



Commonwealth of Kentucky  
Cabinet for Health and Family Services

## **Kentucky Health Care Facility Capacity Study**

Findings and Options for Consideration

December, 2013

Deloitte Consulting LLP

## Facility Capacity Study

# Executive Summary

# Executive Summary: Background and Objectives

## Background

- The establishment of the Kentucky Health Benefit Exchange (KHBE) may result in a majority of Kentucky's 640,000 uninsured individuals using the Exchange to purchase health insurance coverage<sup>1</sup>.
- It is estimated that roughly half of these uninsured individuals may ultimately be covered under Medicaid expansion while an additional 276,000 may likely be eligible for some type of premium assistance<sup>1</sup>.
- Due to the increase in covered lives, the utilization of various healthcare services across the Commonwealth is expected to increase, raising questions of reasonable capacity and access.

## Objectives

- Assess current access to and availability of Kentucky's existing health care facilities.
- Identify shortage areas where an increase in health care facilities is required to meet current utilization demands and future circumstances of Kentuckians.
- Explore legislative and administrative policy changes such as Certificate of Need modifications that may be needed to increase the supply of health care facilities to improve population health.
- Identify high-level strategies and a proposed timeline to address facility gaps.

# Executive Summary: Approach and Findings

Demand and supply projections were developed to identify health services with potential capacity constraints. Select health services were examined more closely for policy implications and next steps for consideration.

## 1. Project Demand for Health Services Through 2017

*Services from State Health Plan*      Projections based on insurance expansion, utilization trends, and population growth

## 2. Review Findings and Formulate Options for Consideration

<b>Topic / Health Service</b>	<b>Principle Finding</b>	<b>Options for Consideration</b>
<i>A. Health Services Data</i>	Data consistency and availability	→ Harmonize & expand health data reporting
<i>B. Acute Care Services</i>	Excess capacity in acute care	→ Consolidate and / or redistribute acute capacity
<i>C. Nursing Facilities</i>	Potential shortages in nursing care	→ Strengthen home and community based services
<i>D. Psychiatry Services</i>	Disparities in psychiatric care	→ Develop comprehensive behavioral health plan
<i>E. Imaging: MRI, PET</i>	Deregulation in other states	→ Consider discontinuing CON for MRI and PET
<i>F. Ambulatory Surgery</i>	Potential shortages in ASC	→ Temporarily relax CON criteria for ASC

## Facility Capacity Study

# Projections

# Methodology: Facilities & Services Included

The facilities and health services reviewed in this study were grouped into 2 tiers.

	Facility Type <sup>1</sup>	Facility Description	Number of Facilities	Total Volume	Unit of Measure
Tier 1	Acute Care <sup>2</sup>	Inpatient hospital	118	521K	Discharges
	Comp. Rehab <sup>3</sup>	Inpatient rehab	17	12K	Discharges
	Psych Hospital <sup>3</sup>	Inpatient psychiatry	41	47K	Discharges
	PRTF <sup>3</sup>	Residential psychiatry	24	0.5K	Discharges
	Nursing Facility <sup>3</sup>	Nursing facilities	286	8.5M	Patient Days
	Home Health <sup>3</sup>	Home health agencies	100	121K	Patients Served
	Hospice <sup>3</sup>	Hospice services	24	17K	Admissions
	Res. Hospice <sup>3</sup>	Residential hospice services	7	3K	Admissions
	Cardiac Cath <sup>2</sup>	Cardiac Cath services	54	57K	Procedures
	ASC <sup>2</sup>	Ambulatory Surgery Centers	144	464K	Surgeries
	CD <sup>3</sup>	Chemical dependency	8	4K	Discharges
PDN <sup>3</sup>	Private Duty Nursing	10	0.3K	Admissions	
Tier 2	Neonatal <sup>2</sup>	Neonatal Level II & III	49	17K	Discharges
	Open Heart <sup>3</sup>	Open heart programs	92	6K	Surgeries
	Transplant <sup>3</sup>	Transplant programs	4	0.4K	Transplants
	MRI <sup>3</sup>	Magnetic Resonance Imaging	173	438K	Procedures
	PET <sup>3</sup>	Positron Emission Tomography	41	25K	Procedures
	MRE <sup>3</sup>	Megavoltage Radiation Equipment	53	235K	Procedures

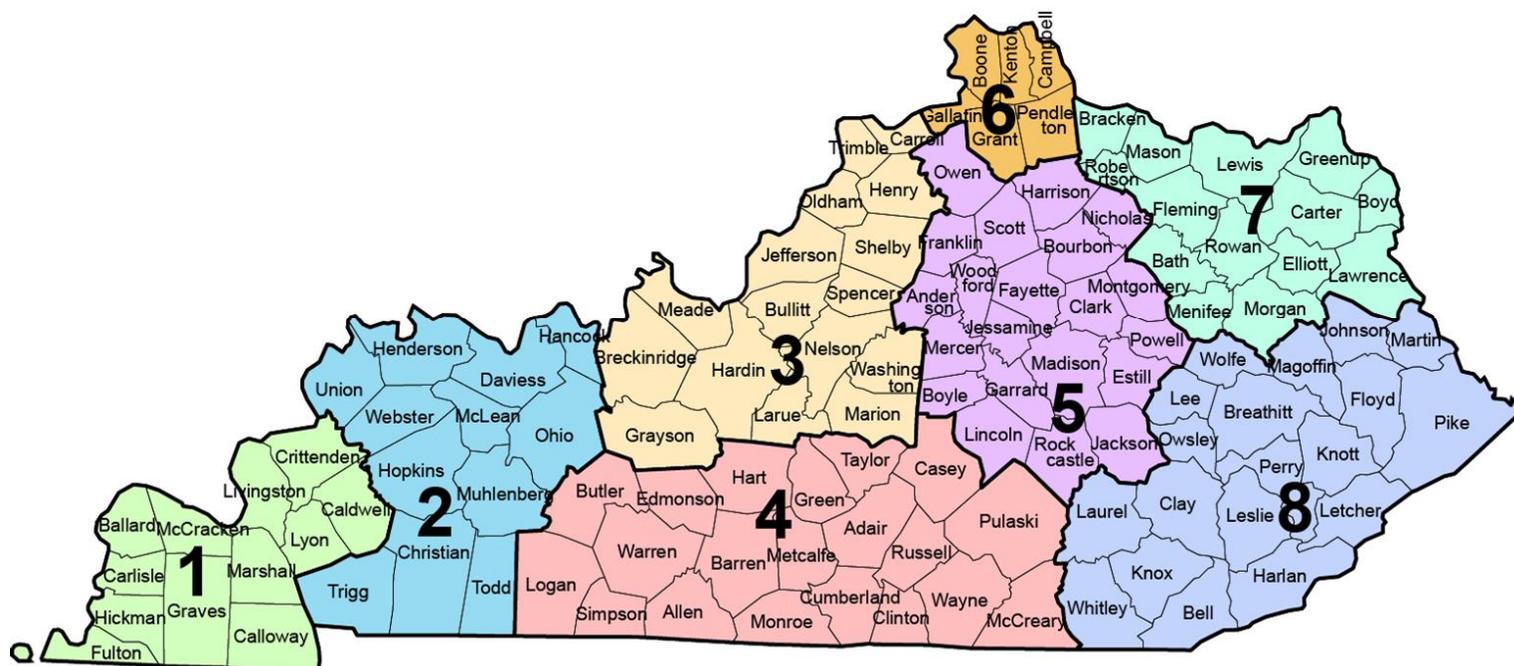
**Tier 1 facilities** are expected to experience continued shifts between inpatient and ambulatory site of care ('continued momentum'). Tier 1 facilities are general inpatient and outpatient acute care services.

**Tier 2 facilities** are assumed to not experience major shifts from one site of care to another, but rather perpetuate the most recent utilization rates ('steady state'). Tier 2 facilities are high acuity specialty care and imaging services.

1. Facilities correspond to types of services regulated by CON within the State Health Plan  
 2. Volume source for Acute Care, Cardiac Cath, ASC and Neonatal: KY Administrative Claims Data Report refers to "Kentucky Annual Administrative Claims Data Report, Cabinet for Health and Family Services, Office of Health Policy"  
 3. Volume source for other facility types: KY Annual Survey Data Report: Refers to "Kentucky Annual Utilization and Services Reports, Cabinet for Health and Family Services, Office of Health Policy"

# Methodology: Medicaid Managed Care Region

Medicaid Managed Care Regions (MMCR) were selected as the primary unit of analysis representing independent care regions.



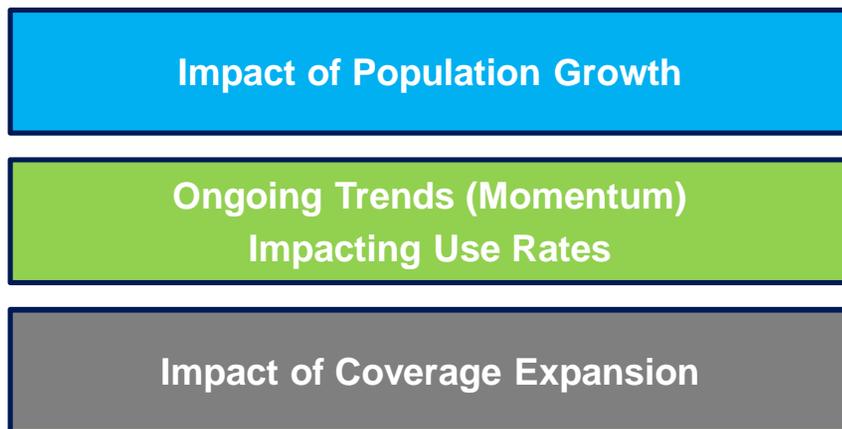
*The eight MMCRs represent independent care regions with distinct health services utilization patterns.*

- **Region 1:** Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, McCracken
- **Region 2:** Christian, Daviess, Hancock, Henderson, Hopkins, McLean, Muhlenberg, Ohio, Trigg, Todd, Union, Webster
- **Region 3:** Breckinridge, Bullitt, Carroll, Grayson, Hardin, Henry, Jefferson, Larue, Marion, Meade, Nelson, Oldham, Shelby, Spencer, Trimble, Washington
- **Region 4:** Adair, Allen, Barren, Butler, Casey, Clinton, Cumberland, Edmonson, Green, Hart, Logan, McCreary, Metcalfe, Monroe, Pulaski, Russell, Simpson, Taylor, Warren, Wayne
- **Region 5:** Anderson, Bourbon, Boyle, Clark, Estill, Fayette, Franklin, Garrard, Harrison, Jackson, Jessamine, Lincoln, Madison, Mercer, Montgomery, Nichols, Owen, Powell, Rockcastle, Scott, Woodford
- **Region 6:** Boone, Campbell, Gallatin, Grant, Kenton, Pendleton
- **Region 7:** Bath, Boyd, Bracken, Carter, Elliott, Fleming, Greenup, Lawrence, Lewis, Mason, Menifee, Morgan, Robertson, Rowan
- **Region 8:** Bell, Breathitt, Clay, Floyd, Harlan, Johnson, Knott, Knox, Laurel, Lee, Leslie, Letcher, Magoffin, Martin, Owsley, Perry, Pike, Whitley, Wolfe

# Methodology: Demand Projections

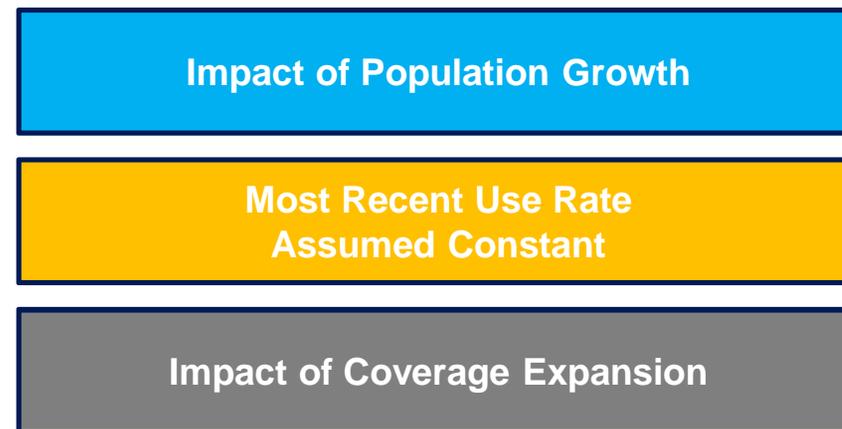
Distinct demand projection methodologies were applied for Tier 1 (continued momentum) and Tier 2 facilities (steady state), and results reported at the MMCR or State level.

## Tier 1 – Continued Momentum



- General population growth estimated at the county level and aggregated to MMCR<sup>1</sup>.
- The Commonwealth’s 4-year historic utilization trends for each MMCR extrapolated through 2017 to account for ongoing shifts in site of care stemming from medical advances and refined case management.
- Historical utilization rate amplified by the impact of coverage expansion (estimated at the State level).

## Tier 2 – Steady State

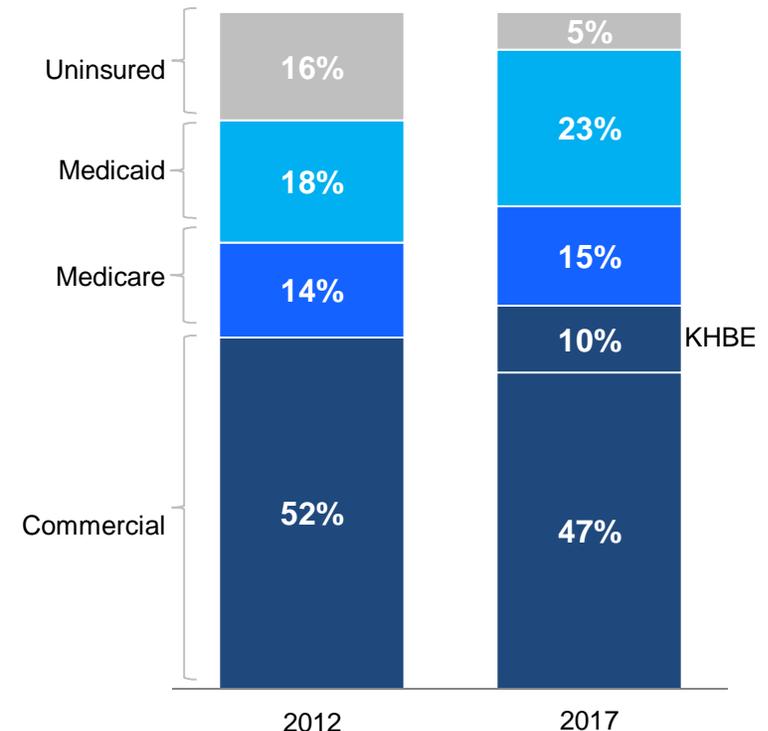


- General population growth estimated at the county level and aggregated to MMCR<sup>1</sup>.
- Most recent Commonwealth utilization rates carried forward under the assumption that increases/decreases in utilization will largely outweigh each other.
- Historical utilization rate amplified by the impact of coverage expansion (estimated at the State level).

# Methodology: Impact of Coverage Shifts

Through 2017, the insured population is projected to increase due to Medicaid program expansion and the advent of affordable insurance options on the Kentucky Health Benefits Exchange.

Payor <sup>1-6</sup>	2012	2017	2017 Methodology
Uninsured	704,293	249,946	Projected baseline 2017 uninsured – Est. 2017 newly eligible enrollment – Est. 2017 “woodwork” enrollment – Est. transitions to Medicare or KHBE
Medicaid	792,329	1,057,235	Projected 2013 Medicaid enrollees + Est. 2017 newly eligible enrollment + Est. 2017 “woodwork” enrollment
Medicare	616,256	673,752	Projected 2017 Medicare population using KY Medicare-specific growth rate
KHBE – Individual and Small Group	0	202,588	Estimated 2017 enrollment in health benefit exchange
KHBE – Large Group	0	122,067	Estimated 2017 enrollment in health benefit exchange
KHBE – Uninsured	0	123,437	Estimated 2017 enrollment in health benefit exchange
Commercial	2,288,951	2,137,575	All other payer types; Estimated as delta to total population
<b>Total</b>	<b>4,401,829</b>	<b>4,566,600</b>	<b>Extrapolated based on 2020 population projections</b>



1. Sources: 2012 total population based on Census 2010 and July 1, 2012 Estimates from KY website; payor split based on Kaiser Family Foundation estimates  
2. 2012 uninsured: 640,000; Source: Analysis of the Affordable Care Act: Medicaid Expansion in Kentucky, Kentucky Cabinet for Health and Family Services; also includes 44,000 “other” covered population; Source: Kaiser Family Foundation estimates  
3. Newly eligible enrollment: 187,898; Woodwork enrollment: 21,711; Source: Analysis of the Affordable Care Act: Medicaid Expansion in Kentucky, Kentucky Cabinet for Health and Family Services  
4. KY Department for Medicaid Services Enrollment numbers as of Jan. 2013 extrapolated by total population CAGR  
5. CMS National Health Expenditure Data, pg. 24  
6. Source: KHBE preliminary estimates

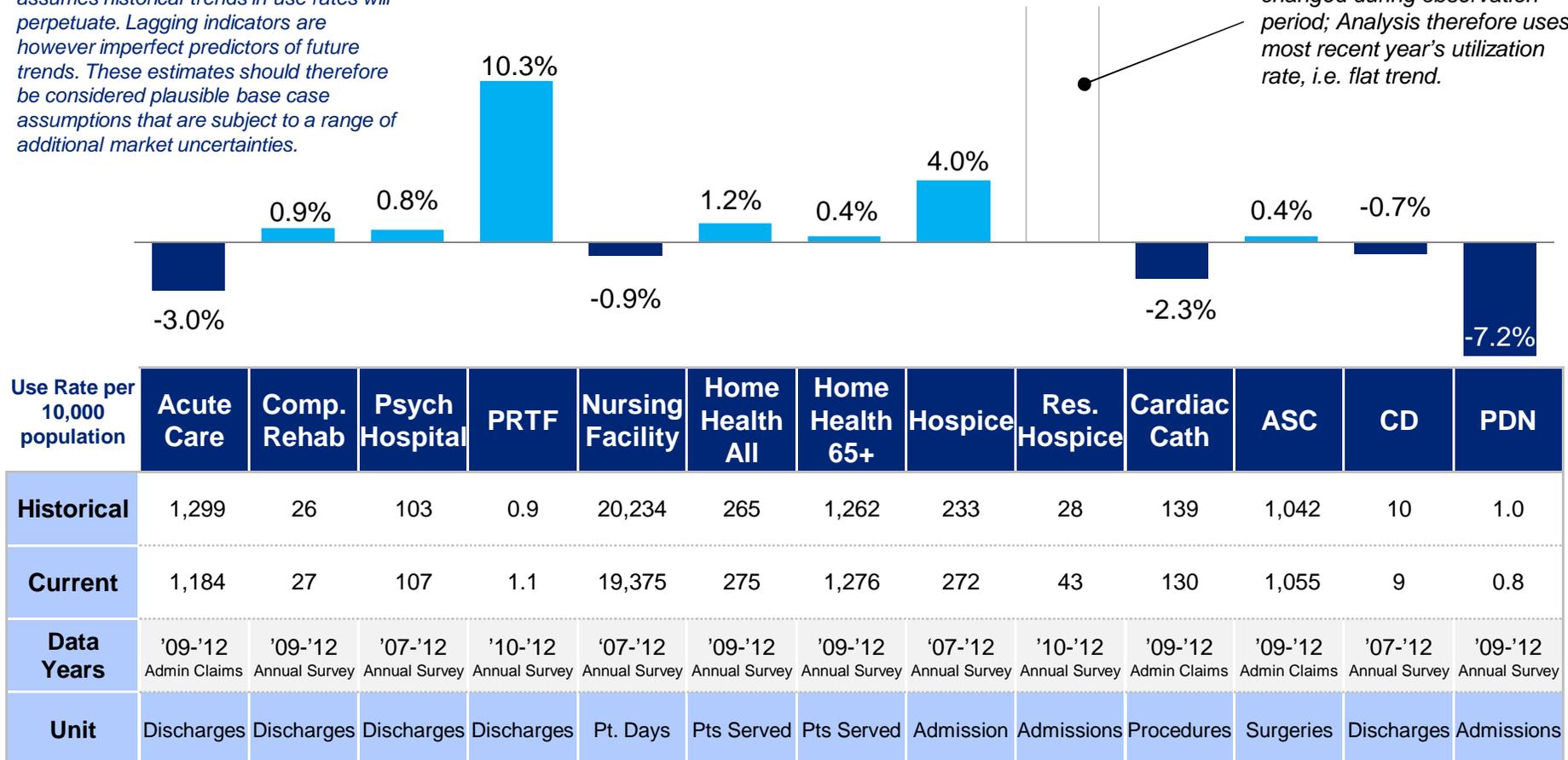
# Methodology: Continued Momentum Trends

For Tier 1 Facilities, recent trends in utilization patterns are assumed to continue through 2017 (continued momentum), e.g. with shifts from inpatient to ambulatory care settings.

