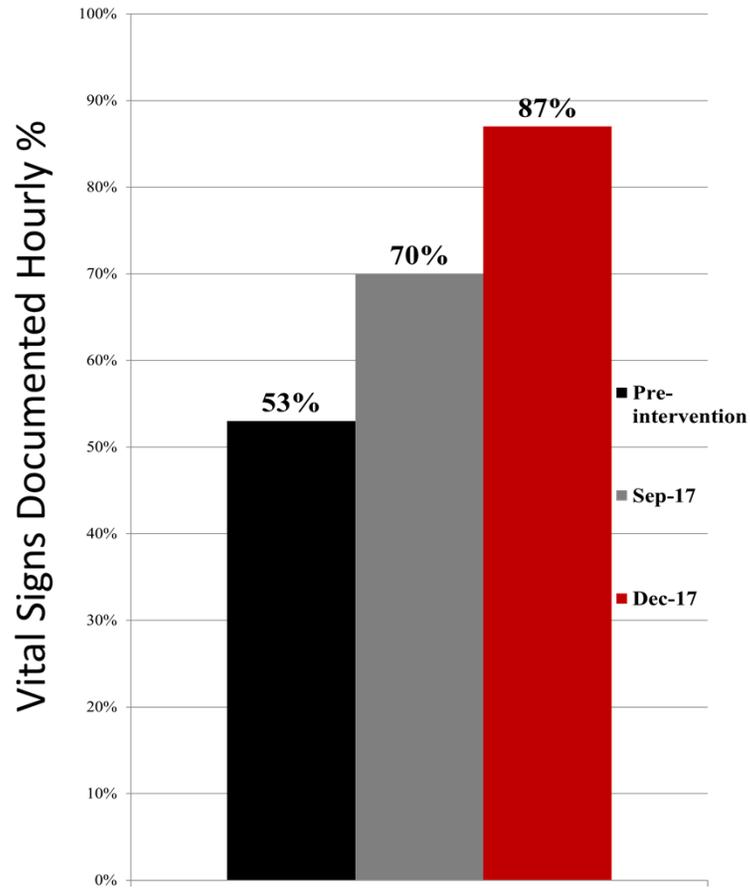
## Methods:

Chart audit conducted of ICU patients admitted through the ED

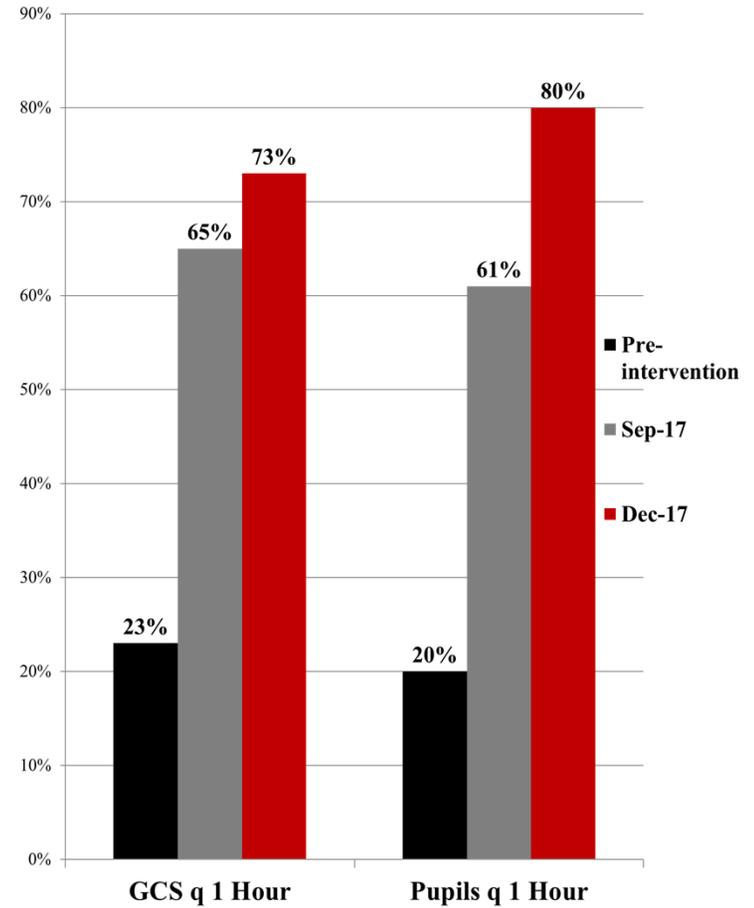
## Interventions:

- Education provided to nursing staff and Residents re: policy requirements
- Revision of the trauma Resuscitation order set
- Electronic reminder pop-up within EMR to reinforce

**Vital Sign Documentation  
Audit:  
Pre & Post Intervention**



**Neuro Documentation  
Audit: Pre & Post  
Intervention**



**Utilizing Trauma Registry Data to Improve Emergency Department Documentation Practices**  
Danelle Jones, RN; Ashley Wheeler, RN; Wanda Bowen, CAISS; Kim Denzik, RN, MSN; Brian G. Harbrecht, MD  
University of Louisville Hospital  
University of Louisville Department of Surgery

# Current TRN- led data initiatives cont.

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- **Early mobilization of trauma patients in the ICU**
  - Assess impact on LOS of EM in trauma ICU population
  - Assess impact on DVT, pneumonia, pressure ulcers, vent dependence

## Barriers Identified:

- Lack of available staff to assist with patient movement
- Lack of available literature on the topic
- Risk for line/tube dislodgement, hemodynamic changes, etc.

