Kentucky's Trauma System & Medicaid

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Trauma System Background

- Created in 2008 thru HB 371 July 15, 2008/Modified July 12, 2012
  - Codified at KRS 211.490-211.496
- “Trauma” means a single or multisystem life-threatening or limb-threatening injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability. (Def. adopted from KRS 311A.010)

Statutory Findings and Requirements

- KRS 211.490:
  - (2) *Trauma care is an essential public service*;
  - (6) *Trauma centers save lives and money* because access to trauma care can mean the difference between full recovery and serious disability that requires expensive long-term care and results in a loss of economic productivity;
  - (8) It is in the best interests of the citizens of Kentucky to establish an efficient and well-coordinated statewide trauma system.
- KRS 211.494:
  - (1) A comprehensive statewide trauma care program shall be established within the Department for Public Health.
  - The statewide trauma care program shall consist of, at a minimum, a statewide trauma care director and a state trauma registrar funded through available federal funds or, to the extent that funds are available, by the trauma care system fund established in KRS 211.496.
  - *The department may contract with outside entities to perform these functions*.

Kentucky State Trauma System
Right Patient • Right Care • Right Time

- Trauma Centers must be officially designated as part of the KY Trauma Care System.
- Level I, Level II and Level III Trauma Centers are verified by the American College of Surgeons Committee on Trauma (COT) every three years.
- Level-IV Trauma Centers are verified by the Kentucky Trauma Advisory Committee.
- KY Injury Prevention & Research Center (KIPRC) oversees the Kentucky Trauma Registry.
  - Current funding for KY Trauma Registry, data analysis and reporting is from the National Highway Traffic Safety Administration.
  - Trauma Registry data are de-identified; thus, individual patients cannot be tracked as they are transferred from one hospital to another.
  - 27 hospitals reported 2020 data to the trauma registry.

Trauma Systems and Medicaid

- Many studies find that state trauma systems improve outcomes from serious injury (findings in KRS 211.490).
- Arkansas study found that a $20 million investment in establishment of a trauma system yielded a 9:1 return on investment in relation to the value of lives saved.
- Robust trauma systems reduce the proportion of seriously injured people who die or are left with long-term disabilities.
- For seriously injured people, access to post-acute rehabilitation improves outcomes:
  - Return to work
  - Independence in activities of daily living
- Medicaid expansion coverage includes low-income young adult men:
  - Population most likely to incur serious trauma
  - Usually ineligible for coverage before Medicaid expansion