## Tier 1 Facilities – Annual Change in Use Rate (CAGR)<sup>1</sup>

*Note: The continued momentum analysis assumes historical trends in use rates will perpetuate. Lagging indicators are however imperfect predictors of future trends. These estimates should therefore be considered plausible base case assumptions that are subject to a range of additional market uncertainties.*

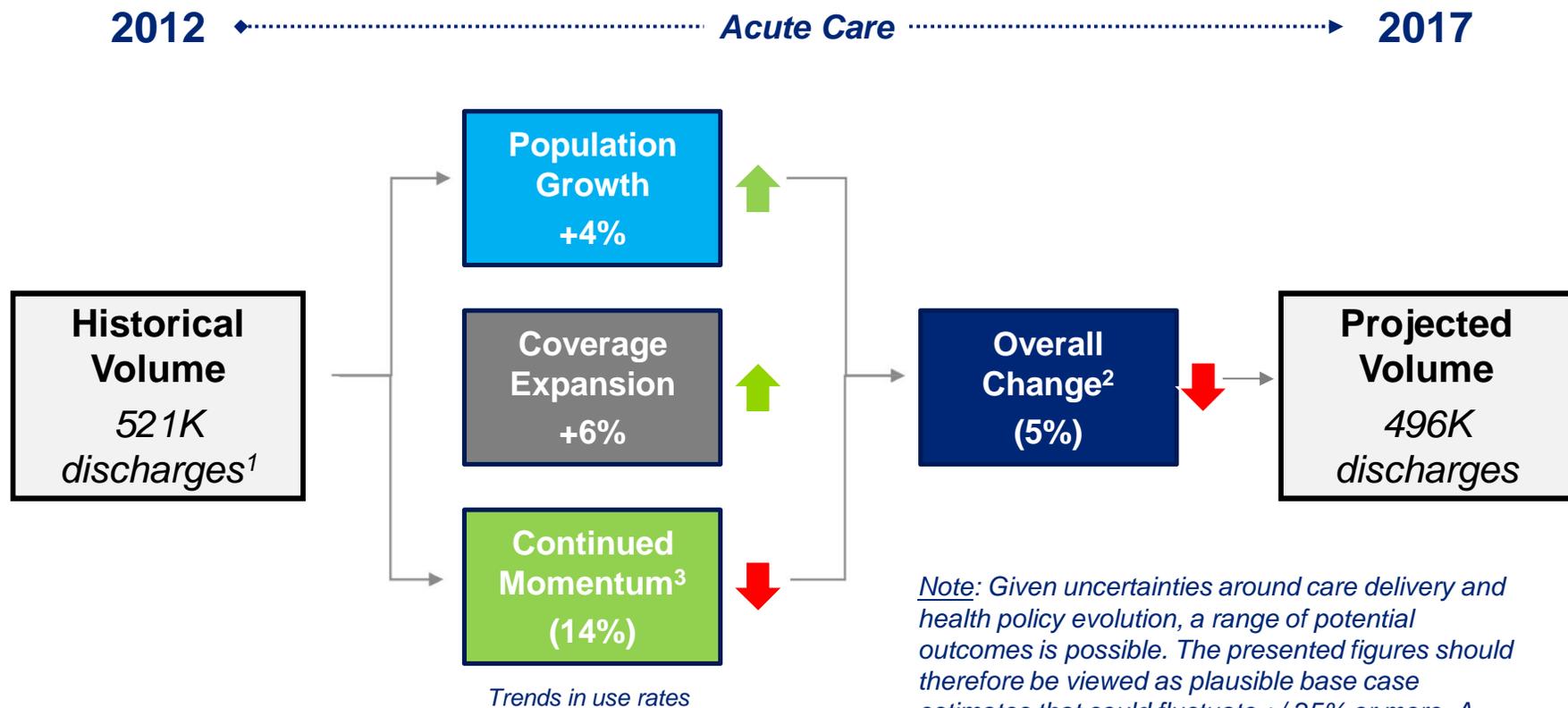
*Data collection methodology changed during observation period; Analysis therefore uses most recent year's utilization rate, i.e. flat trend.*



# Methodology: Acute Care Example

Changes in service volume are the result of the combined effects of population growth, coverage expansion, and trends in use rates.

*Total change in volume:*



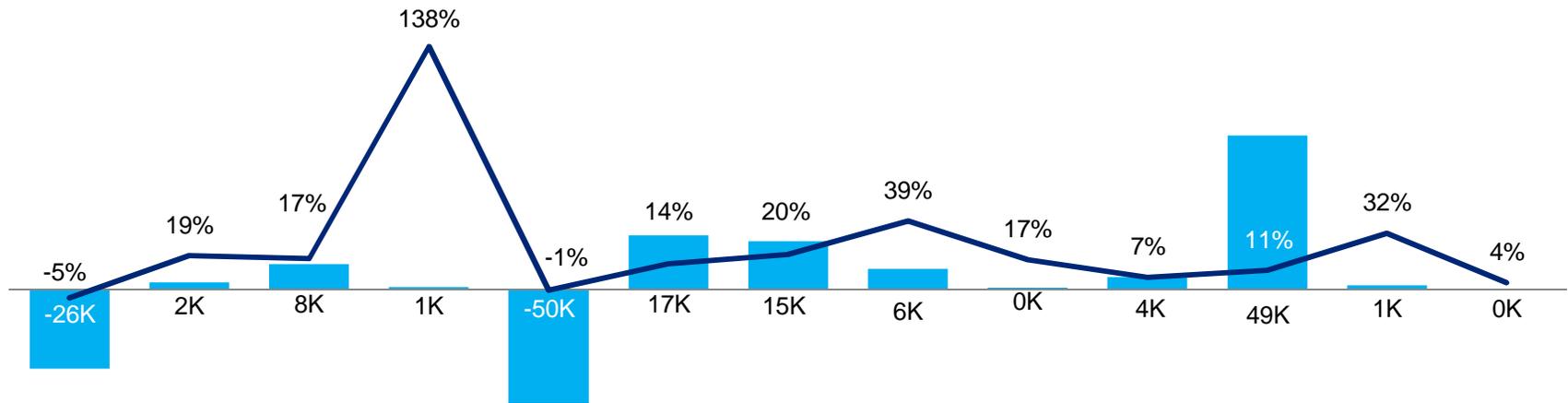
*Note: Given uncertainties around care delivery and health policy evolution, a range of potential outcomes is possible. The presented figures should therefore be viewed as plausible base case estimates that could fluctuate +/-25% or more. A sensitivity analysis presented in this document tests the robustness of the projections relative to specific planning assumptions.*

1. Acute care data is based on statewide 2012 KY Administrative Claims Data Report  
 2. Change corresponds to total change over the observation time horizon, not annual growth rate  
 3. Continued Momentum only applied to Tier 1 facilities

# Results: Tier 1 – Estimated Statewide Change in Demand

Total change in demand across the Commonwealth is estimated by projecting the base year volume forward using the ‘continued momentum’ methodology.

Statewide Change in Demand Through 2017 by Service<sup>1,2,3</sup>



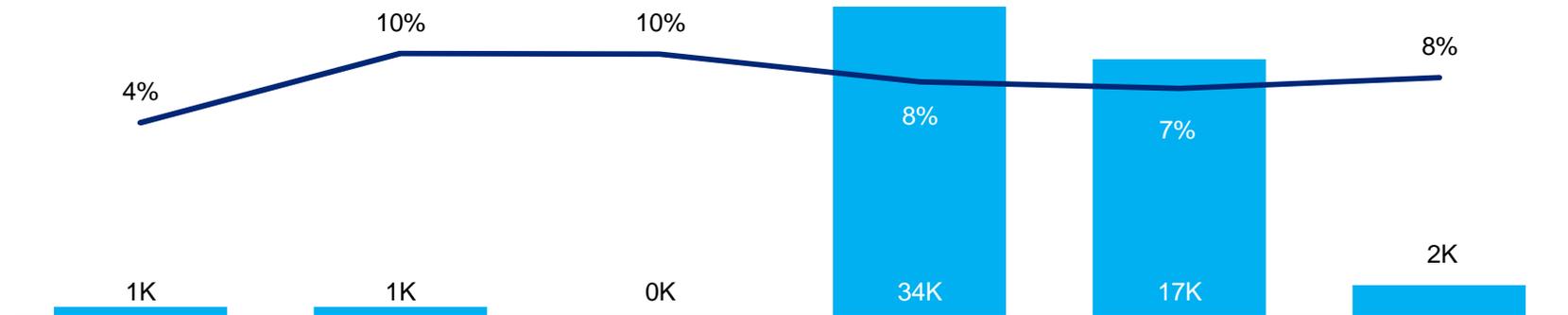
Total Change %	Acute Care	Comp. Rehab	Psych Hospital	PRTF	Nursing Facility	Home Health All	Home Health 65+	Hospice	Res. Hospice	Cardiac Cath	ASC	CD	PDN
Range <sup>4</sup>	-4% to -6%	+14% to +24%	+13% to +21%	+104% to +173%	-1% to -1%	+11% to +18%	+15% to +25%	+29% to +49%	+13% to +21%	+5% to +9%	+8% to +14%	+24% to +40%	+3% to +5%
Unit	Discharges	Discharges	Discharges	Discharges	Pt. Days	Pts Served	Pts Served	Admissions	Admissions	Procedures	Surgeries	Discharges	Admissions

1. Commonwealth future demand projected by trending out change in utilization patterns ('continued momentum' methodology)  
 2. Coverage shifts not included for Nursing Facility, Home Health 65+, and Hospice, as services assumed to already be covered for population 65+  
 3. The continued momentum is an aggregate value that results out of the accumulation of individual counties or MMCRs  
 4. Range estimates are included to demonstrate that projections are subject to a range of market uncertainties and could vary +/- 25% or more

# Results: Tier 2 – Estimated Statewide Change in Demand

For Tier 2 Facilities, no major shifts between health services is expected (steady state). The change in demand for these services is driven by population growth and coverage expansion.

Statewide Total Change in Demand<sup>1,2</sup>



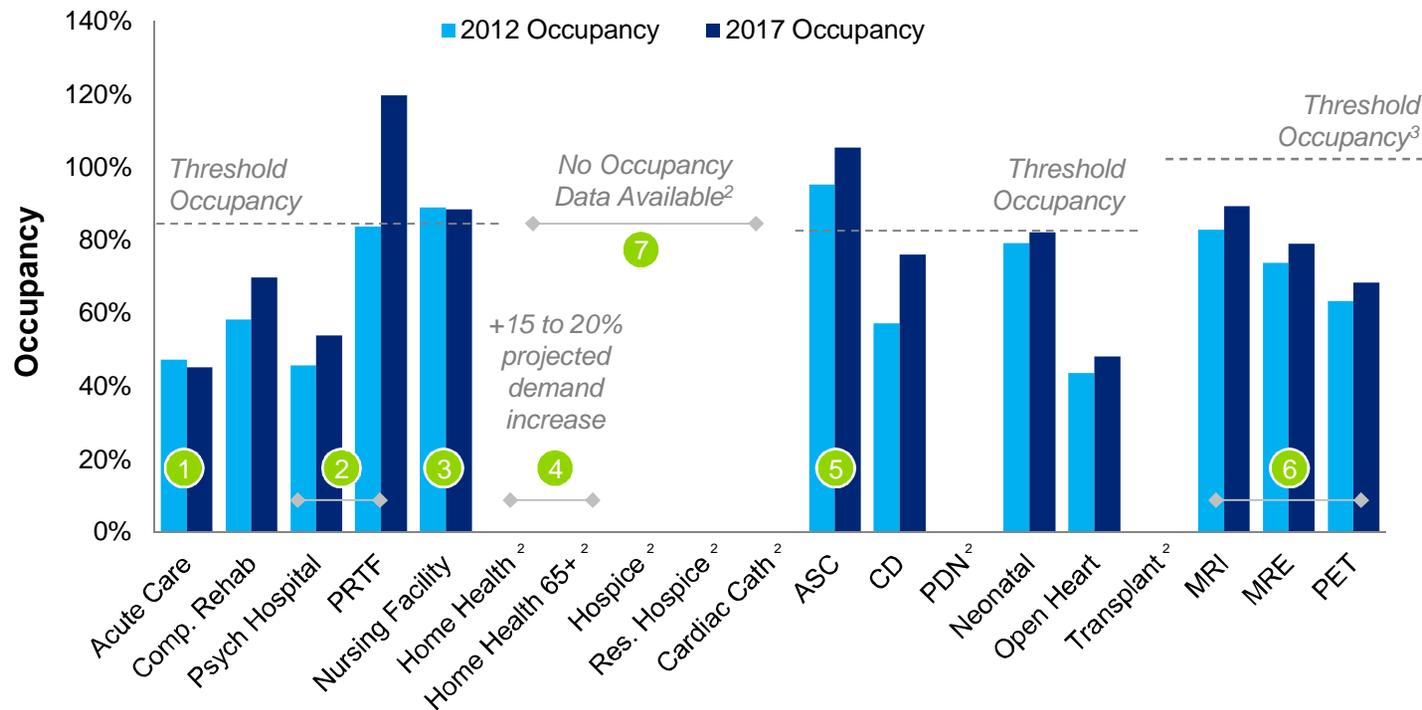
Total Change %	Neonatal	Open Heart	Transplant	MRI	MRE	PET
Range <sup>3</sup>	+3% to +5%	+8% to +13%	+8% to +13%	+6% to +10%	+5% to +9%	+6% to +10%
Unit	Discharges	Operations	Transplants	Procedures	Procedures	Procedures

1. Commonwealth future demand projected by using most recent utilization rates ('steady state' methodology)  
 2. Coverage shifts not included as services assumed to already be covered  
 3. Range estimates are included to demonstrate that projections are subject to a range of market uncertainties and could vary +/- 25% or more

# Occupancy Projections: 2012 vs. 2017

The occupancy projections bring to light capacity surplus and potential shortages; these initial observations call for further exploration of certain health services.

### Occupancy Rate by Facility Type 2012 - 2017<sup>1</sup>



### Observations on Health Services that Call for Further Exploration

1. Excess capacity in **acute care**
2. Disparities in **psychiatric care**
3. Potential shortages in **nursing facility** (current and projected)
4. High **home health** growth from shift to extramural care
5. Potential shortages in **ambulatory surgery**
6. CON policies for **MRI, PET** relative to other states
7. Availability of **health services data**

1. Tier 1 Commonwealth future demand projected by trending out change in utilization patterns ('continued momentum' methodology); Tier 2 Commonwealth future demand projected by using most recent utilization rates ('steady state' methodology)  
 2. Occupancy data is not available for services that are conducted outside of a facility, i.e. home health, as well as select facility-based services (e.g., transplant)  
 3. Based on 2013 State Health Plan specifications

# Future State Scenarios

Occupancy projections were stress tested under 3 hypothetical scenarios.

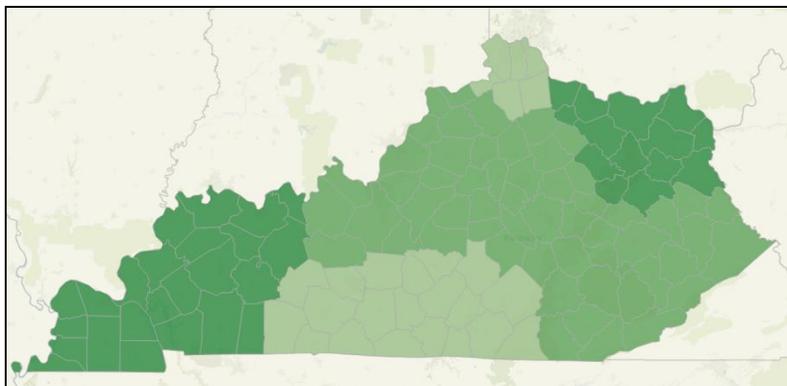
Scenario	Description	Modeling Impact <sup>1</sup>
<b>Base Case</b>	Base assumptions including coverage expansion, utilization rate change momentum, and average length of stay (ALOS) or operating room time.	<ul style="list-style-type: none"> <li>▪ Coverage expansion: +6% (inpatient) and +3% (ambulatory)</li> <li>▪ Momentum: Varies by service</li> <li>▪ ALOS: Assumed constant</li> </ul>
<b>1. Pent-up demand emerges</b>	Coverage expansion results in an unanticipated spike in utilization of health services.	<ul style="list-style-type: none"> <li>▪ Coverage expansion results in double the base case increase in demand for services.</li> </ul>
<b>2. Momentum accelerates</b>	The historical rate of change in utilization doubles over the next 5 years due to further medical advancements and high-quality case management.	<ul style="list-style-type: none"> <li>▪ Change in use rates (momentum) doubles.</li> </ul>
<b>3. Facilities care only for the sickest</b>	Healthier individuals are cared for in the ambulatory setting, and only the 'really sick' patients are treated in hospitals; types of cases treated in ambulatory setting grow more complex.	<ul style="list-style-type: none"> <li>▪ Average length of stay or operating room time increases by 25%.</li> </ul>

# Future State Scenarios – Acute Care

In each scenario, Acute Care facilities have significant excess capacity.

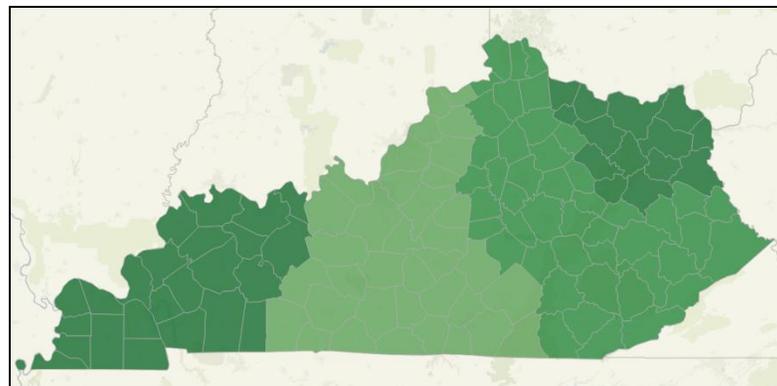
## Base Case

Coverage: +6%; Utilization -14%; ALOS 4.6 days



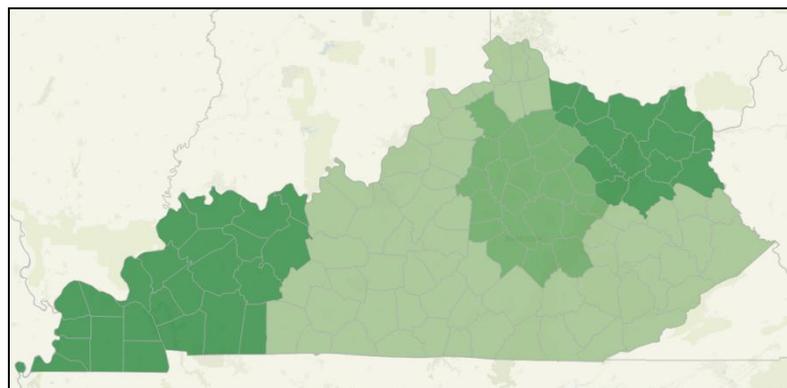
## 2. Accelerated Momentum

Change in utilization doubles (-14% → -28%)



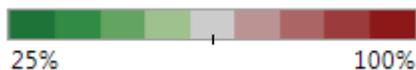
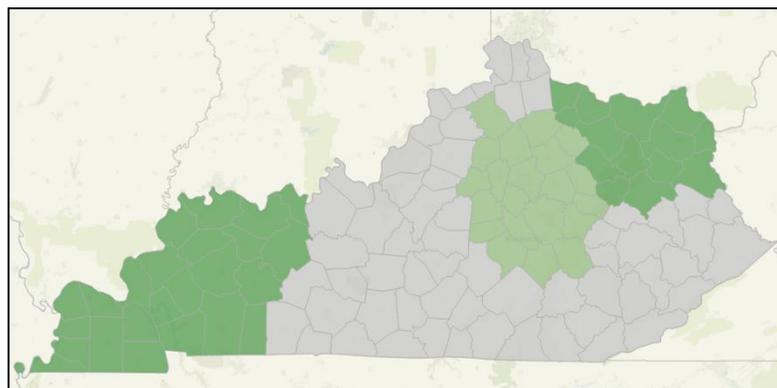
## 1. Pent-up demand emerges

Coverage impact doubles (+6% → +12%)



## 3. Hospitals care only for the sickest

ALOS increases 25% (4.6 → 5.8 days)



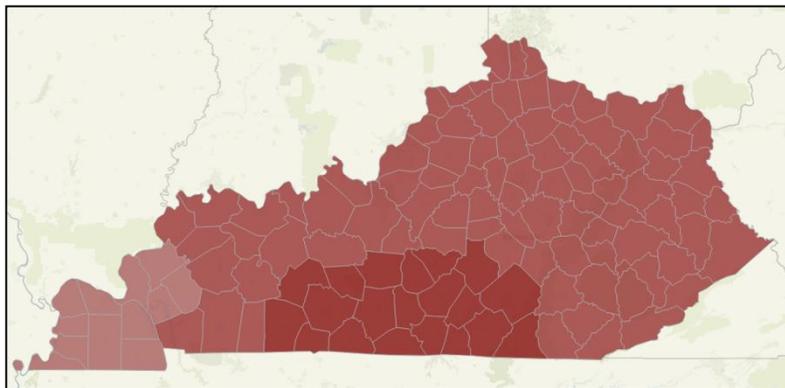
Scale indicates degree of projected occupancy – dark green is low, dark red is high occupancy, gray is intermediate

# Future State Scenarios – Nursing Facility

In each scenario, Nursing Facilities are at or above capacity.