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## Methods:

Retrospective data from the trauma registry will be utilized including length of stay, ICU length of stay, incidence of pneumonia, DVT, & pressure ulcers

## Results:

- Pending

# Data, Data Everywhere!

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Trauma registry data is being collected & used in more ways than ever before:

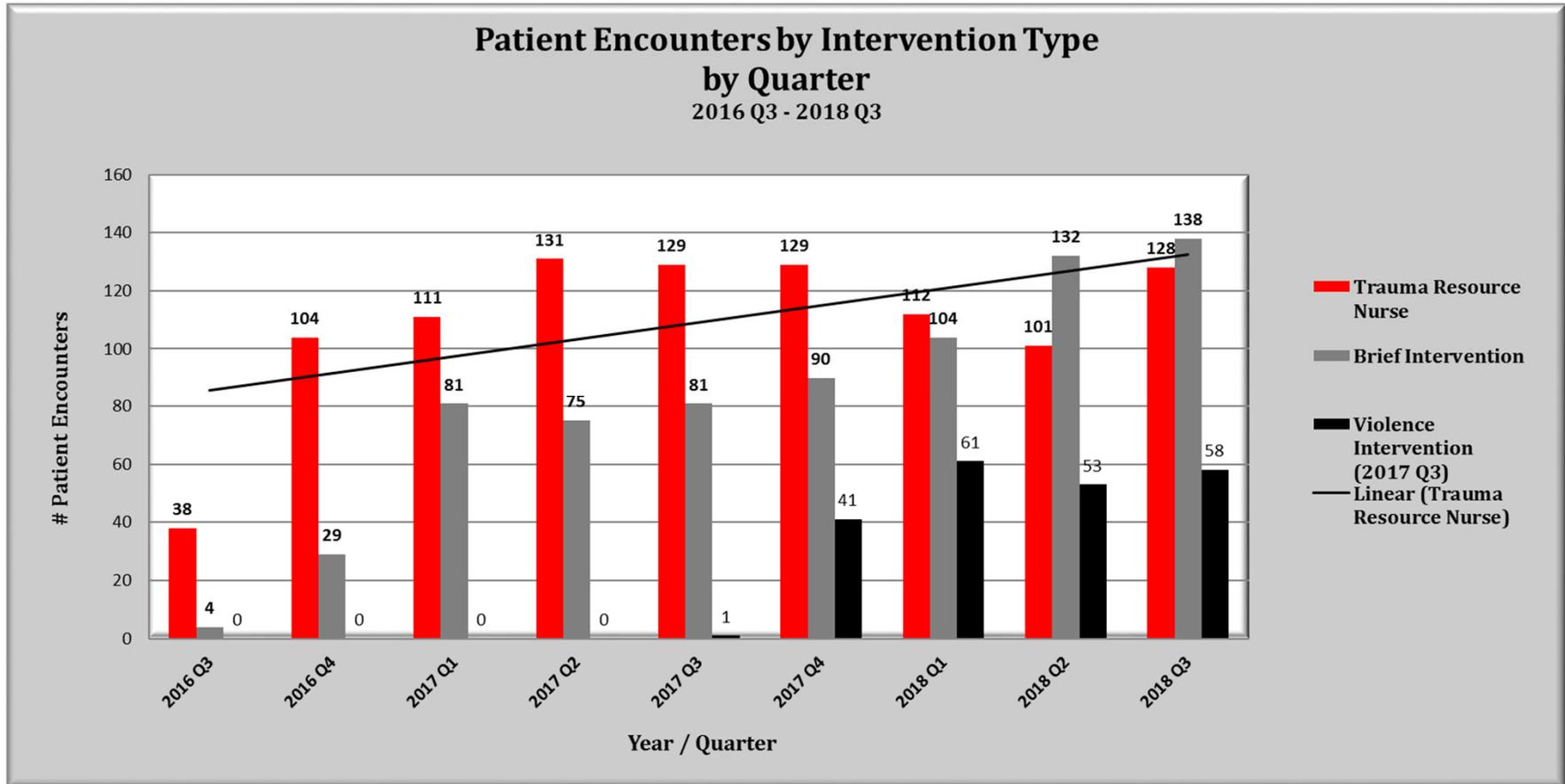
- Trauma Social Workers
  - Daily Brief Interventions
  - Trauma Clinic Follow-ups
- Community Health Workers
  - Daily Violence Interventions
  - Resource acceptance tracking