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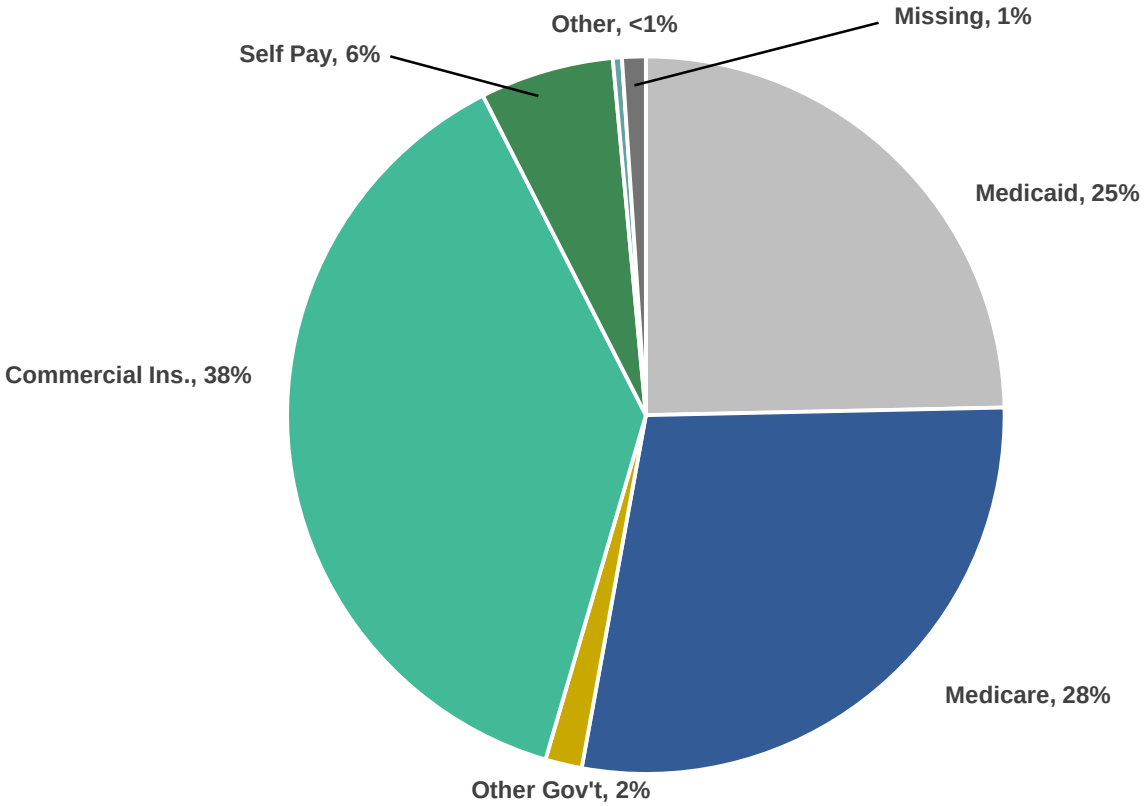
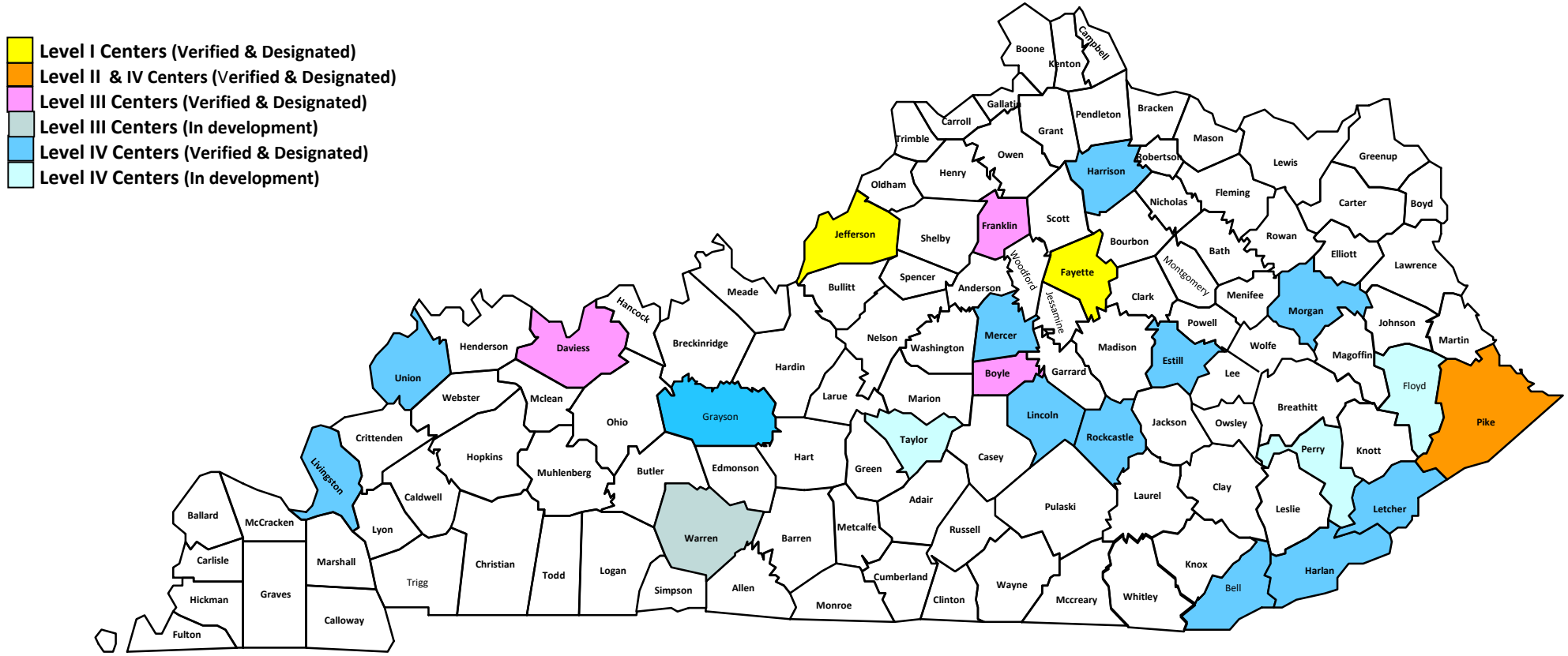
Trauma System Payer Mix, 2019