## Base Case

Utilization -6%; ALOS 367 days

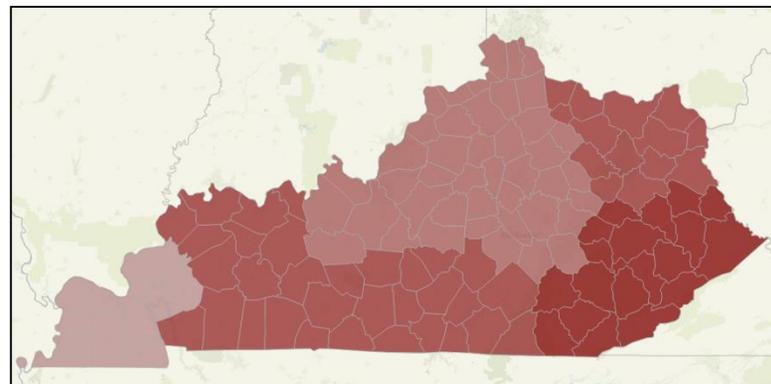


## 1. Pent-up demand emerges

*The impact of coverage expansion was not applied to nursing facility demand projections, as Medicaid already serves as ultimate guarantor for nursing care patients.*

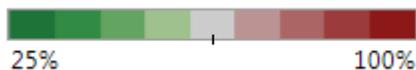
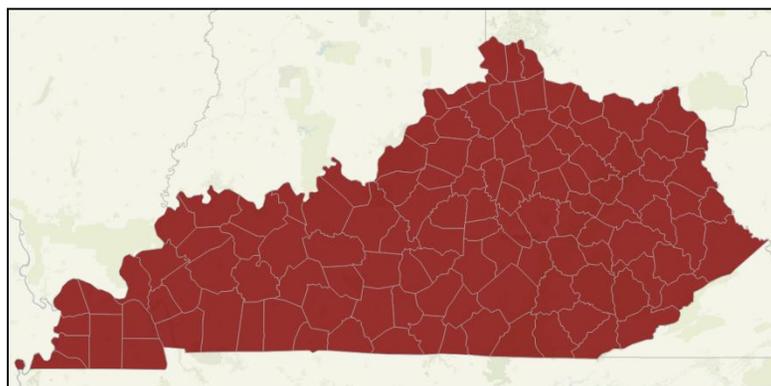
## 2. Accelerated Momentum

Change in utilization doubles (-4% → -8%)



## 3. Nursing Homes care only for the sickest

ALOS increases 25% (367 → 459 days)



Scale indicates degree of projected occupancy – dark green is low, dark red is high occupancy, gray is intermediate

# Tier 1: Comparison vs. Benchmark Data

Comparing the Commonwealth's projected demand using continued momentum assumptions still results in significant gaps toward today's national and South region benchmark.

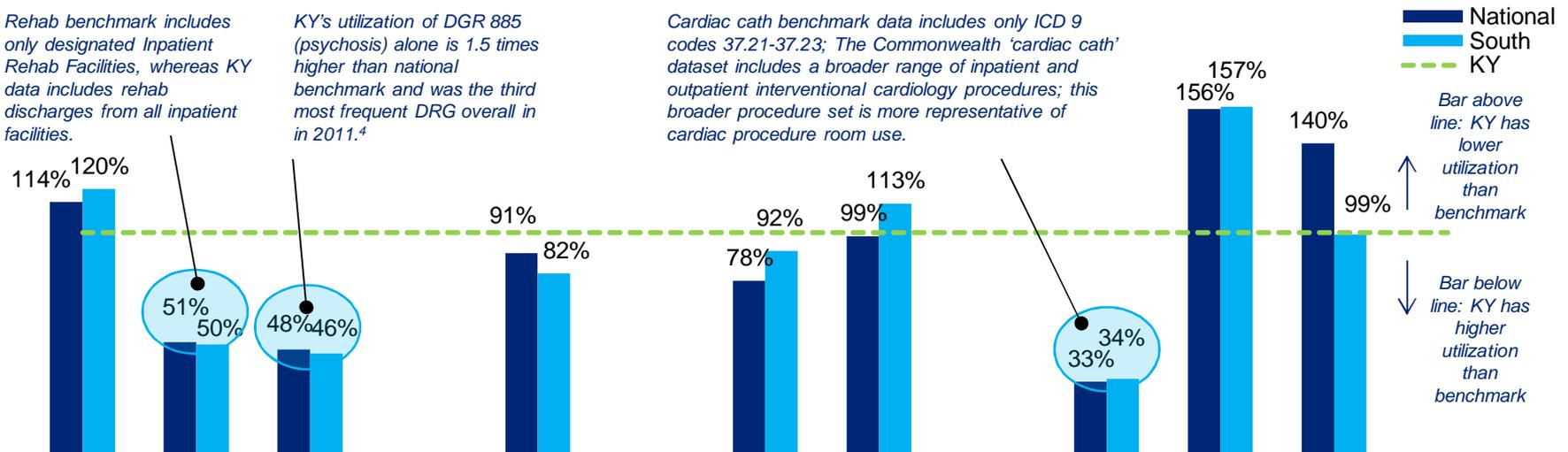
## Comparison of Projected Volume in 2017

(Commonwealth demand normalized to 100%)

Rehab benchmark includes only designated Inpatient Rehab Facilities, whereas KY data includes rehab discharges from all inpatient facilities.

KY's utilization of DGR 885 (psychosis) alone is 1.5 times higher than national benchmark and was the third most frequent DRG overall in 2011.<sup>4</sup>

Cardiac cath benchmark data includes only ICD 9 codes 37.21-37.23; The Commonwealth 'cardiac cath' dataset includes a broader range of inpatient and outpatient interventional cardiology procedures; this broader procedure set is more representative of cardiac procedure room use.



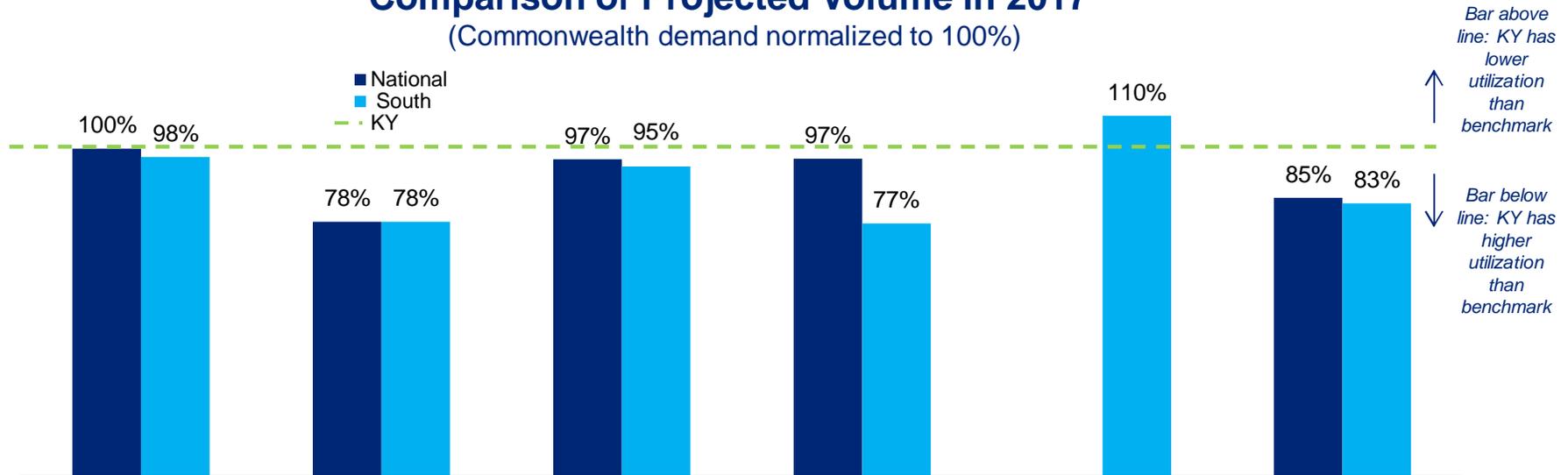
	Acute Care	Comp. Rehab <sup>2</sup>	Psych Hospital <sup>2</sup>	PRTF	Nursing Facility <sup>3</sup>	Home Health All	Home Health 65+	Hospice	Res. Hospice	Cardiac Cath <sup>2</sup>	ASC	CD	PDN
<b>KY 2017<sup>1</sup></b>	495,834	13,992	55,042	1,190	23,228	138,283	78,438	23,172	3,110	60,934	513,521	5,418	354
<b>Δ Vol. – National<sup>1</sup></b>	68,280	(6,880)	(28,847)	N/A	(2,100)	N/A	(16,989)	(330)	N/A	(40,801)	285,508	2,173	N/A
	14%	-49%	-52%	N/A	-9%	N/A	-22%	-1%	N/A	-67%	56%	40%	N/A
<b>Δ Vol. – South<sup>1</sup></b>	97,161	(7,016)	(29,791)	N/A	(4,263)	N/A	(6,397)	3,053	N/A	(39,974)	291,458	(38)	N/A
	20%	-50%	-54%	N/A	-18%	N/A	-8%	13%	N/A	-66%	57%	-1%	N/A
<b>Units</b>	Discharges	Discharges	Discharges	Discharges	Residents	Pts Served	Pts Served	Admissions	Admissions	Procedures	Surgeries	Discharges	Admissions

1. KY and National demand projections calculated by trending out change in utilization patterns ('continued momentum' methodology); South calculated using most recent benchmark ('steady state' methodology)  
 2. Differential to benchmark for rehab, psych, cardiac cath may be a result of different data reporting between Commonwealth and benchmark data, e.g. cardiac cath benchmark data includes only diagnostic cath.  
 3. For additional details, please see footnotes on benchmark overview table  
 4. Nursing facility units reflect number of residents for benchmark comparison purposes  
 5. Source: 2011 KY Administrative Claims Data Report, p. 35

## Tier 2: Comparison vs. Benchmark Data

The Commonwealth's estimated changes in demand assuming 'steady state' utilization trends are relatively similar to national and regional benchmarks.

**Comparison of Projected Volume in 2017**  
(Commonwealth demand normalized to 100%)



	Neonatal	Open Heart	Transplant	MRI	MRE	PET
KY 2017 <sup>1</sup>	17,986	6,712	466	471,500	251,341	26,924
Δ Vol. – National <sup>1</sup>	14	(1,496)	(15)	(14,759)	N/A	(4,030)
	0%	-22%	-3%	-3%	N/A	-15%
Δ Vol. - South <sup>1</sup>	(450)	(1,497)	(25)	(107,588)	25,175	(4,507)
	-2%	-22%	-5%	-23%	10%	-17%
Units	Discharges	Operations	Transplants	Procedures	Procedures	Procedures

## Facility Capacity Study

# Options for Consideration

# Facility Capacity Study

## A. Health services data

## A. Health Data Reporting: Summary

In order to provide more systematic and timely reporting, the Commonwealth should consider taking steps to improve data collection and processing in four principal areas.

1

### Data Definition

*Recommendations to provide more information describing the health services reported in the annual survey reports*

2

### Data Organization

*Recommendations to group data by geographies and other general formatting suggestions for health services reports*

3

### Data Consistency

*Recommendations to improve uniformity of data and consistency of reporting year over year*

4

### Dataset Expansion

*Recommendations to collect and report additional data beyond current dataset, e.g. quality metrics, patient origin, etc.*

## Facility Capacity Study

# B. Acute Care Services

## B. Acute Care: Summary and Recommendations

### Summary of Findings

- General trends in acute care delivery suggest that ***the demand for inpatient acute services in the Commonwealth will decline by as much as 5% through 2017*** as care is transitioned to a less intensive, more cost-effective (often ambulatory) setting.
- The Commonwealth currently has ***high hospital bed capacity per population***.
- Acute care facilities are ***distributed evenly across the state***, though distribution of services varies considerably.
- While many are at low average occupancy levels, ***Critical Access Hospitals play an important role in increasing access*** by providing emergent and low acuity care where it is needed.
- Overall the question remains ***whether and how excess capacity should be addressed; one potential idea could be to repurpose acute beds as a near-term solution to address shortages in nursing and mental health facilities or to repurpose acute wards as ambulatory surgery space (along with financial incentives to support the conversion)***.

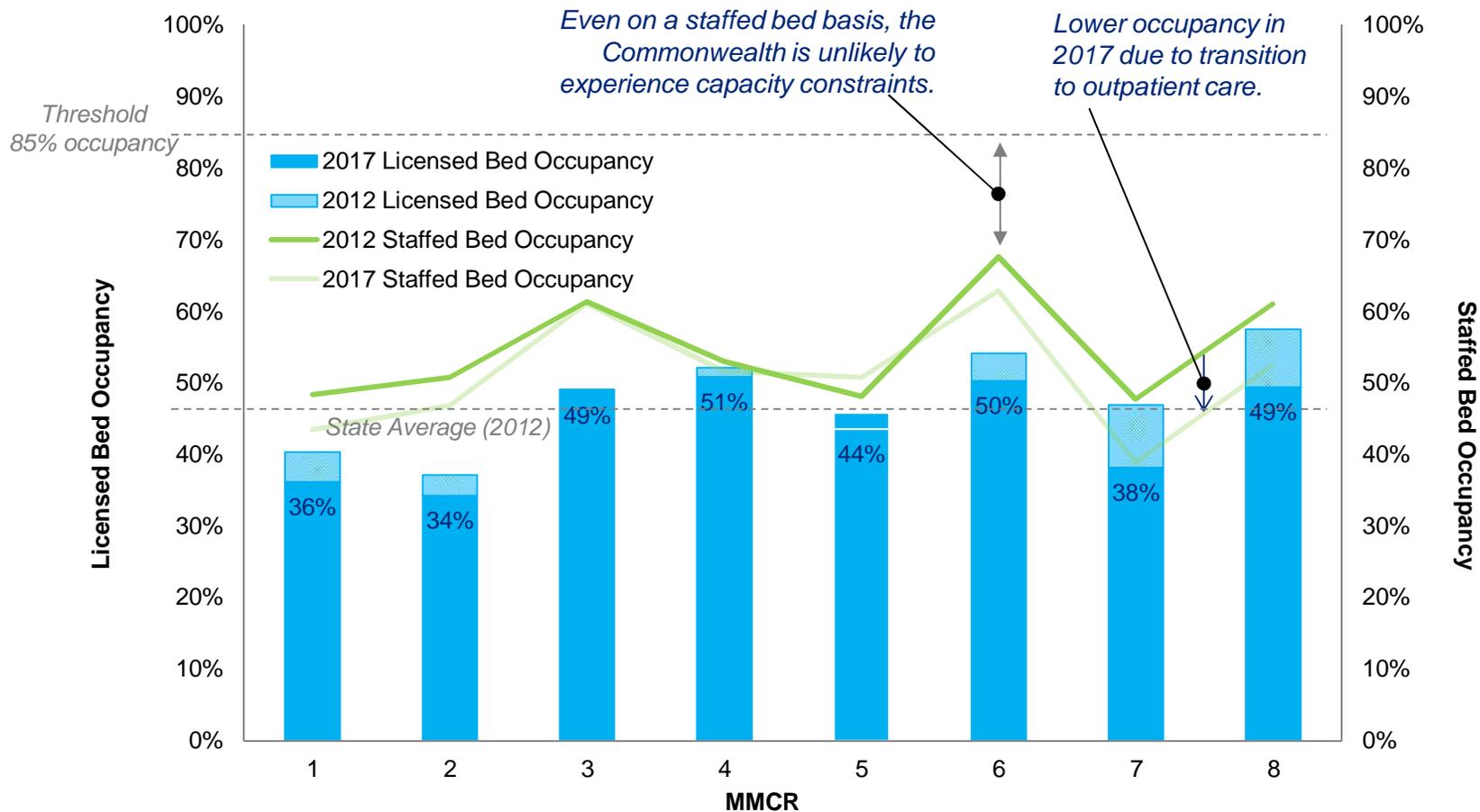
### Recommendations (Options for Consideration)

1. Manage capacity and scale
2. Promote high-performing sites
3. Reshape focus of Critical Access Hospitals

# Acute Care: Occupancy by MMCR

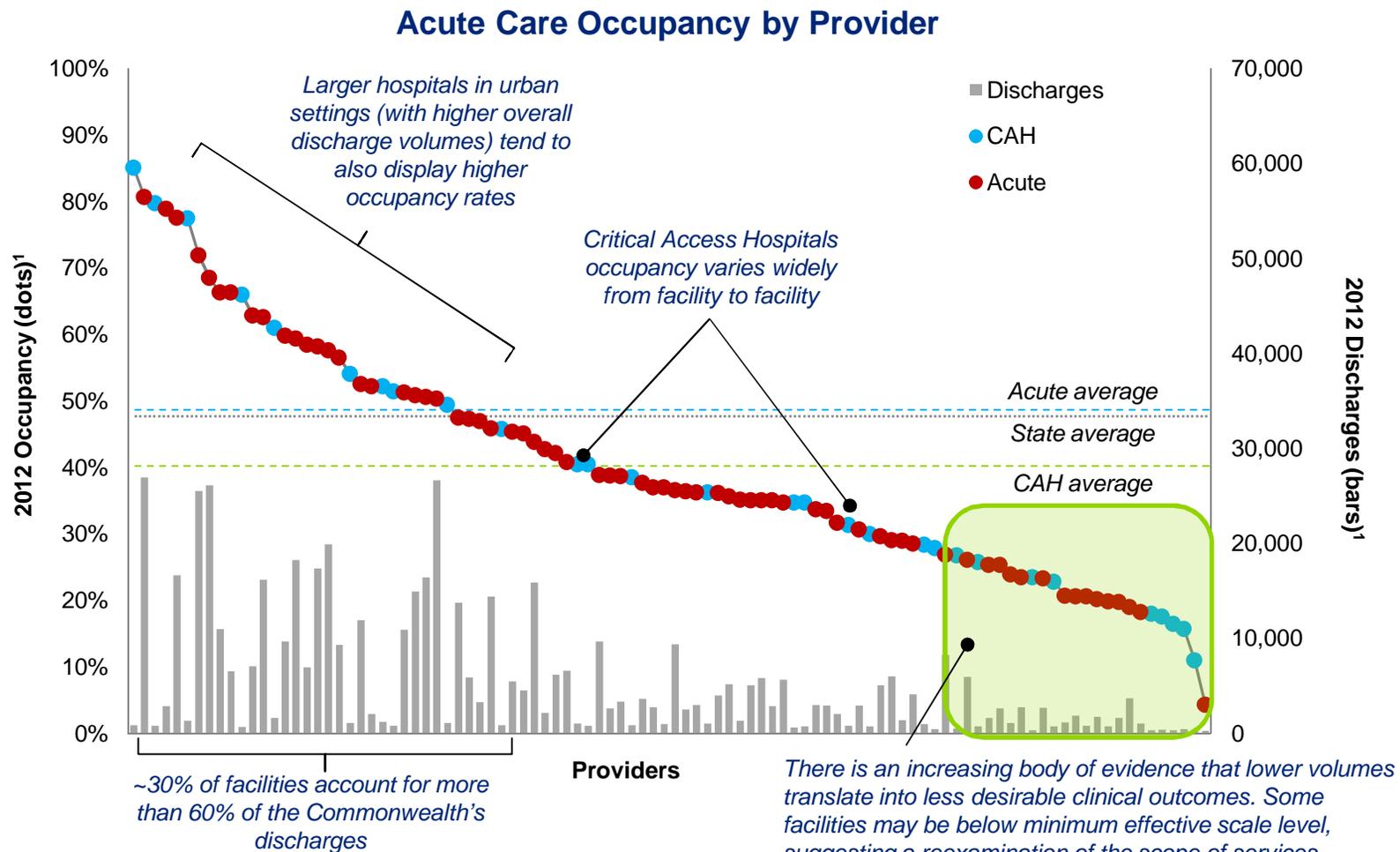
There is excess acute bed capacity across the Commonwealth today and anticipated shifts to ambulatory care are projected to free capacity through 2017.

### Acute Care Occupancy by MMCR<sup>1</sup>



# Acute Care: Occupancy by Provider

A minority of facilities account for the majority of discharges; some facilities appear to have consistently low occupancy which could potentially compromise quality of care.

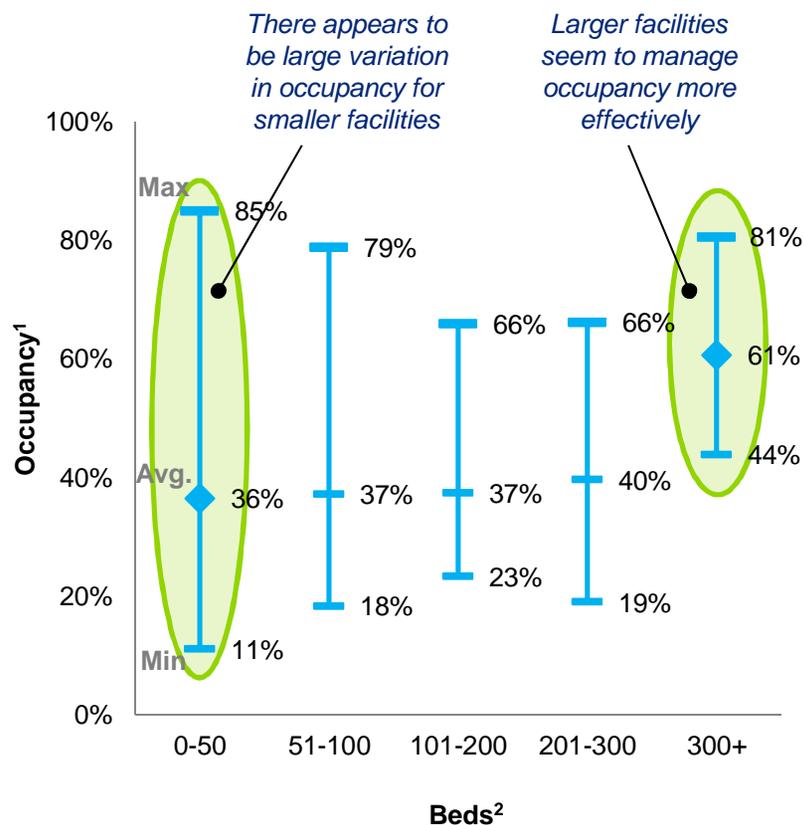


1. Occupancy and discharges based on 2012 Annual Hospital Utilization and Services Report  
 2. Citations: "Quality of Care and Patient Outcomes in Critical Access Rural Hospitals," Karen E. Joynt, Yael Harris, E. John Orav, Ashish K. Jha, Journal of the American Medical Association, July 6, 2011; Hospital Volume and 30-Day Mortality for Three Common Medical Conditions," Joseph S. Ross, M.D, New England Journal of Medicine, March 25, 2010

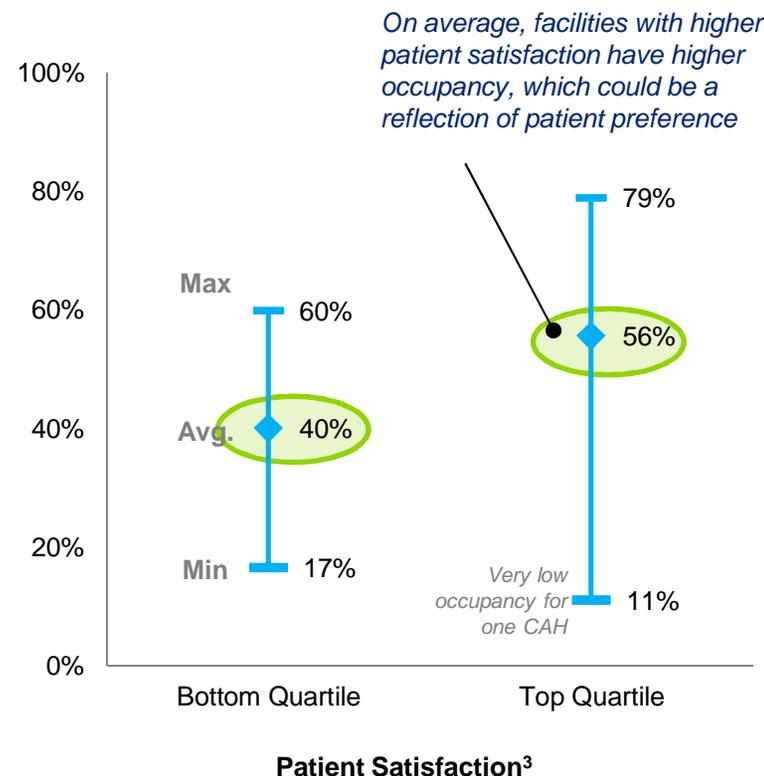
# Acute Care: Impact of Pt. Satisfaction on Choice **Deloitte.**

An efficient care model aims to drive volume to providers that have efficiencies of scale, higher quality/outcomes, and higher patient satisfaction levels – while also maintaining the balance with access to common health services in geographic proximity.