# Data, Data Everywhere!

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- Injury Prevention Registrar
  - Abstraction and input of GSW/stabbing patients
    - Police report information including incident location, charges filed, weapon type/caliber etc.
  - Monthly reporting to local LMPD
    - Corresponding patient data collected by our registrars – demographics, outcomes, injury patterns

# Patient Encounter Trending



# FTE Acquisition Timeline

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Additional patient Encounters to date:

>2100

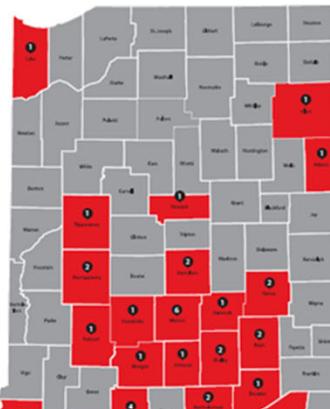
# Data drives the bus!

- Use data to tell your facility's story – Who are you? What do/can you bring to your community?
- Evaluating program success
- Driving community initiatives
- Advocating for resources



54% of Patients Treated Resided Outside of Jefferson County

3,483 Patients Treated in 2016

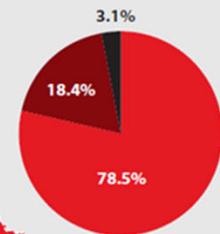


## Coverage

### Serving Patients from Across Kentucky and Beyond

In 2016, our trauma center treated 3,483 patients; 54% of those patients resided in counties outside of Jefferson County. The number of patients who come from outside the Louisville Metro area makes the UofL Hospital Trauma Center a vital local, regional, and statewide resource.

Patient State of Residence	Number of Patients
Residing in Kentucky	2734
Residing in Indiana	640
Residing in Neither Kentucky Nor Indiana	109
<b>Total</b>	<b>3483</b>



- Residing in Kentucky
- Residing in Indiana
- Residing in Neither Kentucky Nor Indiana

# Research

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“You can have data without information, but you cannot have information without data.”

## Data are:

- A driving force
- Infinite possibilities
- Powerful
- Coveted

- [Daniel Keys Moran](#),  
Computer programmer  
and science fiction author

In 2017, there were 17 IRB-backed studies conducted utilizing our facility's trauma data.

2018 followed a similar trend.



# Tips for Team Building

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- Administration engagement
  - Identify the benefits of a robust trauma registry
    - Improving patient care (and the bottom line)
    - Tracking measurable outcomes in real-time
    - More thorough patient engagement through additional inpatient and outpatient encounters
    - Justification for additional FTE positions
    - Greater external interest in, and thus support for, data collection based in the trauma registry
- Perseverance
  - Keep at it!
    - Remain visible with the cause
    - Remind stakeholders of the data available

# Data Reporting

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## Choices, choices, choices.....

Data sharing/reporting will vary in method and frequency depending on:

- Who the audience is
- What you are trying to tell them
- Which data presentation methods will be most effective
- How often the data should be reported

# Annual

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## Year-End Reporting (Internal)

- ❖ Admissions/Outcomes
  - ❖ Service-specific Data
- ❖ Surgeon Report Cards
  - ❖ ACS Preparations

## Community / Outreach

- ❖ Trauma Center Annual Report
  - ❖ Marketing
- ❖ Annual Fall Symposium



# Quarterly

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- National Trauma Data Bank (NTDB)
- EMS Outreach
  - Scene vs. Referring hospital data
  - Response times/ delays
  - Data collaborations
- Internal data reporting
  - Performance Improvement Filters
  - ISS Breakdown
  - Injury type trending
  - Survival/Outcome ratios
- State-wide Mandated Reporting
- Trauma Resource Nursing Data
  - ED to ICU Transitions/Throughput
  - Patient Care Benefits



# Weekly

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- Performance Improvement meetings with the TMD every Thursday
  - Admission volume tracking
  - Registry productivity updates
  - Internal/external education updates
  - Performance Improvement initiatives
- Community Outreach Updates
  - Stop the Bleed
  - Public Health & Wellness efforts
  - Funding
  - GSW Community Project

# The Importance of Validation

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**YOU are the keeper of your data!**

## Validation

- Helps ensure the continuity of your data
- Pin-point areas of potential education needs
- Identify issues before they grow
- Frequency is your friend!

## Collection of data should be:

- Timely
- Efficient
- Accurate

# Validation Methods/Resources

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## Methods

- TQIP Submission Frequency Reports
- Validation Summary Reports
- Targeted Spot-checks
- Re-Abstraction
  - ✓ Aim for 10-15% of monthly volume

## Resources

- Trauma Program Manager
  - Clinical providers
  - Peer-support
  - The “Orange Book”
  - National Trauma Data Standard (Data Dictionary)
  - Performance Improvement RNs
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# Closing Thoughts

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## Golden rules for a successful registry

#1 Functional

#2 Productive

#3 Efficient

# Closing Thoughts

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- Share your data routinely
- Transparency builds trust!
- Educate others on what data is available
- Work smarter—not harder!

**Let your data tell your story**

# Questions?

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