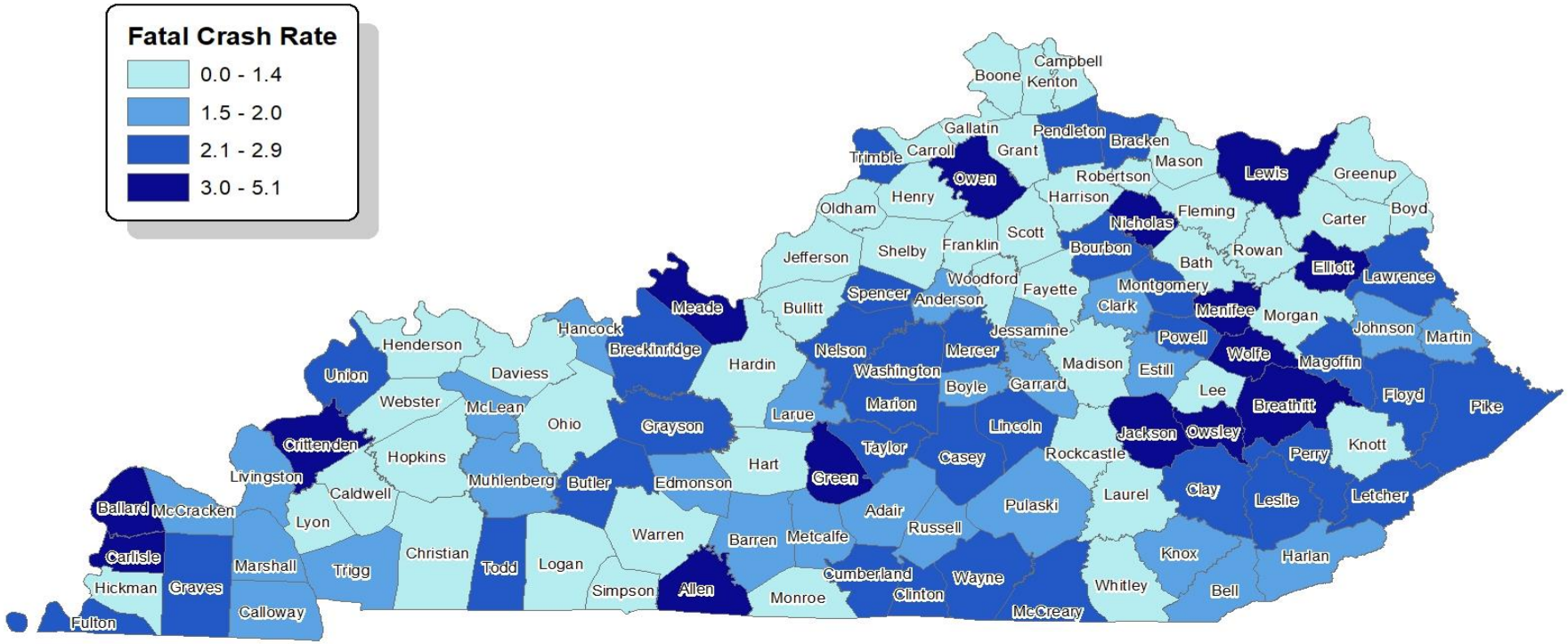
Hospitals in the Kentucky Trauma System

(June 28, 2021)

Kentucky State Trauma System
Right Patient • Right Care • Right Time



FATAL CRASH RATE BY COUNTY (2015 - 2019)
Fatal Crashes per 100 Million Vehicle Miles



Source: Kentucky Transportation Center, Univ. of Kentucky

Motor Vehicle Crash Fatalities Impact Trauma Outcomes

- Kentucky has a 33% higher rate of motor vehicle crash fatalities than the national average (1.48 vs. 1.11 per 100 million miles traveled).
- Kentucky has a 28% higher rate of death from all traumatic injuries compared with the national average (68 vs 53 per 100,000 population).
- Of the 734 motor vehicle crash-related deaths reported in 2019, 144 (19.6%) occurred after reaching a trauma hospital.
- In contrast, of the 14,172 trauma patients reported in the 2019 Ky Trauma Registry, only 4.4% died after reaching the reporting hospital.