## Provider Scale & Occupancy



## Patient Satisfaction & Occupancy



# Acute Care: Handling Excess Capacity

Taking excess acute care capacity offline is an option that others have explored in the past, but finding the applicable capacity level and distribution can be challenging.

## Objective of Berger Commission<sup>1</sup>

- Facing similarly low occupancy rates (low 60%), the Berger Commission proposed taking capacity offline in the State of New York in 2006<sup>2</sup>.
- The objective was to improve the quality and affordability of New York’s health care system and make it more responsive to current health care circumstances.

## Challenges and Takeaways of Reducing Capacity

- Capacity and staffing should be considered together – An excess bed situation should not unequivocally be equated to an excess staff situation, as many facilities may actually be understaffed in their current configuration.
- Staff re-training is not a simple task – Displacement of nurses from general care to specialty care could exacerbate the nursing shortage. Many nurses will require new education, not just “retraining” to perform effectively in new specialty care settings.
- Emergency contingencies should be planned for – Geographical and other concerns should be taken into account when conducting this “rationalization”. For example, when Hurricane Sandy hit, there were insufficient beds to transfer patients between and out of Manhattan hospitals that were initially deemed as having “too many” beds in case of an emergency. The plans had assumed access to bridges and tunnels would be intact, which did not prove true.
- Lowering capacity has saving potential – The NYC state legislature forecasted annual Medicaid savings alone to be around \$249M while improving the quality of health care<sup>3</sup>.

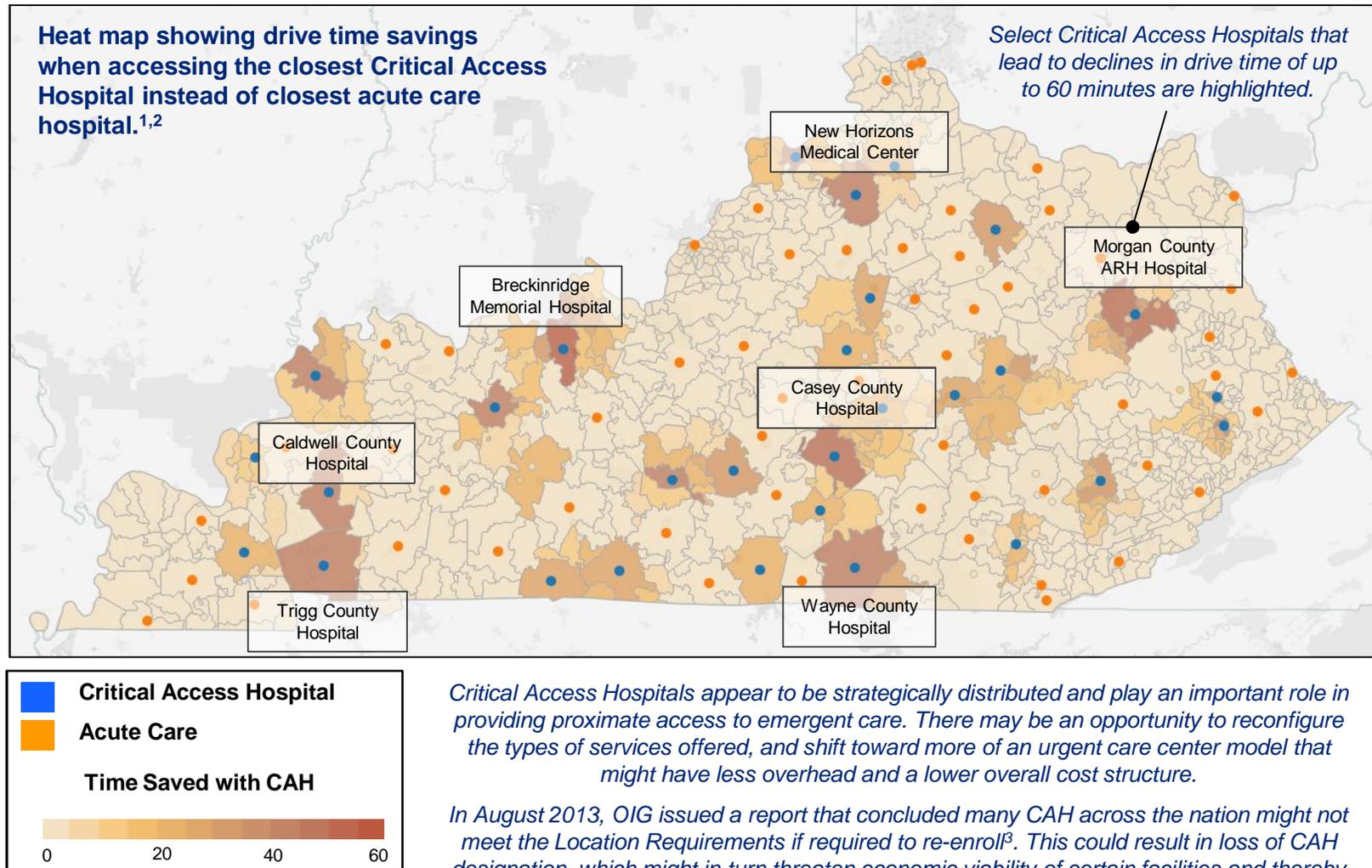
1. “A Plan to Stabilize and Strengthen New York’s Health Care System: Final Report of the Commission on Health Care Facilities in the 21st Century.” (2006). Accessed at: <http://www.nyhealthcarecommission.org/docs/final/commissionfinalreport.pdf> Figure calculated based on reductions in inappropriate utilization of services due to excess capacity, avoided capital investment in underutilized facilities, and leveraging the savings achieved from the reinvestment of foregoing savings into “savings-generating activities”

2. Statewide licensed bed occupancy fell from 83% to 65% from 1983 to 2004

3. “A Plan to Stabilize and Strengthen New York’s Health Care System: Final Report of the Commission on Health Care Facilities in the 21st Century.” (2006). Figure calculated based on reductions in inappropriate utilization of services due to excess capacity, avoided capital investment in underutilized facilities, and leveraging the savings achieved from the reinvestment of foregoing savings into “savings-generating activities”

# Acute Care: Time Saved with Critical Access Hospitals

Some areas may face geographic barriers to access emergent care should Critical Access Hospitals be closed.



1. Maps use administrative claims data; includes acute care and critical access patient admissions from 2012  
 2. Drive time was calculated as distance between facility zip codes using GoogleMaps®  
 3. Source: HHS, OIG, Report OEI-05-12-00080

## Facility Capacity Study

# C. Nursing Facilities & Home Health

# C. Nursing Facilities and Home Health: Summary 1/2

## Summary of Findings

- Nursing care is a **major component of state Medicaid budgets**, second only to acute care.
- Nursing facility **geographic distribution generally follows population**, but shortage areas exist.
- Since 2008, the nursing care **rebalancing programs** and other waiver-based programs have started to alleviate the nursing facility shortage by shifting patients from institutions to community based programs.
- Given capacity constraints, there is potentially **unmet demand for nursing care today**; rebalancing efforts **may not reduce total utilization in the short term**, but rather make space for pent-up demand.
- Historic allocation of **Medicaid spend still indicates a bias toward inpatient nursing care**.

## Recommendations (Options for Consideration)

### 1. Nursing Facilities

More explicitly evaluating the care continuum across acute inpatient, long-term facility-based, and home and community based services can offer avenues to rebalance locus of care and alleviate capacity constraints in nursing facilities:

- a. Explore whether additional community based programs could help further reduce re-institutionalization rates of Kentucky Transitions and waiver participants (e.g., expand existing community based services to reflect services offered by other states).
- b. Evaluate whether the Commonwealth's expenditure on waiver programs on a per participant basis is commensurate to the health requirements of the elderly and disabled population.
- c. Commission a study to determine whether nursing facility capacity constraints are delaying discharges of nursing patients from acute facilities.
- d. Consider incorporating long-term care in Medicaid Managed Care, and provide financial incentives to health plans to expand home and community based services and public health programs.
- e. Explore opportunities to coordinate care for dual eligible population, e.g. balance site of care between long-term care facilities (a cost to Medicaid) and acute care facilities (a cost to Medicare).

# C. Nursing Facilities and Home Health: Summary 2/2

## Recommendations (Options for Consideration)

### 2. Home Health

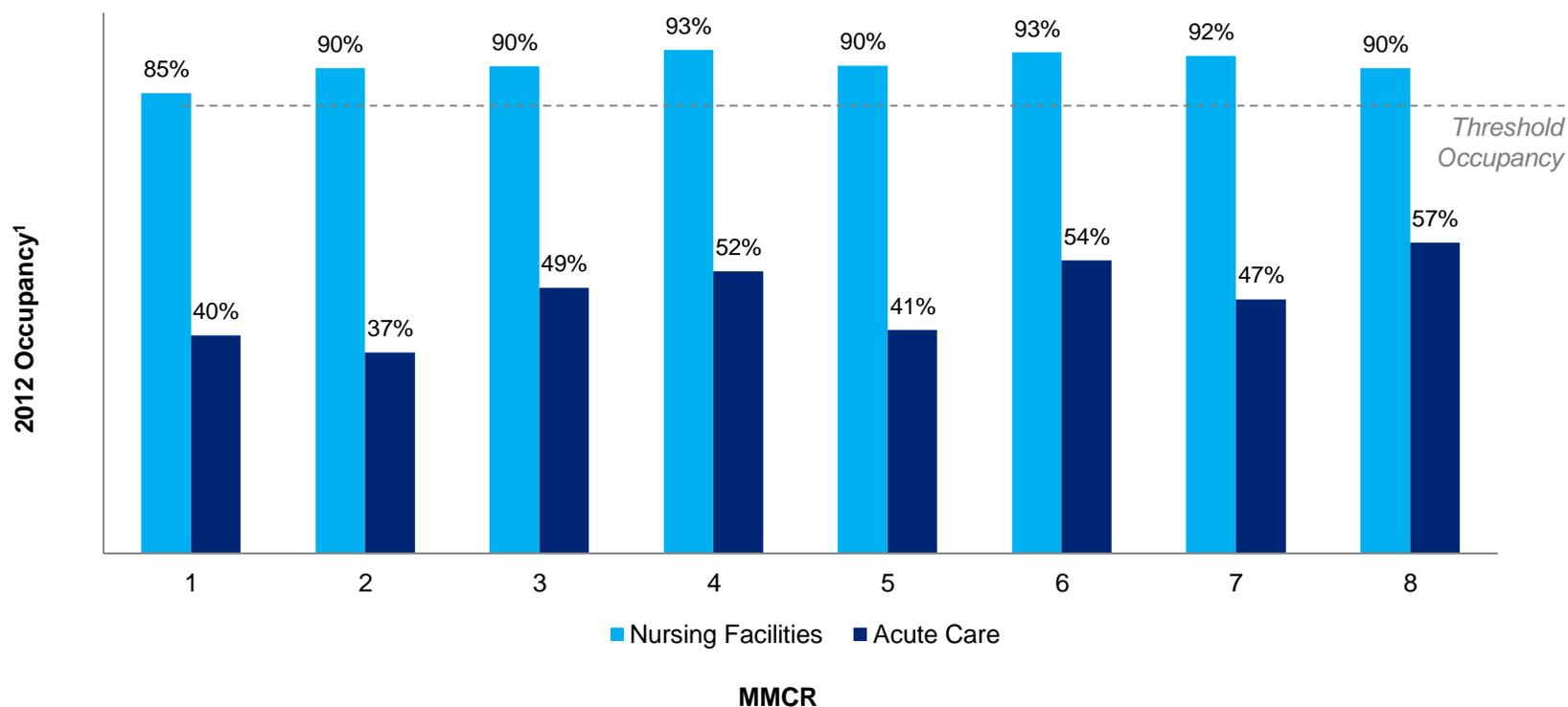
Strengthen home health and other community based services to facilitate transitions and reduce readmission to facility-based care, and consider avenues to encourage standardization of home health services:

- a. Explore avenues to better match patients' conditions with the suitable tier of medical care (home care, nursing facility care, acute care setting).
- b. Create economic incentives through higher reimbursement for home and community based services.
- c. Promote expansion of home health agencies into areas that have been identified as underserved, or consider suspending / discontinuing CON program for home health, similar to some contiguous states
- d. Develop mechanisms to improve leading practices for home health services to achieve higher consistency of care across the populations served.
- e. Explore avenues to further deploy technology advances for home care (e.g., tele-health hub/spoke sites and remote monitoring).

# Nursing Facilities: Occupancy by MMCR

Measures to constrain capacity have resulted in consistently high utilization across MMCRs; nursing facilities have operated at or close to capacity for the past decade.

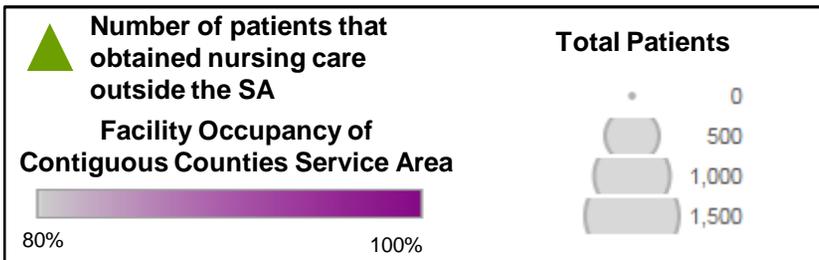
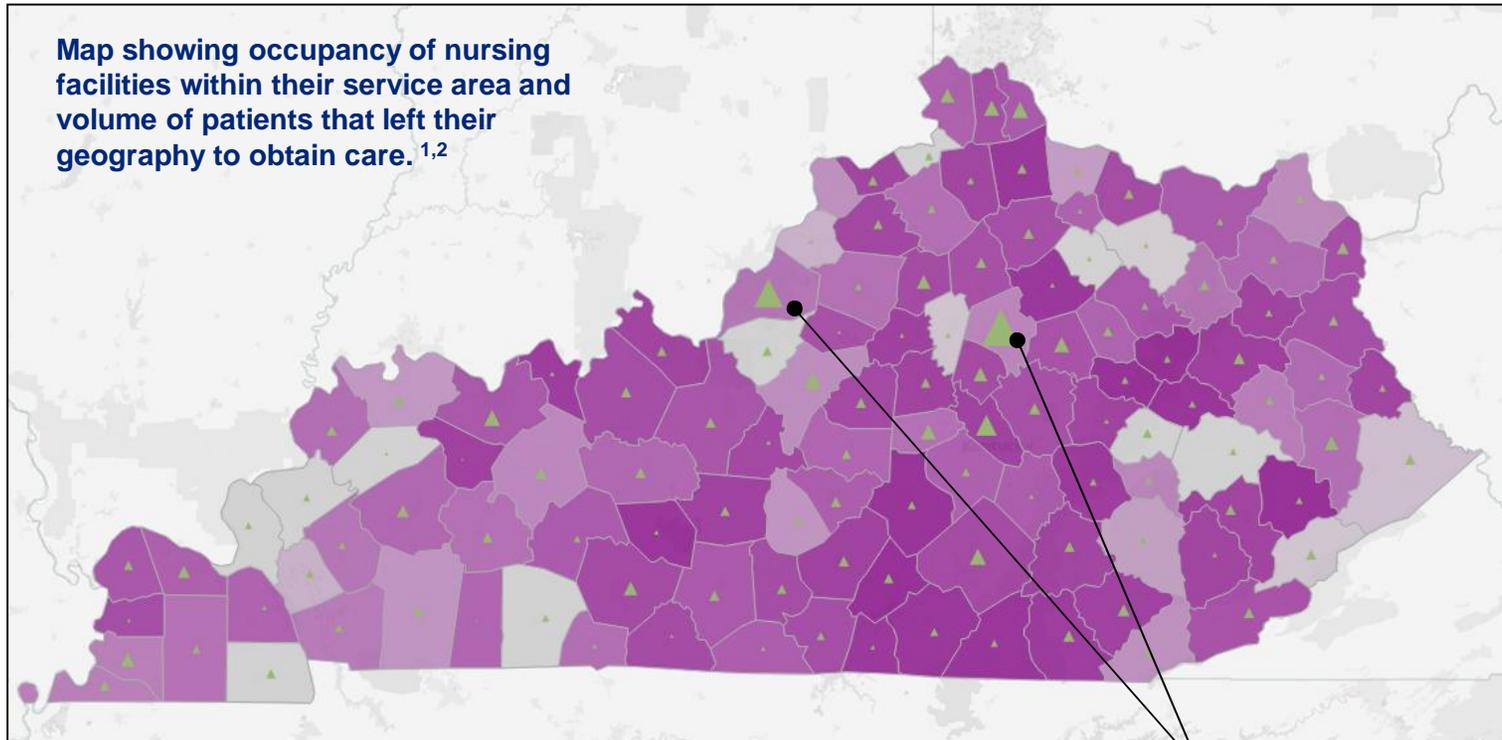
**Occupancy Rates for Nursing and Acute Care by MMCR (2012)**



*High facility occupancy levels can be an indicator of unmet demand in the population (some patients are never admitted to a facility because there is no free bed).*

# Nursing Facilities: Care Obtained Outside Service Area

Due to capacity constraints, it is not uncommon for patients to obtain care outside of their immediate geography.



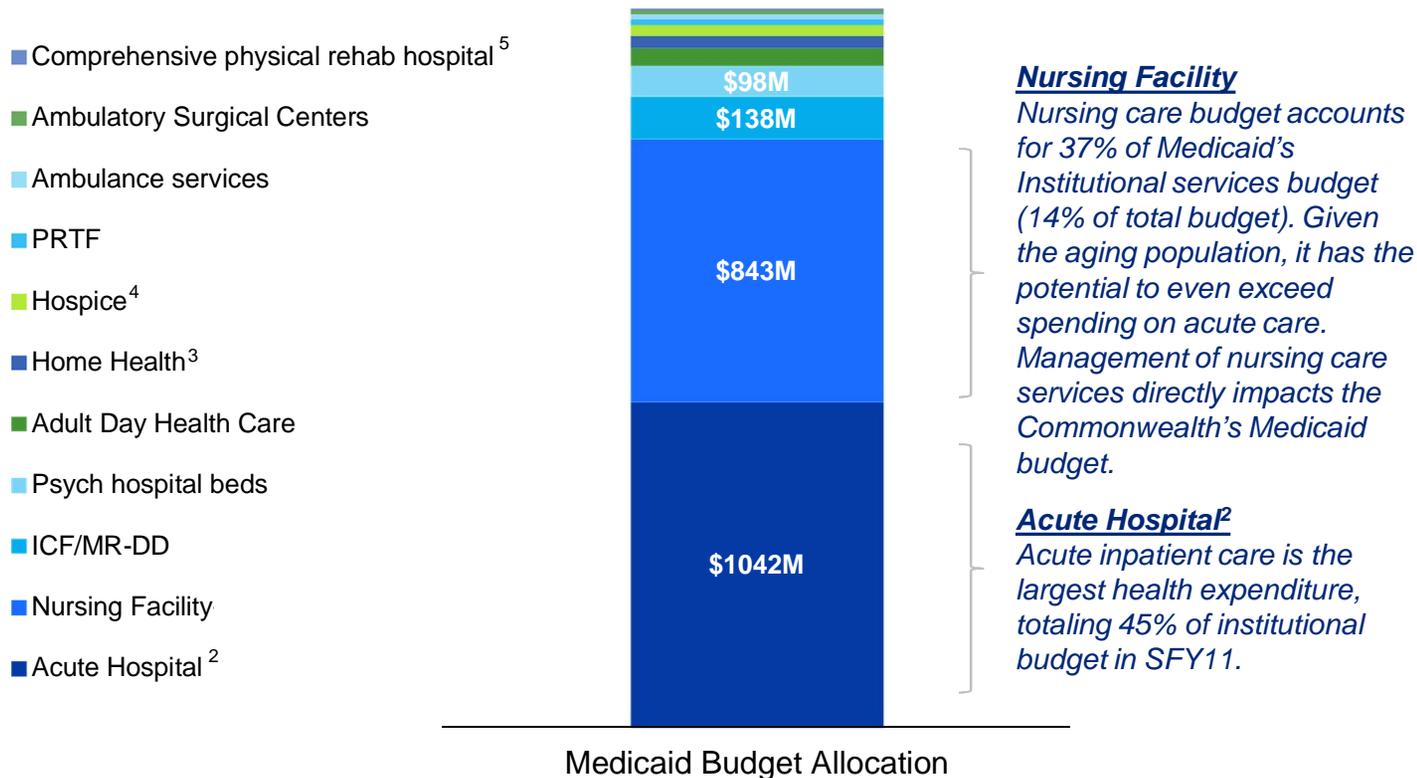
*The large metro areas have more nursing facility capacity constraints than rural areas, as seen by high volumes of patients obtaining nursing care outside the service area (larger triangles).*

*Note: Occupancy for each county is calculated as the potential patient days for each county's service area relative to the effective patient days provided in 2012. A county's service area includes its contiguous counties.*

# Nursing Facilities: Impact on State Medicaid Budget

Nursing care budget was the second largest budget item in SFY11 and has the potential to materially drive the total Medicaid budget.

**Commonwealth Medicaid Budget  
for Select Institutional Services SFY11<sup>1</sup>**



Note: The Commonwealth's Medicaid budget in 2011 was \$5.9B.  
The chart represents select institutional services only.

1. Source: Figures based on DMS's routine reporting to legislature for SFY11 provided by KHBE team member  
 2. Acute care budget includes rehab hospitals  
 3. Home Health does not include waiver services  
 4. Hospice care includes both hospice and residential hospice  
 5. Comprehensive rehab data only includes Rehab Distinct Parts

# Nursing Facilities: Rebalancing Program

The Commonwealth has embarked on a CMS-sponsored rebalancing program to alleviate capacity constraints / reduce reliance on institutional services.

## Overview of Rebalancing Program

- The Commonwealth’s nursing facilities have operated at or close to capacity for the past decade (Statewide occupancy 89-92%).<sup>1</sup>
- The Commonwealth embarked on a pilot program, Kentucky Transitions, in 2007 with the intent to shift institutionalized patients to community settings.<sup>2</sup>
- Kentucky Transitions started as a demonstration program funded by CMS’ Money Follows the Person Demonstration grant with the objective of deinstitutionalizing long term care (ACA extended the program through 2016).<sup>4,5</sup>
- The Commonwealth of KY has a range of additional programs and waivers in place.<sup>3</sup>
- There is potentially unmet demand for nursing care today; rebalancing efforts may, therefore, not reduce total utilization in the short term, but rather create space to serve pent-up demand.

## Other Waiver Programs

ABI	Acquired Brain Injury Waiver
ABI/LTC	Acquired Brain Injury and Long-Term Care Waiver
HCB	Home and Community Based Waiver Services
MPW	Michelle P. Waiver Services
MIIW	Model II Waiver
SCL	Supports for Community Living Waiver Services

1. Source: Kentucky Annual Long-Term Care Services Report, 2011  
 2. Source: Kentucky Transitions Frequently Asked Questions, 2008  
 3. Factors beyond the Kentucky Transitions program may also be contributing to high home health utilization  
 4. Source: Money Follows the Person Rebalancing Demonstration: Overview of State Grantee Progress, January 2010 to June 2010, July 2010 to Dec. 2010, January 2011 to June 2011 & July 2011 to December 2011 reports  
 5. Reinstitutionalized is defined as "any admission to hospital, nursing home, intermediate care facility for the intellectually and developmentally disabled (ICF-ID), or institution for mental disease, regardless of length of stay"



# Home and Community Based Services

The Commonwealth has an opportunity to expand waiver programs for the elderly, both in regards to services offered and in regard to total investment in the programs.

Home Health Services <sup>1,2</sup>	KY	FL	OH	IN
• Adult Day Health Care	✓	✓	✓	✓
• Assessment/Reassessment	✓	✗	✗	✗
• Assisted Living	✗	✓	✓	✓
• Attendant Care	✓	✓	✓	✓
• Case Management	✓	✗	✗	✓
• Chore	✗	✓	✓	✗
• Emergency Response Services	✗	✓	✓	✓
• Financial Management Services	✓	✓	✗	✗
• Home Adaptations	✓	✓	✓	✓
• Home Support Services (non medical)	✓	✓	✓	✗
• Home Delivered Meals	✗	✓	✓	✓
• Home Medical Equipment and Supplies	✗	✓	✓	✓
• Homemaker	✓	✓	✓	✓
• Nutritional Consultation	✗	✗	✗	✓
• OT	✓	✓	✗	✗
• Personal Care	✓	✓	✓	✗
• Pest Control	✗	✓	✗	✓
• PT	✓	✓	✗	✗
• Respite Care Services	✓	✓	✓	✓
• Speech Therapy	✓	✗	✗	✗
• Transportation	✗	✓	✓	✓
<b>Total Expenditures on Waiver Programs for "Aged" and "Aged Disabled" <sup>9</sup></b>	~\$72M	~\$309M	~\$377M	~\$85M
<b>Waiver Expenditures for "Aged" and "Aged Disabled" Individuals per Waiver Participant<sup>3,4,5</sup></b>	\$6,069	\$8,483	\$10,326	\$8,862

Leading States (2009)

The Commonwealth's per participant expenditures on waiver programs for aged individuals is 30% below that of FL and IN and 40% less than OH, on a per participant basis.

FL currently has a ratio of home health patient to skilled nursing patient of 4:1, whereas the Commonwealth's ratio is 2:1 (i.e. relatively more nursing facility patients in Kentucky).<sup>7</sup>

If Kentucky were to match Florida's spend per participant on community services, an additional ~\$29 million would need to be allocated to the waiver programs.<sup>8</sup>

Note

Some States offer home and health services within their Medicaid programs and not through waivers.

1. State waiver services sourced from Medicaid.gov <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/Waivers.html>; Only waivers specific to individuals 65+ were sourced.  
2. Specific names of services may differ, however, service provided is comparable (i.e. "Personal care" vs "Personal Care Aide"); Names were standardized for grouping.  
3. 1915 (c) Waiver Expenditure Data for "Aged" and "Aged and Disabled" taken from Kaiser Family Foundation, State Health Facts, 2009 Data  
4. Waiver expenditure data was multiplied from per thousand dollar amount to total dollar amount  
5. 1915 (c) Waiver Participant Data for "Aged" and "Aged and Disabled" taken from Kaiser Family Foundation, State Health Facts  
6. Medicaid Enrollee data sourced from Medicaid.gov; "Medicaid Enrollment by State" <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-State/By-State.html>  
7. Ratios calculated based on 2009 State Home Health patient and Nursing Facility patient data sourced from: The American Health Planning Association's 2011 National Directory of State CON Programs and Health Planning Agencies  
8. Additional cost was calculated using the difference of KY's and FL's 1915© waiver expenditure for "Aged" and "Aged and Disabled" services per "Aged" and "Aged and Disabled" 1915© waiver participant, then multiplying by the number of Kentucky's 1915© "Aged" and "Aged and Disabled" participants to find the incremental cost to KY's waiver program if operating similar to Florida. This incremental cost was then added to the incremental cost incurred by adjusting for differences in Medicaid enrollees. This adjustment was found by taking the difference in KY and FL 1915© waiver participants as a percent of total Medicaid enrollees, then multiplying by the number of Total KY Medicaid enrollees to find the number of additional participants needed to account for differences in Medicaid enrollment. This figure was multiplied by FL's cost for "Aged" and "Aged and Disabled" services per "Aged" and "Aged and Disabled" 1915© waiver participant to get the incremental cost incurred as a result of Medicaid enrollment differences.  
9. Sources: KY waiver program expenditure for 2009 sourced from CMS 372(S) annual report, other States sourced from Kaiser Family Foundation, 2009 report

## Facility Capacity Study

# D. Mental Health Services

## D. Mental Health: Summary and Recommendations

### Summary of Findings

- The Commonwealth has **higher utilization rate than the national benchmark** for many inpatient psychiatry services, as measured by DRGs; Kentucky also has **among the highest prevalence of serious mental health conditions** across states (5.4% of population vs. 4.6% national average).
- The **reimbursement for inpatient psychiatry care is less favorable** in the Commonwealth than in all contiguous states, which may incentivize early discharges and result in readmissions.
- **Expansion of community based programs is critical** to improve the transition of patients from facility-based acute care episodes to stable ambulatory management of chronic conditions.
- The 2013 Healthcare Workforce Capacity Study estimated a **shortage of >1,600 mental health professionals** across disciplines; an **under-resourced ambulatory care system could be one driver of the high inpatient utilization.**
- The cabinet has approved 132 additional Level II PRTF beds in 2011, in an effort to create capacity to repatriate children and adolescents that formerly obtained care outside of the Commonwealth.

### Recommendations (Options for Consideration)

1. Develop programs to increase availability, improve staffing level, and optimize mix of providers for outpatient psychiatry care.
2. Improve infrastructure and coordination between care settings for ambulatory mental health services.
3. Examine use of economic levers to improve balance between inpatient and outpatient psychiatry care.
4. In addition to the recent expansion of PRTF capacity, consider promoting PRTF through greater economic incentives.

# Mental Health: Utilization of Inpatient Psychiatry Services

The Commonwealth has a higher utilization rate than the national benchmark for many mental health DRGs.

Per 10,000				
DRG #	DRG Description	KY Use Rate <sup>1</sup>	National Use Rate <sup>2</sup>	Ratio KY to National
56	Degenerative nervous system disorders w mcc	0.7	0.8	0.9x
57	Degenerative nervous system disorders w/o mcc	4.3	3.4	1.3x
80	Non-traumatic stupor & coma w mcc	0.1	0.1	1.0x
81	Non-traumatic stupor & coma w/o mcc	0.5	0.5	1.0x
875	O.R. procedure w principal diagnoses of mental illness	0.1	0.1	1.0x
880	Acute adjustment reaction & psychosocial dysfunction	1.9	1.5	1.3x
881	Depressive neuroses	10.6	4.4	2.4x
882	Neuroses except depressive	2.8	1.6	1.8x
883	Disorders of personality & impulse control	1.1	0.5	2.2x
884	Organic disturbances & mental retardation	2.9	2.2	1.3x
885	Psychoses	55.5	38.0	1.5x
886	Behavioral & developmental disorders	2.8	0.9	3.1x
887	Other mental disorder diagnoses	0.2	0.1	2.0x
<b>Average</b>	<b>Discharges per 10,000</b>	<b>83</b>	<b>54</b>	<b>1.5x</b>

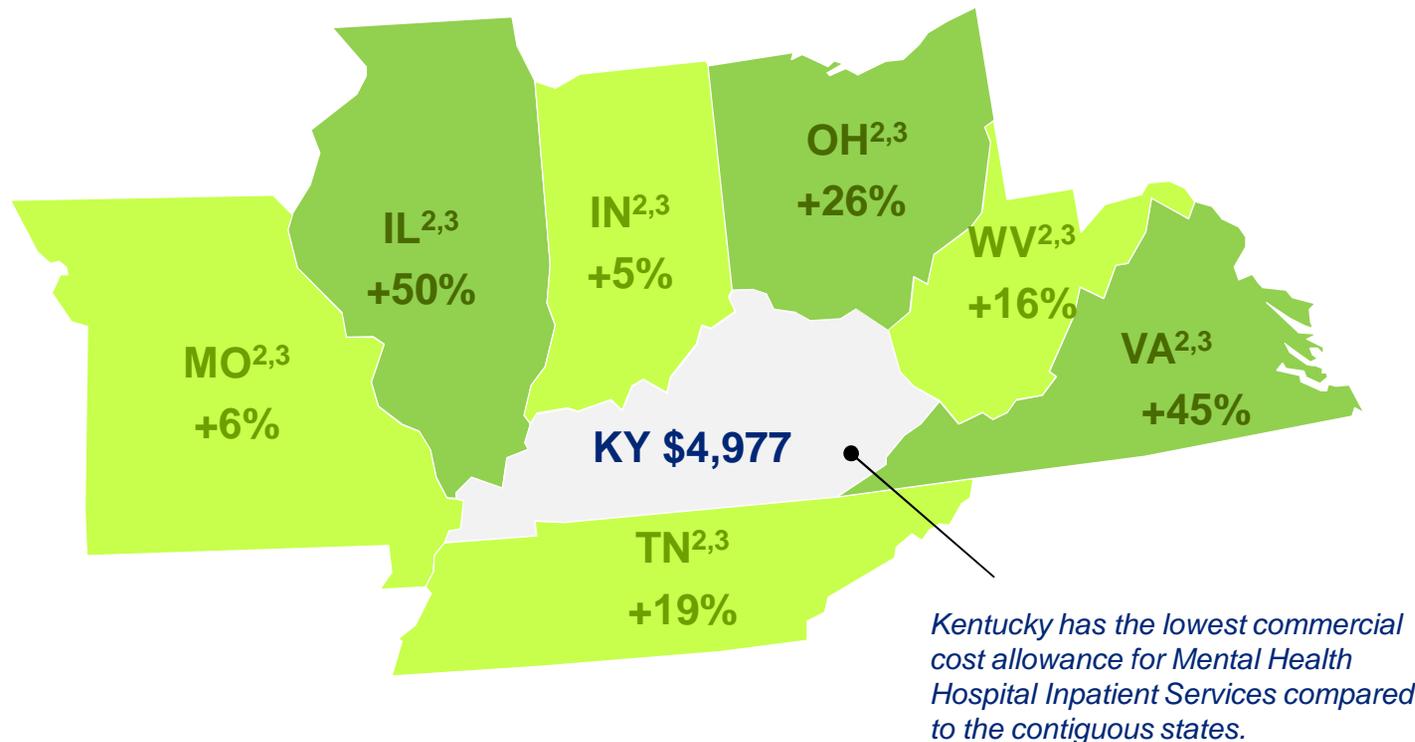
*KY appears to have a higher utilization of inpatient psychiatric care than the national benchmark. The comparatively high inpatient use rate corresponds to a higher prevalence of serious mental health conditions in Kentucky (estimated 5.4% of population compared to 4.6% national average)<sup>3</sup>*

1. Source: 2012 KY Administrative Claims Data Note: The utilization rate from admin claims data (83 per 10,000) is lower than that from Annual Hospital Survey report (107 per 10,000), among other reasons because three state psychiatric hospitals received a waiver from reporting in 2012  
 2. Source: AHRQ's Health Care Utilization Project (HCUP) 2010 data  
 3. Source: Findings from SAMHSA's 2008 and 2009 National Surveys on Drug Use and Health (NSDUHs)

# Mental Health: Facility Fee Economic Levers

Low reimbursement may incentivize quick discharges from inpatient psychiatry care; absent appropriate ambulatory follow-up, this may lead to re-hospitalizations.

**Actual Cost Allowed per Psychiatry Discharge<sup>1,2,3</sup>  
(Commercial Reimbursement)**



1. Sources: 2011 MarketScan Benchmark Data, Medical Commercial Claims Data; CMS' Table 4A.--Proposed Wage Index And Capital Geographic Adjustment Factor (GAF) For Urban Areas By CBSA And By State--Fy 2012  
 2. Actual Cost per Unit (surgery) Allowed, Wage Adjusted. Commercial reimbursement selected as proxy for overall reimbursement levels  
 3. Each state's cost per unit was wage adjusted using a calculated state-level wage index (the weighted average of MSA wage indices and MSA population)

# Mental Health: Community Based Psychiatric Treatments

Community based behavioral health initiatives could help shift the Commonwealth's current psych patient load to a community setting.

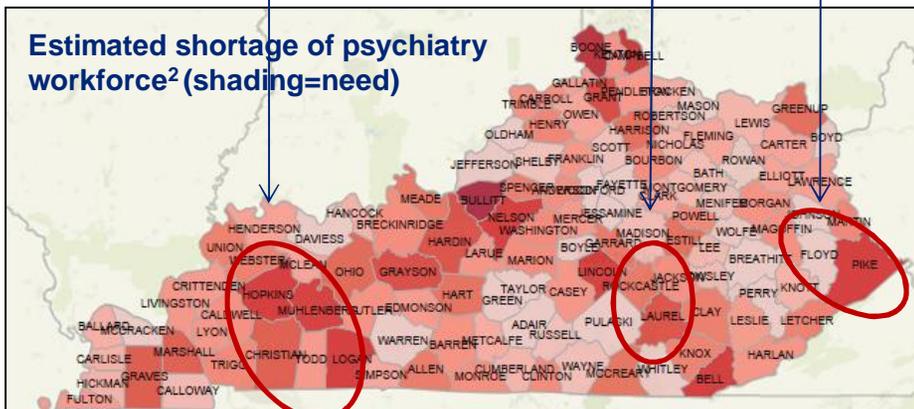
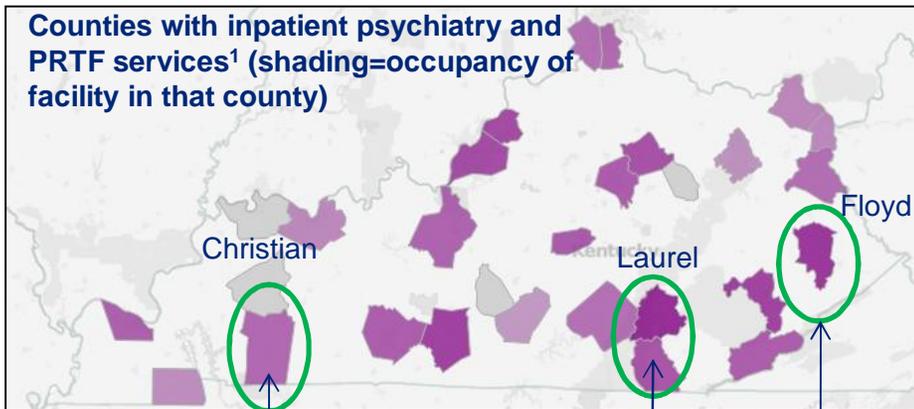
## Community Based Initiatives

<b>Improved integration of primary care with behavioral health services</b>	According to a 2010 report by the American Hospital Association (AHA), improved integration of psychiatric and primary care has led to increased detection of co-morbidities, improved treatment outcomes, and cost savings in the long run. <sup>1</sup>
<b>Tele-psychiatry</b>	<p>Tele-psychiatry has led to an increase in service access and improved diagnosis, treatment, and management of mental health diseases, especially in rural communities.<sup>1</sup></p> <ul style="list-style-type: none"><li>Alabama is creating community based collaborations to provide tele-psychiatry services to underserved communities.<sup>2</sup></li></ul> <p>The Commonwealth's Medicaid program offers reimbursement for a range of telemedicine services (Reg. 907 KRA 3:170)</p>
<b>Subsidized housing for psychiatric patients</b>	<p>States are undergoing initiatives aimed at providing affordable, permanent housing for the mentally ill in the form of: <sup>3</sup></p> <ul style="list-style-type: none"><li><i>Massachusetts Permanent Supportive Housing Program</i>: provides permanent, supportive housing to individuals with mental illness at a cost of less than 30% of income.<sup>4</sup></li><li><i>California Mental Health Services Act</i>: uses a 1% income tax on incomes of over \$1 million to provide over \$4 million towards the creation of housing for the mentally ill.<sup>5</sup></li></ul>

1. American Hospital Association, 2012 TrendWatch; Bringing Behavioral Health into the Care Continuum: Opportunities to Improve Quality, Costs, and Outcomes  
2. (2012) Ulzen, T., Williamson, L., Foster, P. P., Parris-Barnes, K.: The evolution of a Community Based Telepsychiatry Program in Rural Alabama: Lessons Learned-A Brief Report; Community Mental Health Journal.  
3. National Alliance for Mental Illness  
4. Massachusetts' Supportive Housing: <http://www.massresources.org/permanent-supportive-housing.html>  
5. October 2011, Mental Health Services Act Housing Program Semi-Annual Update, [http://www.dmh.ca.gov/News/Reports\\_and\\_Data/docs/Legislative/MHSA\\_Housing\\_Program-Oct\\_2011.pdf](http://www.dmh.ca.gov/News/Reports_and_Data/docs/Legislative/MHSA_Housing_Program-Oct_2011.pdf)

# Mental Health: Workforce Considerations

Facilities in certain counties are experiencing high occupancy levels for Inpatient Psychiatry and PRTF; many of these counties (e.g., Christian, Laurel, Floyd/Pike) are also short-staffed for mental health providers.