Cost Issues in Trauma Systems

- Trauma care ranks 2nd in US healthcare spending, responsible for about 10% of US medical expenditures.
- Trauma center care costs more than injury care at non-trauma hospitals for several reasons:
  - Typical TC patient is male aged15-34 with Medicaid or uninsured
  - Typical non-TC patient is woman aged 55 or older with Medicare
  - Typical TC patient likely to have intracranial injury/skull fracture from MVC
  - Typical non-TC more likely to have lower extremity fracture from a fall
- Trauma centers cost more to operate and sustain:
  - More intensive clinical management
  - Expense to operate high-resource hospital with 24-hour availability of key specialized services

Source: Zocchi et al., 2016

How Trauma Systems Reduce Health Care Costs

- Protocols for care can reduce care variation and avoidable costs.
- Protocols for reducing repeat imaging are good for patients, providers and Medicaid.
- Protocols for transport can reduce need for air transport.
  - With adequate ground EMS
- System-wide coordination monitors performance and establishes trauma centers in areas of need
- Quality metrics and performance monitoring support quality improvement

Hospitals Bear Trauma System Costs

Trauma Costs without Activation Fee Reimbursement, 2014 Arkansas Estimates Projected to KY 2019

	Costs > payment	KY Pts >2 day LOS	Subtotal pt care	Response & Verification	Total net revenue
Level 1	$ (3,640)	1,307	$ (4,757,480)	$ (5,968)	$ (4,763,448)
Level II	$ 1,368	316	$ 432,288	$ (1,492)	$ 430,796
Levels III-IV	$ (2,935)	140	$ (410,900)	$ (14,628)	$ (425,528)
					$ (4,758,180)

Source: Mabry CD, Kalkwarf KJ, Betzold RD, Spencer HJ, Robertson RD, Sutherland MJ, Maxson RT. Determining the hospital trauma financial impact in a statewide trauma system. J Am Coll Surg. 2015 Apr; 220(4):446-58

Trauma Patients' Access to Post-Acute Care

- People who experience long-term disability because of traumatic injury are likely to exhaust their financial resources.
  - They may become Medicaid beneficiaries regardless of their pre-injury insurance status.
  - Ultimately, people with long-term disabilities are likely to be eligible for Medicare as well.
- People with Medicaid coverage have better access to post-acute care than uninsured people.
- When Medicaid coverage helps trauma patients achieve better outcomes, they are more likely to "graduate" from Medicaid to employment-based insurance.
- Discharges to rehabilitative services increased by 28%, from about one-fourth to one-third after Medicaid expansion.
- For the most seriously injured patients with Injury Severity Scores above 15, discharges to post-acute care increased by over 23%, to 43.57%, between 2008 and 2019.

Trauma Systems and Medicaid

- Medicaid expansion also reduces the number of lower acuity trauma visits to hospital emergency departments.
  - Insured patients can access outpatient care for their injuries in clinics and physician offices

- By reducing the proportion of uninsured trauma patients, Medicaid expansion contributes to hospital fiscal sustainability.

Limitation:
Trauma registry data are stripped of elements that would allow the identification of individual patients, limiting our ability to confirm national findings with Kentucky data.

Summary

- Kentucky has a higher burden of traumatic injury than the national average
- Trauma systems reduce death and disability from traumatic injuries
- Medicaid benefits from trauma systems through elimination of unnecessary costs and better patient outcomes
- Many states have developed sustainable funding models for their trauma systems
- Trauma systems require administrative support and oversight for which Kentucky currently lacks funding
- Participation in trauma systems usually costs hospitals more than they are paid for trauma services
- With additional financial support, Kentucky's trauma system has the potential to add hospitals in underserved areas and further enhance quality of care

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Disclaimer: The opinions and conclusions presented here are those of the author, who takes full responsibility for any errors.

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