Note: Shortage of mental health providers was based on non-validated licensure databases

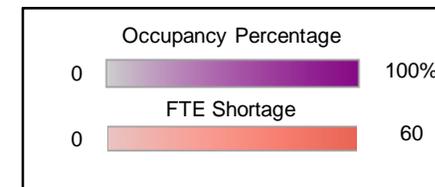
*There appears to be some relationship between counties that have high occupancy of their inpatient psychiatry facilities and surrounding counties that have a shortage of mental health providers (acknowledging a mental health facility draws patients from a service area that extends beyond just the county it is located in).*

*This could be a reflection of inefficient outpatient management of psychiatry patients who instead utilize the inpatient psych system more frequently.*

*A recent workforce capacity analysis for the Commonwealth of Kentucky estimated a shortage of 1,638 mental health providers across disciplines.<sup>2</sup>*

*The report suggested several mitigation strategies for mental health provider shortages, including.<sup>2,3</sup>*

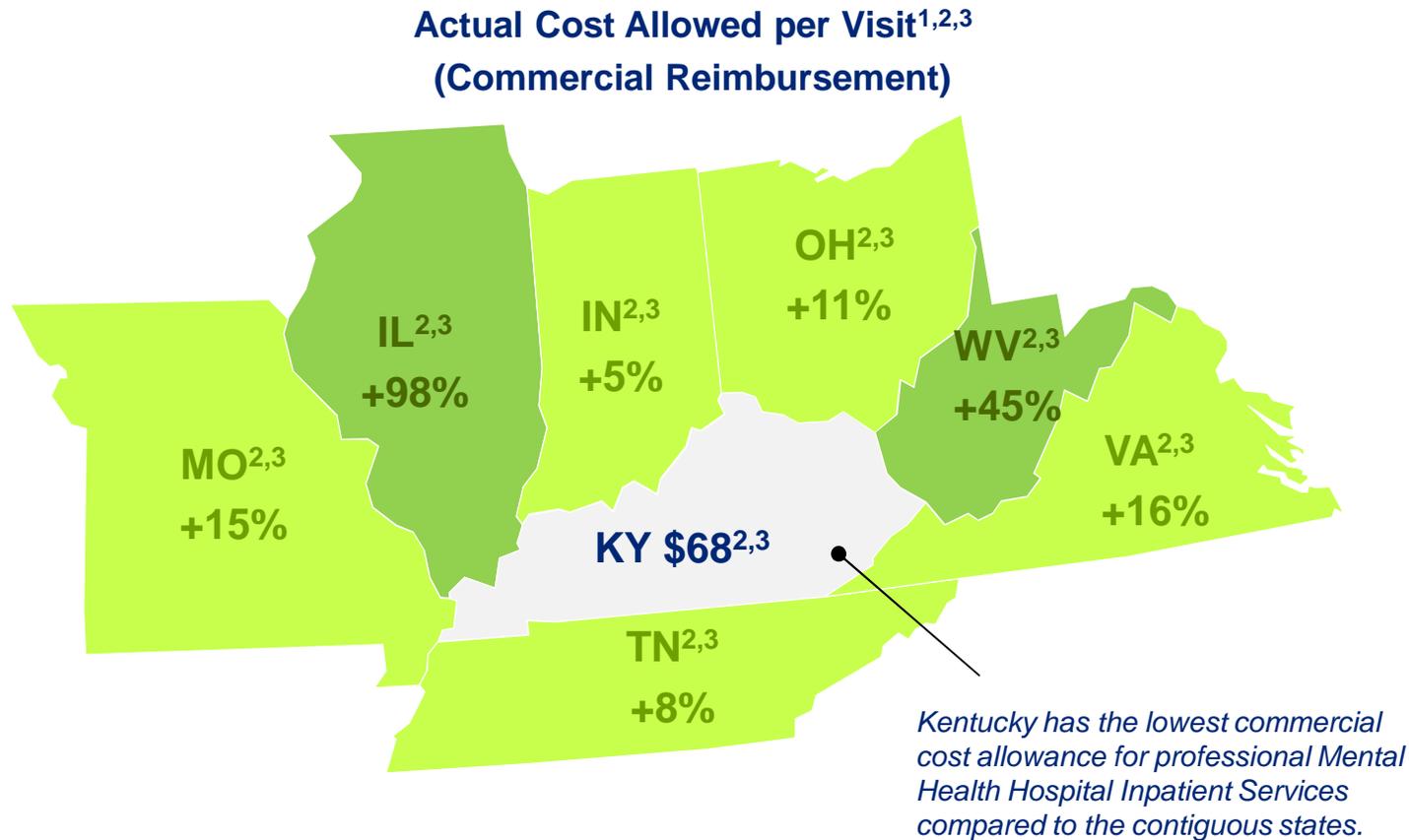
- Attracting international mental health providers
- Expanding Kentucky tele-health program for mental health services



1. Utilization data derived from 2012 Annual Hospital Utilization and Service Report; rate based on 2012 population  
 2. Map derived from The Commonwealth of Kentucky Health Care Workforce Capacity Report (March 2013); Health Providers (MHPs) include Psychologists, Licensed Clinical Social Workers (LCSWs), Licensed Professional Counselors (LPCs), Marriage and Family Therapists (MFTs), Alcohol and Drug Counselors (ADCs); note that the quality and accuracy of licensing databases were problematic and missing current practice locations  
 3. The Commonwealth is a recognized Health Professional Shortage Areas with 61 counties short a total of 154 mental health professionals in 2013 (Health Professional Shortage Area (HSPH), Health Resources Services Administration, Online tool accessed 07/20/2013)

# Mental Health: Professional Fee Economic Levers **Deloitte.**

Low reimbursement for professional fees care may contribute to the Commonwealth's shortage of mental health workforce.



1. Sources: 2011 MarketScan Benchmark Data, Medical Commercial Claims Data; CMS' Table 4A.--Proposed Wage Index And Capital Geographic Adjustment Factor (GAF) For Urban Areas By CBSA And By State--FY 2012  
 2. Actual Cost per Unit (surgery) Allowed, Wage Adjusted. Commercial reimbursement selected as proxy for overall reimbursement levels  
 3. Each state's cost per unit was wage adjusted using a calculated state-level wage index (the weighted average of MSA wage indices and MSA population)

## Facility Capacity Study

E.  
Imaging: MRI, PET

## E. Imaging: Summary and Recommendations

### Summary of Findings

- The Commonwealth **use rate for outpatient MRI and PET is comparable to national benchmarks**, suggesting appropriate usage.
- However, there are several indicators that **the CON program for MRI may no longer be serving its intended objective**.
- **Demand-side controls** such as pre-approvals and HMO models **may be more effective** than supply-side restrictions in managing MRI utilization.

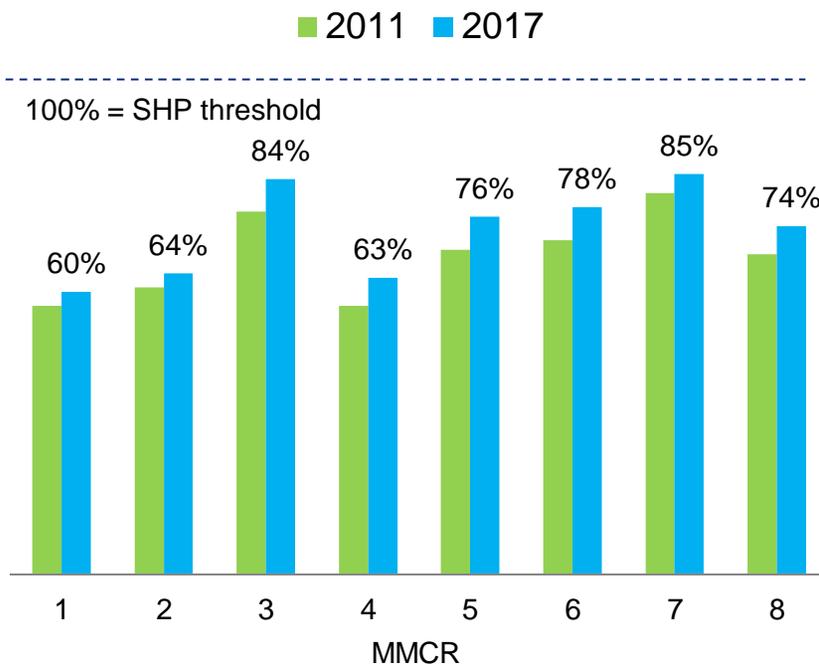
### Recommendations (Options for Consideration)

1. The Commonwealth might consider discontinuing CON regulation for MRI equipment and instead reinforce case management policies to manage demand (e.g. state-wide pre-approvals).
2. The Commonwealth may also consider de-regulating the PET market and instituting public health measures, such as case management, for PET instead.

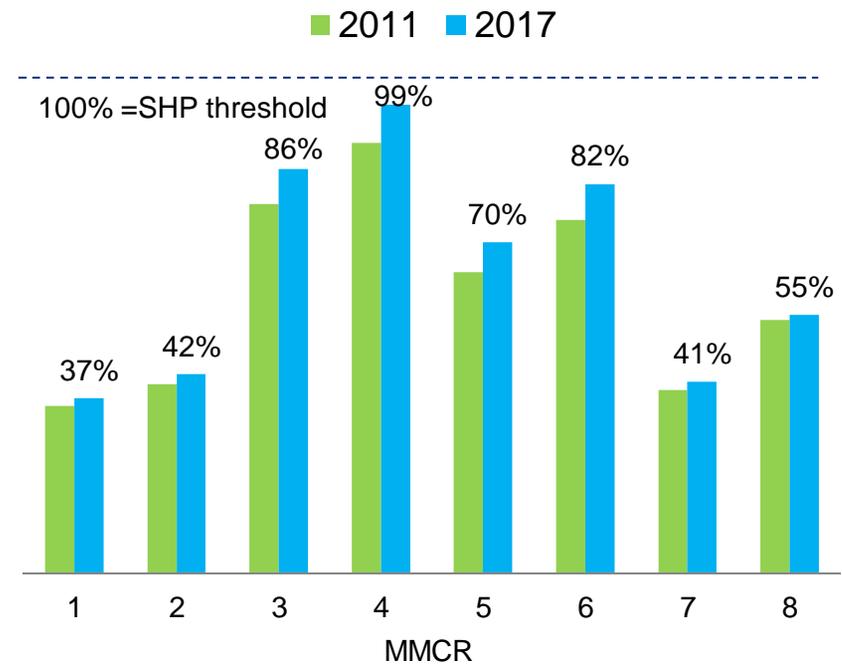
# Imaging: MRI and PET Projections

The Commonwealth's use rate of MRI and PET services is comparable to national benchmark, but there is excess capacity across MMCRs.

## Procedure Volume of Existing MRI Facilities<sup>1,2</sup>



## Procedure Volume of Existing PET Facilities<sup>1,2</sup>

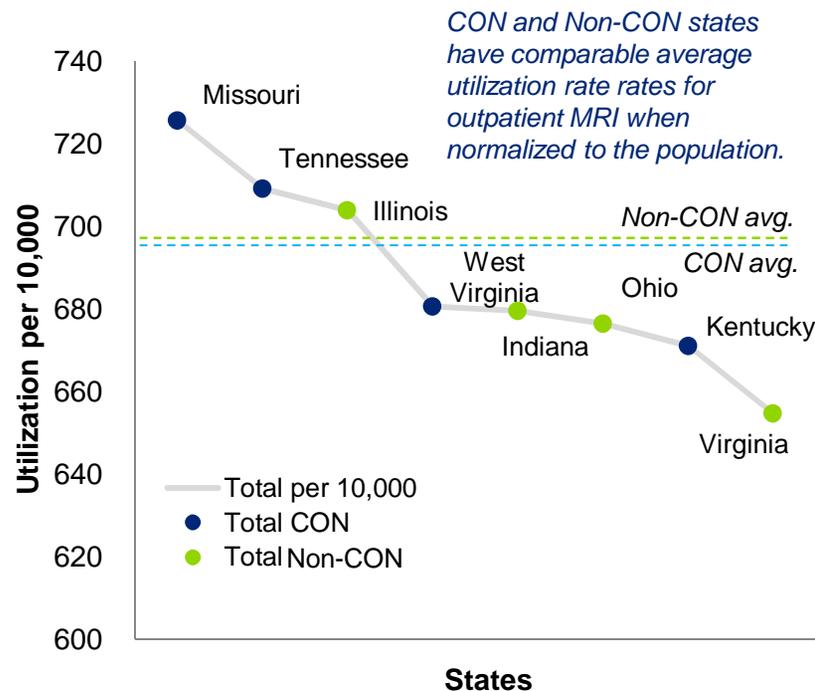


*The average procedure volume of existing MRI and PET facilities in 2017 would still be well below the minimum volume threshold set by the State Health Plan (SHP) for new applicants (100%)*

# Imaging: Impact of CON on MRI and PET

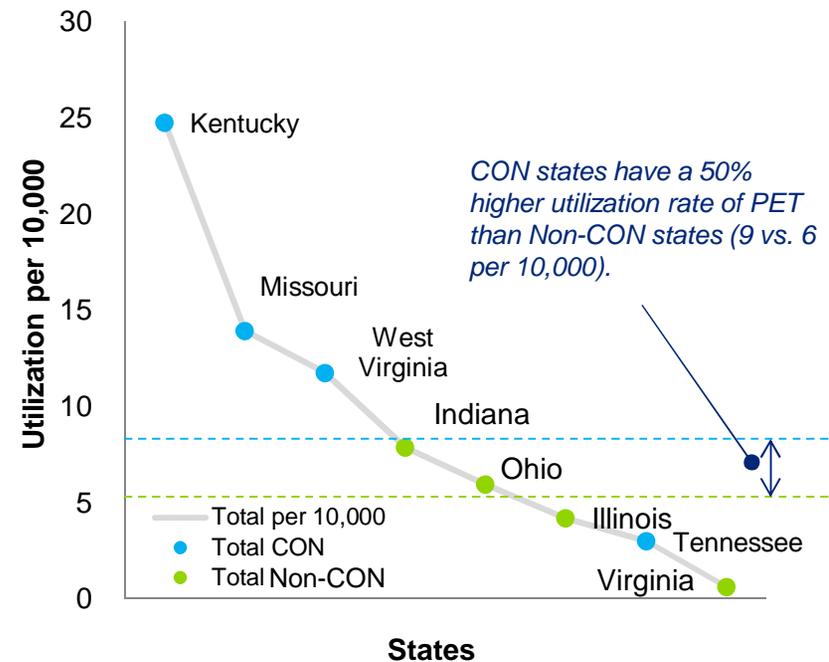
Contiguous state data suggests that the impact of a CON program in restraining MRI and PET use may be limited.

## Outpatient MRI Utilization per 10,000 <sup>1</sup>



*Comparison of outpatient MRI use rates in contiguous states suggests that the presence of a CON program may not be the primary determinant of outpatient utilization.*

## <sup>1</sup>Outpatient PET Utilization per 10,000 <sup>2</sup>



*Outpatient use rates call the effectiveness of CON in managing PET utilization into question. Non-invasive imaging services could still be subject to over-prescribing.*

1. Source: 2012 Truven Outpatient Profiles for the following Procedure Groups: MRI- Abdomen, MRI- Brain, MRI- Breast, MRI- Cardiac, MRI- Chest/Thorax, MRI- Lower Extremities, MRI- Orbit, Face Neck, MRI- Other, MRI- Pelvis, MRI- Spine, Cervical, MRI- Spine, Lumbar, MRI- Spine, Thoracic, MRI- Upper Extremities; data includes all medical practice settings including Private Office  
 2. Source: 2012 Truven Outpatient Profiles for the following Procedure Groups: PET SCAN

# Imaging: Overview of Contiguous States' CON Policies

Of the seven contiguous states, three do not have CON requirements for MRI or PET devices. Kentucky's provision specify minimum thresholds for new applications.

CON Decisions for MRI, PET and MRE

	State	New	Replace	Expand	Physician Owned
CON	Kentucky <sup>1</sup>	✓	N/A	—	N/A
	Missouri <sup>2</sup>	✓	✓	—	✓
	Tennessee <sup>3</sup>	✓	N/A	—	✓
	Virginia <sup>4,5</sup>	✓	N/A	✓	✓
	West Virginia <sup>6</sup>	✓	✓	✓	N/A
Non-CON	Illinois <sup>7</sup>	MRI CON was deregulated February 21, 2003			
	Indiana <sup>8</sup>	MRI has not been regulated under Indiana's CON policy			
	Ohio <sup>9,10</sup>	Many CON regulations, with the exception of Long Term-Care, were abolished in the late '90's			

Individual variances exist for equipment acquisition, capital thresholds, and minimum utilization determination.

CON requirements are similar for MRI and PET (refer to supporting materials for additional detail).

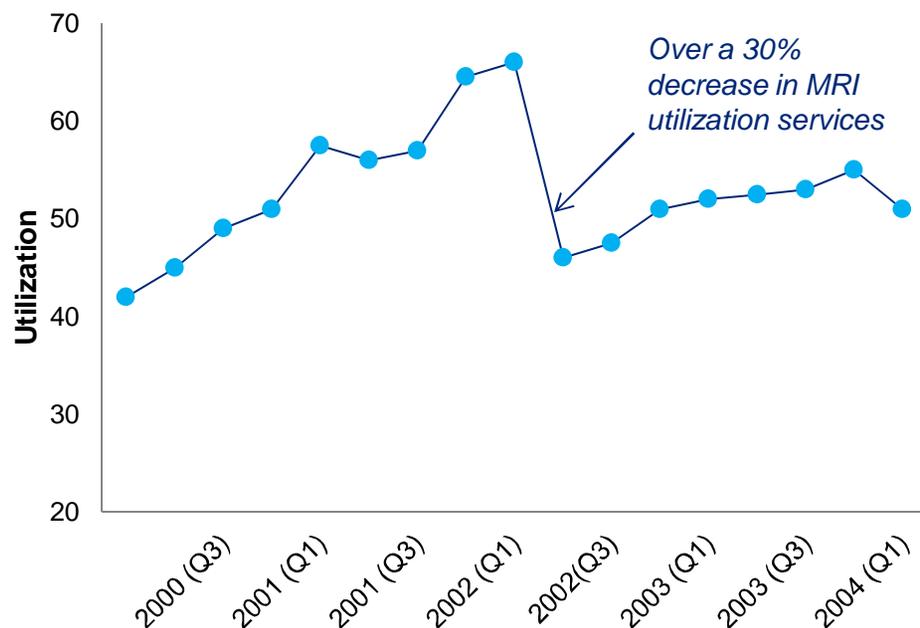
— CON in place, but typically not a barrier to entry in its current form given high capital expenditure thresholds.

1. The Commonwealth of Kentucky's 2013-2015 State Health Plan, Certificate of Need Review Standards  
 2. Missouri Department of Health and Senior Services <http://www.sos.mo.gov/adrules/csr/current/19csr/19c60-50.pdf>  
 3. Tennessee Health Services and Development Agency [http://tennessee.gov/hstda/cert\\_need\\_basics.html](http://tennessee.gov/hstda/cert_need_basics.html)  
 4. Virginia State Board of Health <http://www.vdh.virginia.gov/OLC/Laws/documents/2011/pdfs/COPN%20regs%202011.pdf>  
 5. Representative from the Virginia Department of Health  
 6. West Virginia Health Care Authority: [http://www.hca.wv.gov/certificateofneed/Documents/CON\\_Standards/Positron\\_Emission\\_Tomography.pdf](http://www.hca.wv.gov/certificateofneed/Documents/CON_Standards/Positron_Emission_Tomography.pdf)  
 7. Source: <http://www.ilga.gov/commission/jcar/admincode/077/07701110sections.html>  
 8. Source: Representative from Indiana Department of Health  
 9. Source: Representative from Ohio Department of Health, Certificate of Need program  
 10. Evidence of CON approval for MRI exists until 1994

# Imaging: Utilization Management Tools

A range of utilization management tools can help limit demand and may be more effective in controlling overall usage of imaging services than supply management through CON.

## Case Study of MRI Utilization Before and After Pre-Approval Requirement<sup>1</sup>



*Pre-approval can be an effective tool to manage volume of medical imaging services by reviewing medical adequacy of prescriptions on a case-by-case basis.*

## Utilization Management Tools

The following tools and mechanisms can help reduce excessive demand for MRI services:

- *Case management* – Individual review of appropriateness and pre-approval of imaging by third-party (payers or subcontracted case management firms).
- *Incentives for facilities* – Case rate payments to hospitals that include reimbursement for imaging services (removes fee-for-service volume incentive).
- *Penalties for prescribers* – Financial penalties for physicians over-prescribing imaging services.
- *Radiologist Consultation* – Requirement for consultation with radiologist prior to prescribing imaging.
- *Stark Laws* – Prohibition of referral to facilities in which referrer has financial interests.
- *Medical Guidelines* – Imaging guidelines and appropriateness criteria for prescription.

## Facility Capacity Study

# F. Ambulatory Surgery

# ASC: Summary and Recommendations

## Summary

- **The 2012 occupancy rate for ambulatory surgery ORs is high** as measured by the minimum volume threshold specified in the State Health Plan; the **occupancy challenge is expected to intensify** going forward.
- **Access time to closest ASC facility appears reasonable**, but the health services **data does not allow for an analysis of potential backlog or wait times** to obtain ambulatory surgery services.
- Kentucky is **below the average** of contiguous states in regards to commercial insurance cost allowance **for ASC reimbursement** which may **skew incentives toward treating patients in the hospital** instead of in an ambulatory setting.
- Of the 43 CON applications submitted **since Jan 1, 2003, none were approved that had to meet the planning area surgical utilization requirements** of the State Health Plan. 23 applications were granted under non-substantive review and 2 were approved under special circumstances (e.g., re-establishment of ORs after hospital closed).

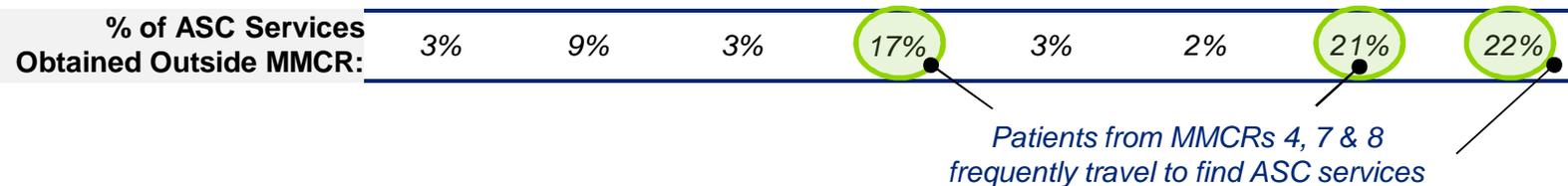
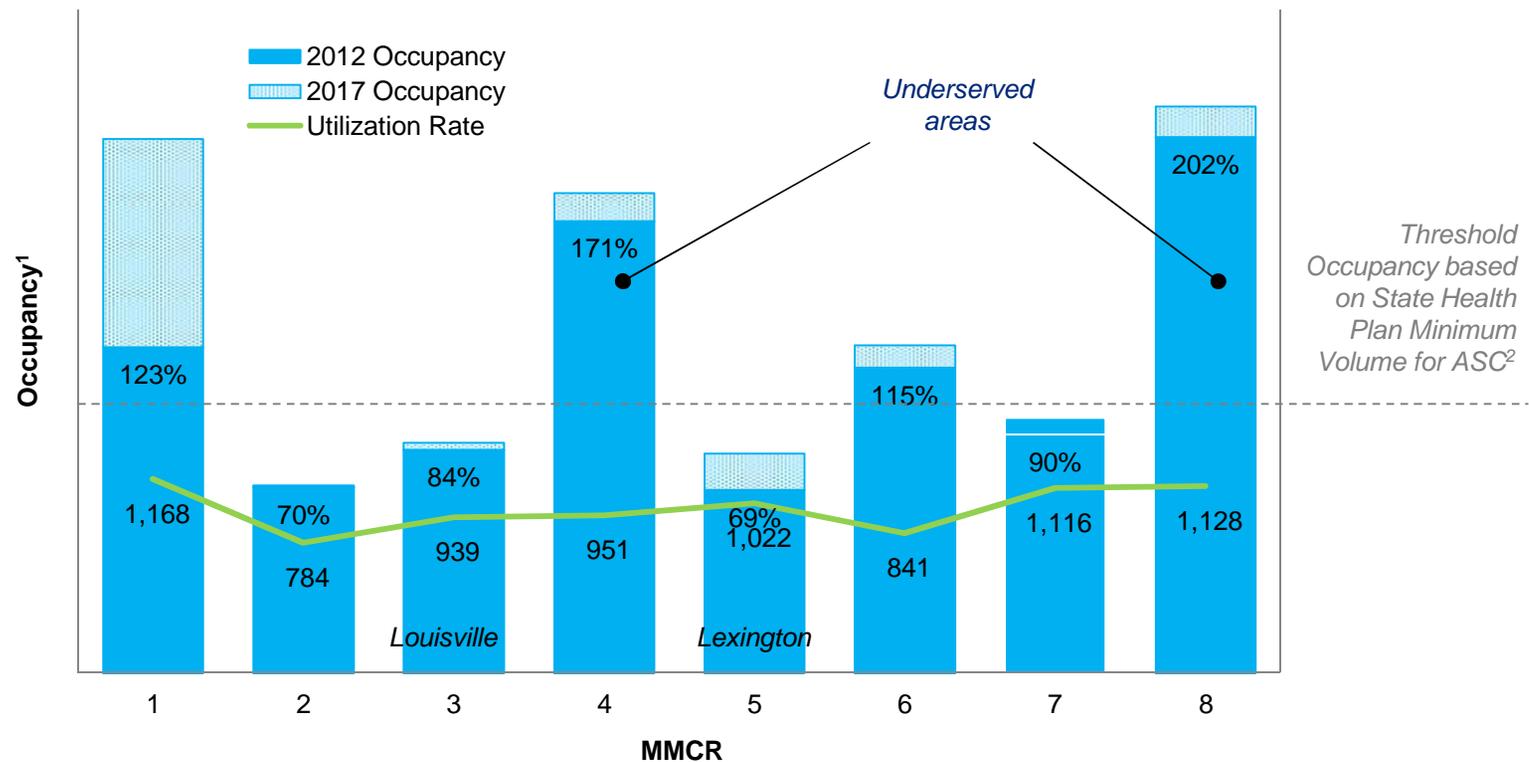
## Recommendations (Options for Consideration)

1. Temporarily relax CON criteria for ASC and allow more freestanding ASCs to be built in order to increase market competition and provide viable alternatives to hospital-based care.
2. Consider relaxing the proximity requirement stipulating 20-minute drive time to closest backup acute care hospital. The proximity requirement may not be medically relevant for smaller ambulatory surgery procedures. (In comparison, for cardiac cath, the State Health Plan does not set a proximity requirement but requires a 24x7 consultation service).
3. Use reimbursement for ambulatory surgeries as economic lever to encourage conducting surgical procedures in an outpatient setting rather than by admitting patients to hospitals.

# ASC: Occupancy Rates of ORs by MMCR

In general, occupancy levels for ambulatory surgery ORs are high, and some facilities may currently face actual capacity constraints.

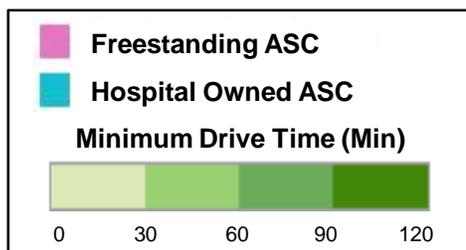
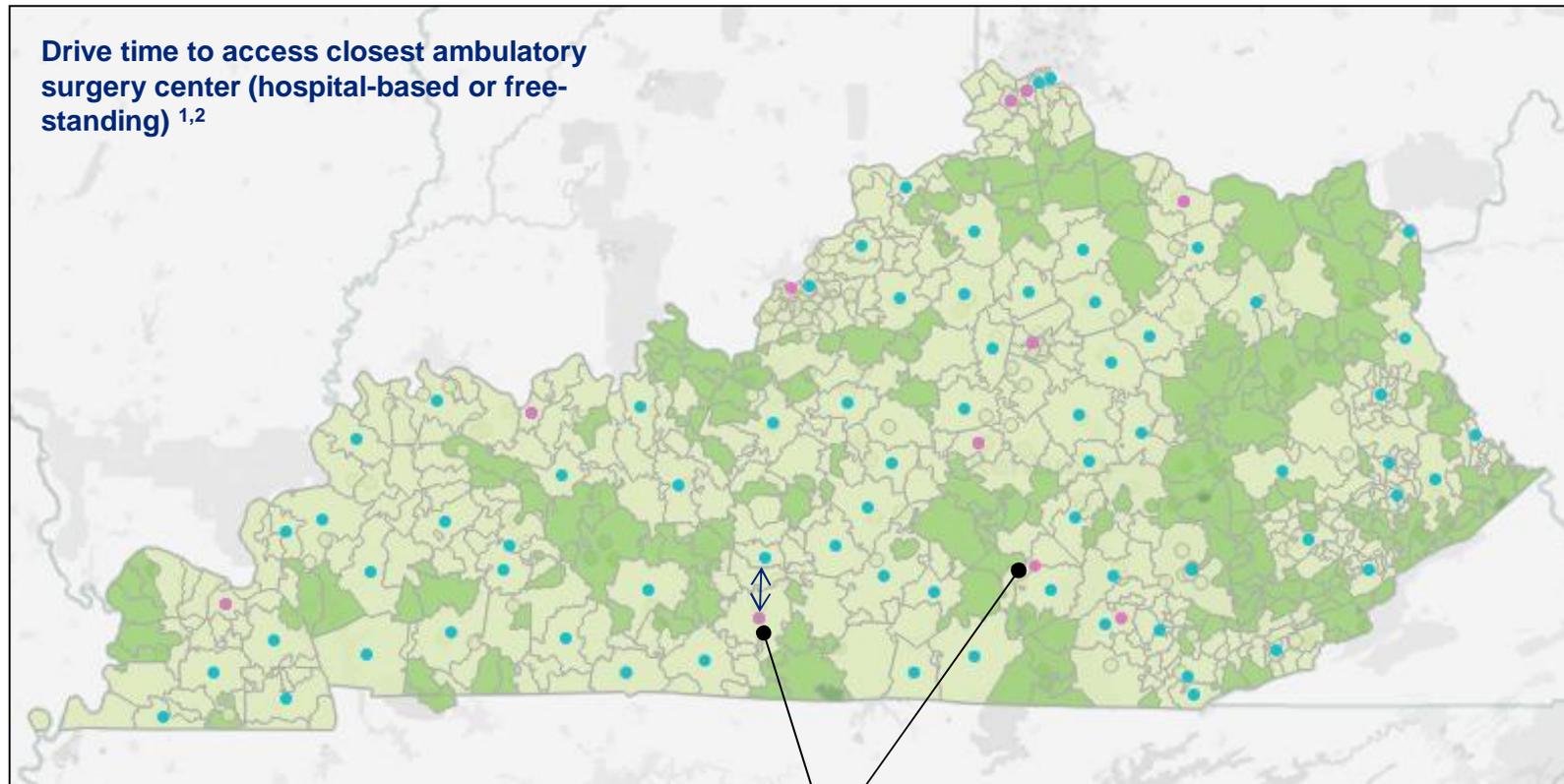
### Occupancy Rates for ASCs by MMCR (2012)



1. Source: 2012 outpatient claims database  
 2. This analysis examines OR utilization at Ambulatory Surgery Centers; It does not account for outpatient surgeries that might be performed at hospitals within the service area

# ASC: Access to Closest ASC (Drive Time)

The majority of Kentucky residents are less than one hour driving distance from an ASC.

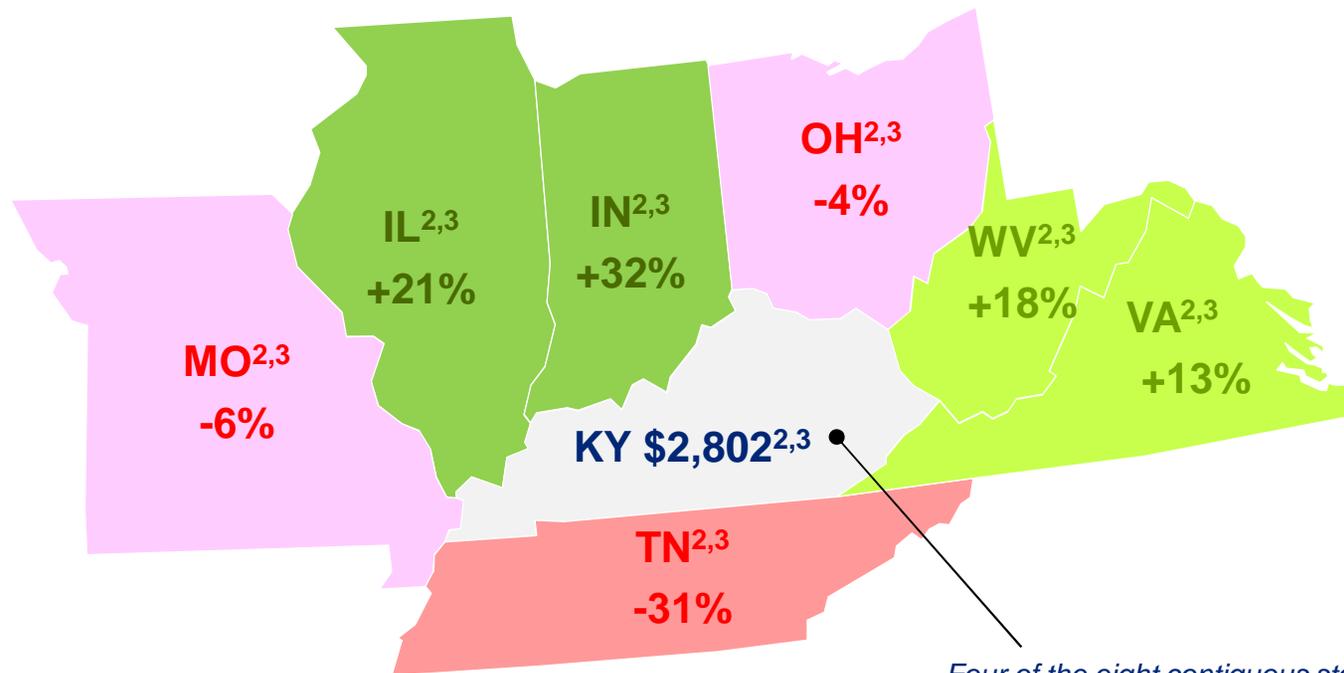


*Distribution of ambulatory surgery centers appears reasonable. The State Health Plan requires locating an ASC within 20 minutes of an acute care hospital with which a transfer agreement is in place. This can create a competitive disadvantage for free-standing centers which, due to proximity, now directly compete with the hospitals for volume. There are only 21 free-standing ambulatory surgery centers reporting as of 2012 (purple), indicating a potential lack of market competition.*

# ASC: Economic Levers

Kentucky is just below the average of contiguous states in regards to commercial insurance cost allowance for ASC reimbursement; this intermediate level of reimbursement may skew incentives toward still treating patients in an inpatient setting.

**Actual Cost Allowed per Surgery<sup>1</sup>  
(Commercial Insurance)**



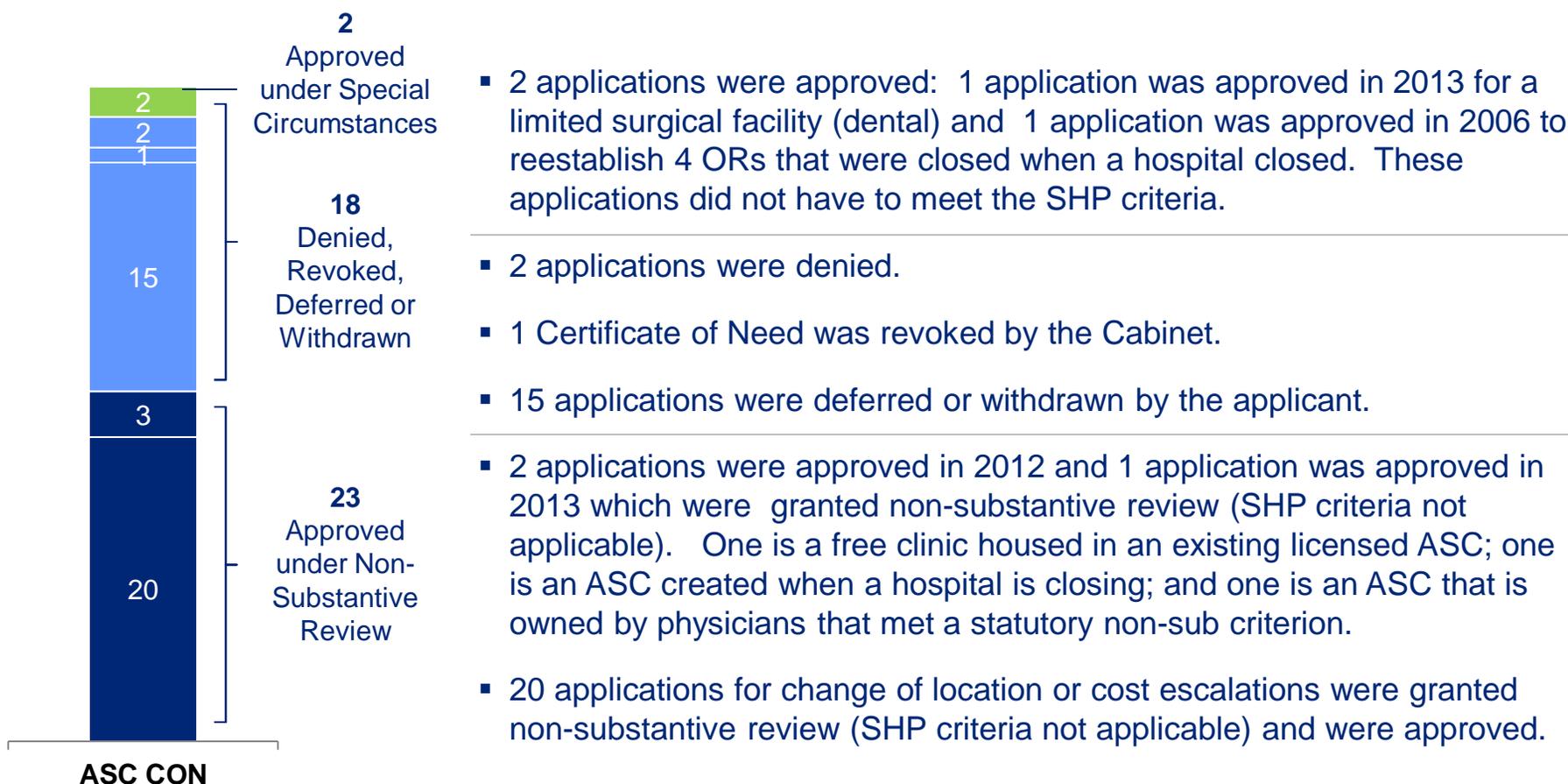
*Four of the eight contiguous states feature on average higher reimbursement for ambulatory surgery services.*

1. Sources: 2011 MarketScan Benchmark Data, Medical Commercial Claims Data; CMS' Table 4A.--Proposed Wage Index And Capital Geographic Adjustment Factor (GAF) For Urban Areas By CBSA And By State, FY2012  
 2. Actual Cost per Unit (surgery) Allowed, Wage Adjusted. Commercial reimbursement selected as proxy for overall reimbursement levels  
 3. Each state's cost per unit was wage adjusted using a calculated state-level wage index (the weighted average of MSA wage indices and MSA population)

# ASC: Overview of CON History

Of the 43 ASC applications submitted since Jan 1, 2003, none were approved that had to meet the planning area surgical utilization requirements of the State Health Plan (SHP).<sup>1,2</sup>

## Overview of ASC Applications and Decisions since 2003



1. Source: Office of Health Policy, CON Search Application. Analysis and interpretation provided by OHP  
 2. Non-substantive review: KRS 216B.015(18) defines 'Nonsubstantive review' as meaning 'an expedited review conducted by the cabinet of an application for a certificate of need as authorized under KRS 216B.095'. Examples: Change of location, replace or repair existing facility, for cost escalations.

# G.

## Physical & Occupational Therapy

- What is the workforce situation for physical therapy and occupational therapy?
  - Workforce supply vs. benchmarks
  - Projections
  - General workforce trends

# PT and OT: Summary and Recommendations

## Summary

- The Commonwealth's Total Physical Therapy workforce supply is comparable to national benchmarks and southern states (HHS Region 4).
- The demand for physical therapists in the Commonwealth is projected to continue to outpace supply according to a 2010 article in *The American Academy of Physical Medicine*.
- Similar to the situation with Physical Therapists, the Commonwealth's current Occupational Therapist workforce appears sufficient when compared to national, regional, and contiguous state benchmarks.
- However, trends in occupational therapist supply might indicate a potential shortfall of occupational therapists in the future:
  - The number of accredited programs has decreased over the last 5 years despite 93% enrollment rates.
  - The Bureau of Labor Statistics predicts a 33% increase in demand for Occupational Therapists, which may accentuate the effects of current occupational therapy vacancies.

## Recommendations (Options for Consideration)

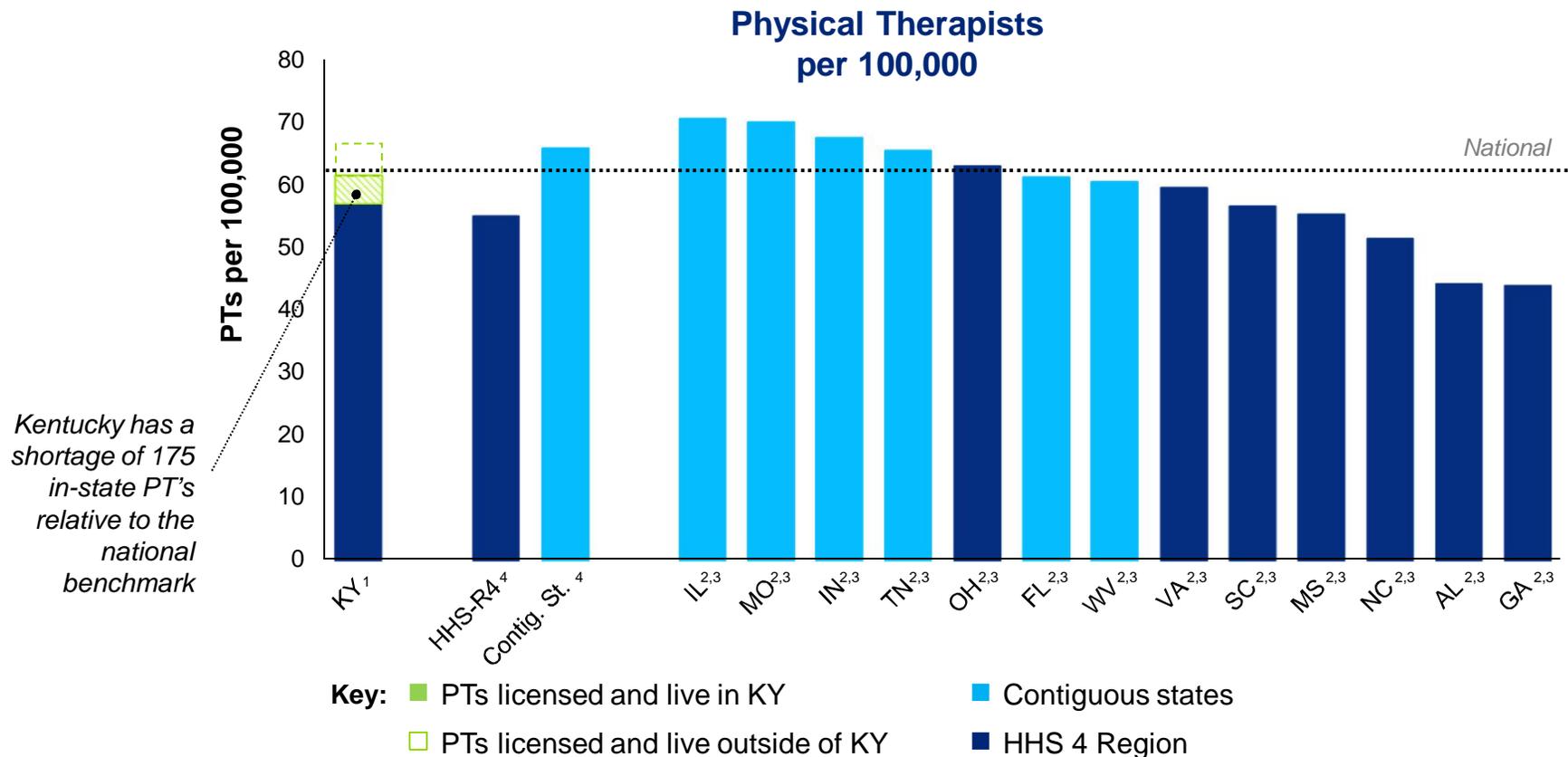
- Advance planning is required to avoid a shortfall of PT and OT, particularly in light of increased demand stemming from an aging population that will require additional physical therapy and occupational therapy services,
- Specific workforce measures may include:
  - Increase reimbursement for PT and OT to attract more professionals and increase attractiveness of training.
  - Consider loan forgiveness programs for PT and OT graduates.
  - Develop advanced degree programs (e.g., Doctor in Physical Therapy, DPT) to increase the profession's status.
  - Recruit international candidates to fill vacancies, potentially in a Health Professionals Shortage Area model.

## Potential Challenges

- There is little 'felt pain' today relative to immediate shortages in physical therapists and occupational therapists today. Anticipatory measures for PT and OT may therefore be deprioritized relative to more urgent tasks.
- Some of the suggested measures to bolster the PT and OT workforce may be beyond the purview of the Cabinet (e.g., increasing commercial or Medicare reimbursement, developing academic programs, etc.)

# Physical Therapy: Work Force Supply – 2013

The Commonwealth's Total Physical Therapy workforce supply is comparable to national benchmarks and southern states (HHS Region 4)



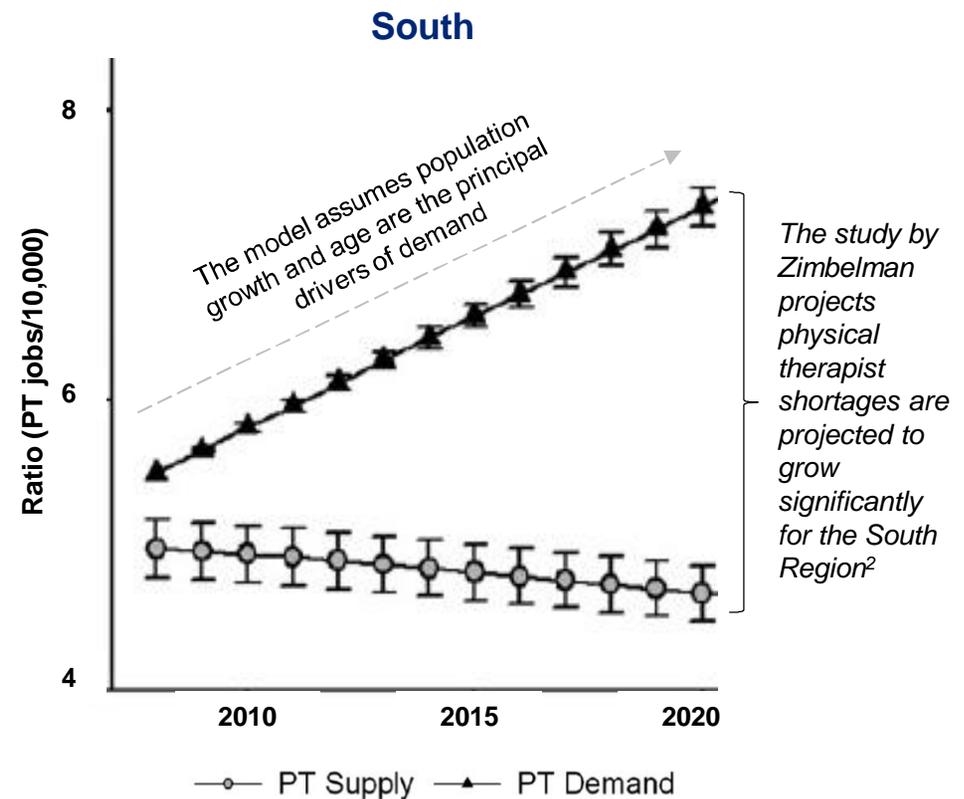
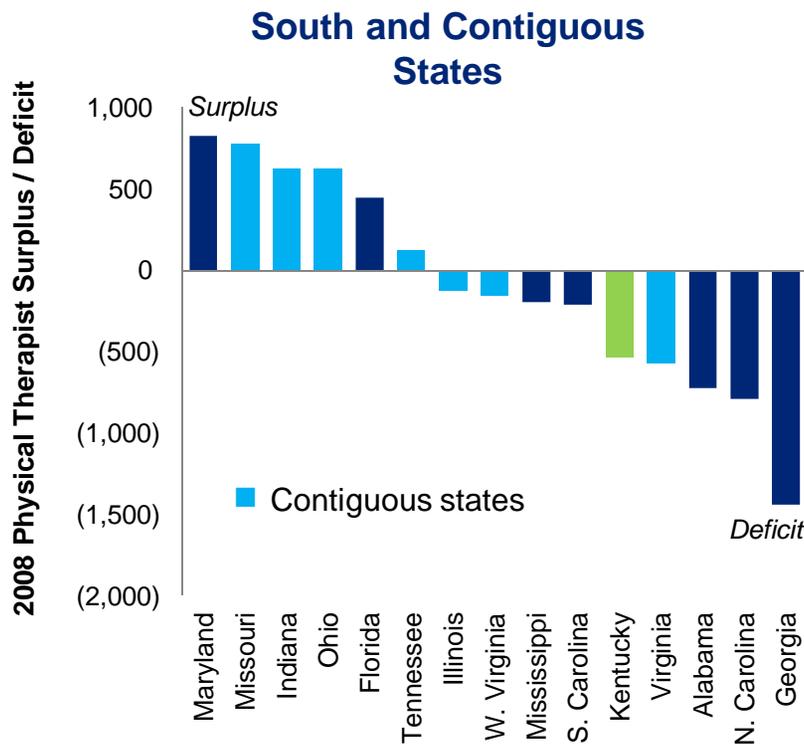
1. Kentucky residence was determined based on listed work and home addresses; Source: 2013 Kentucky Board of Physical Therapy's licensure list  
 2. All Non-Kentucky benchmark data was sourced from Bureau of Labor Statistics (BLS), Healthcare Practitioner and Technical Occupations Profiles, 2012.  
 3. All state benchmarks were calculated using the total number of Physical Therapists and standardized to per 100,000 population rate.  
 4. Contiguous state and HHS-Region 4 benchmarks were calculated using a weighted average of total Physical Therapists and respective state population for each region

# Physical Therapy: Projections – 2008 and Beyond Deloitte.

The demand for physical therapists in the Commonwealth is projected to continue to outpace supply according to a 2010 article in *The American Academy of Physical Medicine*

## South Historic Surplus/Deficit Experience<sup>1</sup>

## Future Surplus/Deficit Outlook<sup>1</sup>

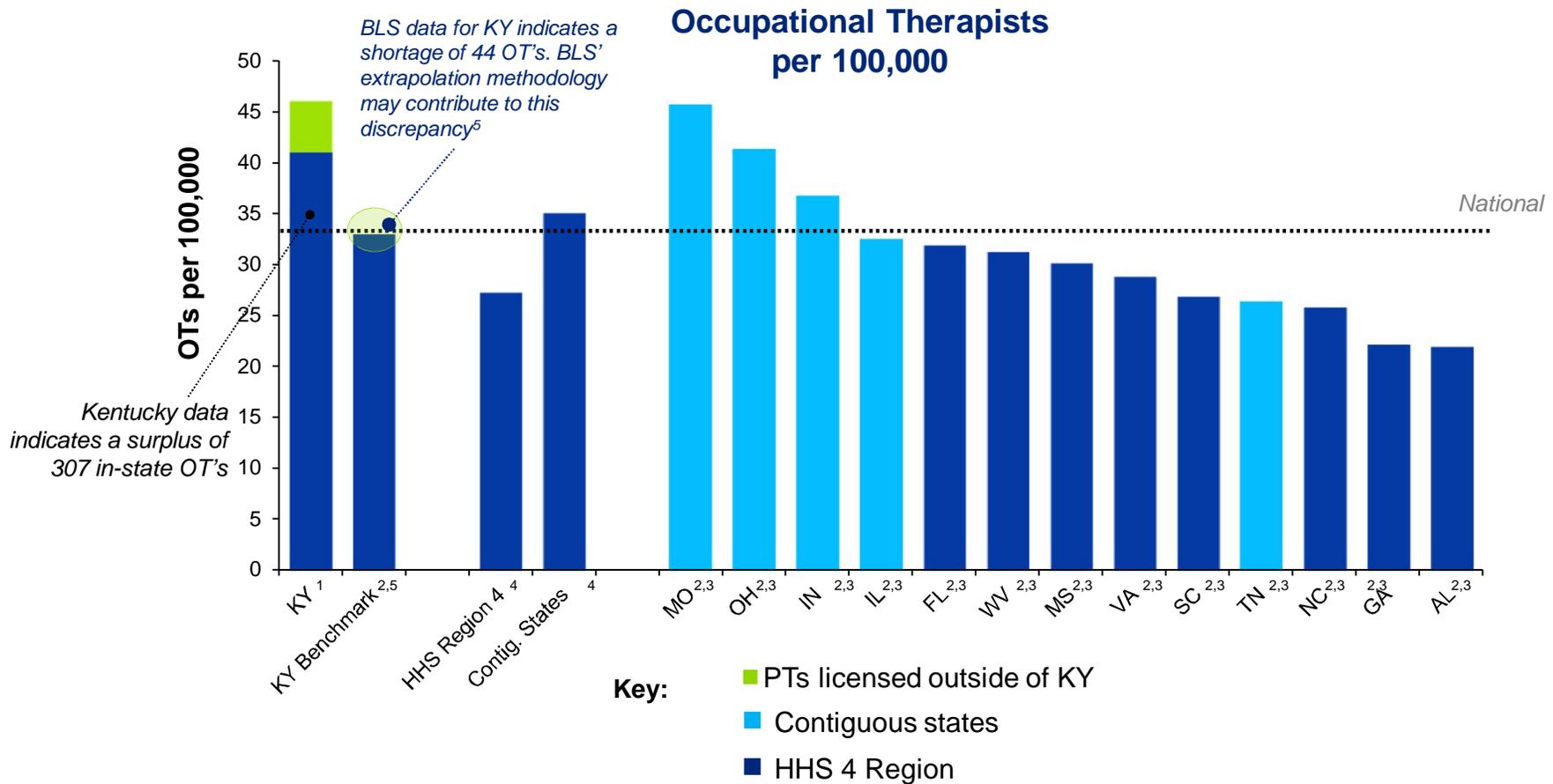


1. Source: Figure 1, Zimbelman, J. (2010). Physical therapy health human resource ratios: A comparative analysis of the United States and Canada. *The American Academy of Physical Medicine and Rehabilitation*, pg. 1025; Figure 2, pg. 1026.

2. PT Shortage based on 2008 data and calculated using:  $((PT\ Demand - PT\ Supply) / Population) * 104$ . Refer to source for PT Supply and PT Demand methodology

# Occupational Therapy: Work Force Supply – 2013 Deloitte.

The Commonwealth's current Occupational Therapist workforce appears sufficient when compared to national, regional, and contiguous state benchmarks



1. Kentucky residence was determined based on licensing state; Source: 2013 Kentucky Board of Occupational Therapists licensure list
2. All Non-Kentucky benchmark data was sourced from Bureau of Labor Statistics (BLS), Healthcare Practitioner and Technical Occupations Profiles, 2012.
3. All state benchmarks were calculated using the total number of Occupational Therapists and standardized to per 100,000 population rate
4. Contiguous state and HHS-Region 4 benchmarks were calculated using a weighted average of total Occupational Therapists and respective state population for each region
5. Bureau of Labor Statistics (BLS) calculates benchmarks using a sample of data collected from a biannual survey data over a 3 year period.

# Occupational Therapy: General Trends

Trends in occupational therapist supply might indicate a potential shortfall of occupational therapists in the future

Region <sup>3</sup>	Vacancies % vs. Budgeted FTE <sup>2</sup>	
	Occupational Therapists	Occupational Therapy Assistants
U.S Sample	8.9%	7.7%
Northeast	6.5%	8.7%
South	8.3%	11.3%
Midwest	8.7%	4.3%
West	11.9%	5.5%

Powell, J.M., Kanny, E. M., & Ciol, M.A., 2008

*A 2010 study by the American Occupational Therapy Association indicates current vacancies in occupational therapy positions that are predicted to remain in the long run<sup>1</sup>*

## Additional Trends:

- Based on a study by the American Occupational Therapy Association, a lack of occupational therapists to fill available positions is the primary cause of OT job vacancies<sup>1</sup>
- Despite high levels of enrollment around 93%, the number of accredited occupational therapy programs has steadily decreased over the last 5 years; this is likely to unfavorably impact the number of new graduates<sup>4</sup>
- The Bureau of Labor Statistics predicts a 33% increase in the Occupational Therapy market, which may multiply the effects of current vacancies and decrease supply of OT programs<sup>5</sup>

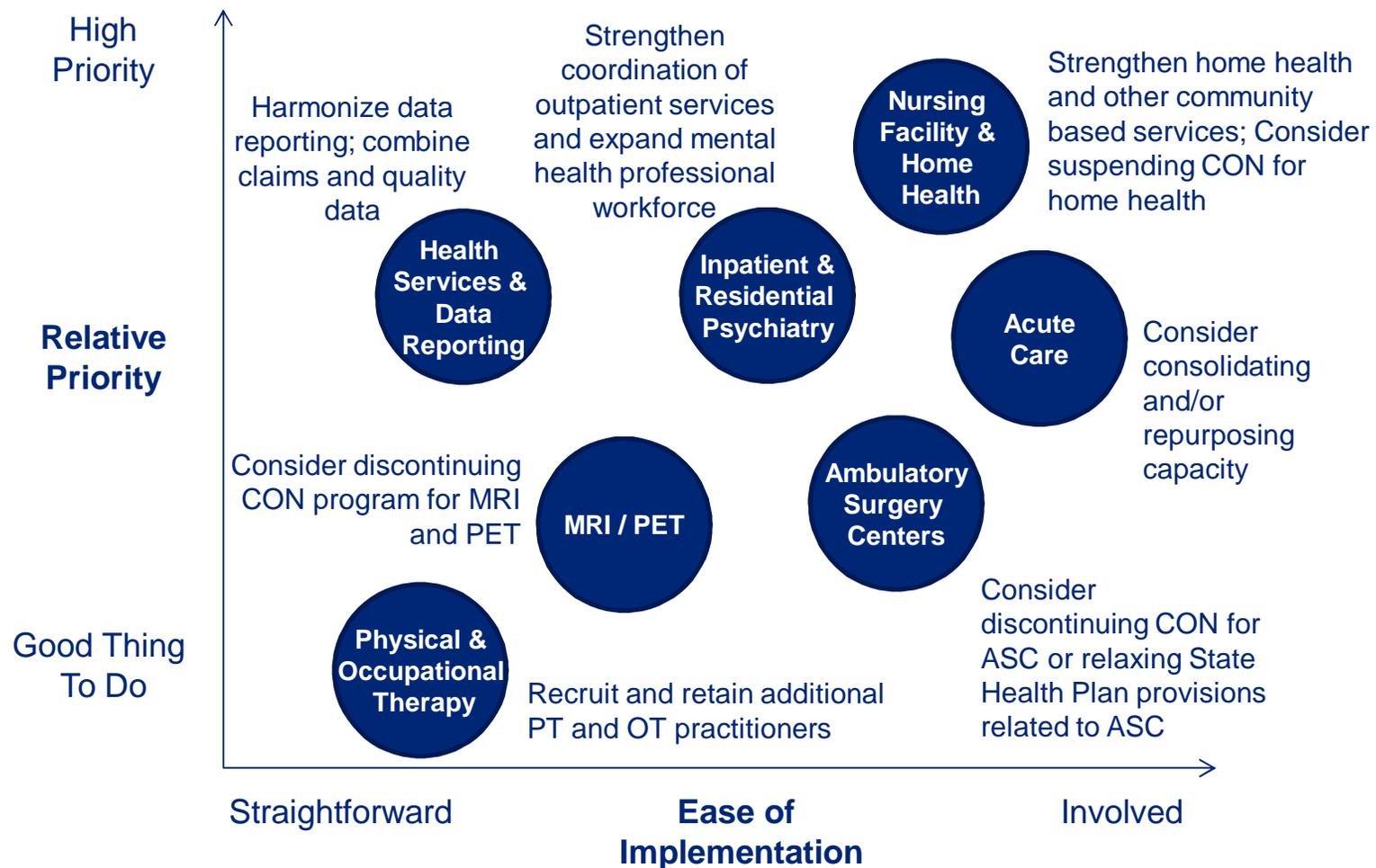
1. Source: Table 2, Powell, J.M., Kanny, E. M., & Ciol, M.A. (2008) State of the occupational therapy workforce: Results of a national study. American Journal of Occupational Therapy, 62, 97-105. Table 2 pg. 100.  
 2. Vacancy= (# of FTE equivalent vacant positions/#FTE budgeted positions)  
 3. Regions based on the US Census Bureau Regional Definitions  
 4. American Occupational Therapy Association, 2010-2011 Academic Programs Annual Data Report, "Trends in Accredited Programs" <http://www.aota.org/~media/Corporate/Files/EducationCareers/Accredit/47682/2010-2011-Annual-Data-Report.ashx>  
 5. Bureau of Labor Statistics, Occupational Therapist Profile, <http://www.bls.gov/oo/h/healthcare/occupational-therapists.htm>

## Facility Capacity Study

# Conclusions

# Prioritization of Initiatives

Certain recommendations in Acute Care, Nursing Facilities, and Psychiatry are expected to be more complex to implement, while Data and MRI/PET efforts could be considered “quick wins” in moving forward.<sup>1</sup>



# Q&A



# Facility Capacity Study

# Appendix

# Occupancy Projections: Tier 1 (Continued Momentum)

Occupancy rates are projected assuming largely constant supply. There are few 'new issues'; facilities that were close to capacity in 2012 will continue to experience potential constraints.

MMCR	Acute Care	Comp. Rehab	Psych Hospital	Nursing Facility	ASC	PRTF <sup>2</sup>	CD <sup>2</sup>	Home Health <sup>3</sup>	Home Health 65+ <sup>3</sup>	Hospice <sup>3</sup>	Res. Hospice <sup>1,3</sup>	Cardiac Cath <sup>3</sup>	PDN <sup>3</sup>
1	40%	53%	36%	82%	123%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	36%	51%	56%	75%	202%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	37%	45%	27%	89%	70%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	34%	40%	31%	88%	71%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	49%	50%	52%	87%	84%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	49%	54%	64%	86%	87%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	52%	70%	54%	93%	171%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	51%	75%	64%	94%	181%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	41%	64%	46%	89%	69%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	44%	88%	44%	92%	83%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	54%	79%	47%	93%	115%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	50%	128%	52%	90%	124%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	47%	53%	39%	92%	90%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	38%	46%	33%	91%	84%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	57%	46%	76%	89%	95%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	49%	46%	105%	88%	105%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KY	47%	58%	46%	89%	95%	84%	57%	N/A	N/A	N/A	N/A	N/A	N/A
	45%	70%	54%	88%	105%	120%	76%	N/A	N/A	N/A	N/A	N/A	N/A

 Potential for Moderate Capacity Constraint (>70% projected occupancy)

 Potential for Severe Capacity Constraint (>85% projected occupancy)

 2012 capacity

 Projected 2017 capacity

1. Utilization rate per 10,000 individuals in 2012, assumed to hold constant through 2017

2. Demand for facilities with insufficient geographic footprint is projected using statewide data

3. Capacity data is not available for services that are conducted outside of a facility, i.e. home health, as well as select facility-based services (e.g., residential psychiatry)

# Occupancy Projections: Tier 2 (Steady State)

Occupancy rates are projected assuming largely constant supply. For MRI, MRE and PET, utilization is compared against minimum use thresholds for new CON applications.

MMCR	MRI <sup>1</sup>	MRE <sup>1</sup>	PET <sup>1</sup>	Neonatal <sup>2</sup>	Open Heart <sup>2</sup>	Transplant <sup>3</sup>
1	68%	111%	35%	N/A	N/A	N/A
	71%	116%	37%	N/A	N/A	N/A
2	72%	60%	40%	N/A	N/A	N/A
	76%	63%	42%	N/A	N/A	N/A
3	95%	70%	78%	N/A	N/A	N/A
	104%	76%	86%	N/A	N/A	N/A
4	80%	91%	91%			N/A
	87%	99%	99%			N/A
5	87%	81%	64%			N/A
	96%	88%	70%			N/A
6	101%	37%	75%			N/A
	111%	41%	82%	N/A	N/A	N/A
7	77%	81%	39%	N/A		
	81%	85%	41%	N/A		
8	83%	74%	63%	N/A		
	89%	79%	68%	N/A	N/A	N/A
KY	83%	74%	63%	79%	44%	N/A
	89%	79%	68%	82%	48%	N/A

Utilization is, for the most part, below the minimum use threshold specified in the State Health Plan (Threshold would correspond to 100%)

Occupancy calculated at the State level due to limited geographic distribution of services

- Potential for Moderate Capacity Constraint (>100% standard use rate)
- 2012 capacity
- Projected 2017 capacity

69  
 1. Capacity calculated according to standard annual number of procedures as per State Health Plan  
 2. Demand for facilities with insufficient geographic footprint is projected using statewide data  
 3. Capacity data is not available for select facility-based services (e.g., transplant)

**Deloitte.**

Copyright © 2013 Deloitte Development LLC. All rights reserved.

Member of  
**Deloitte Touche Tohmatsu**