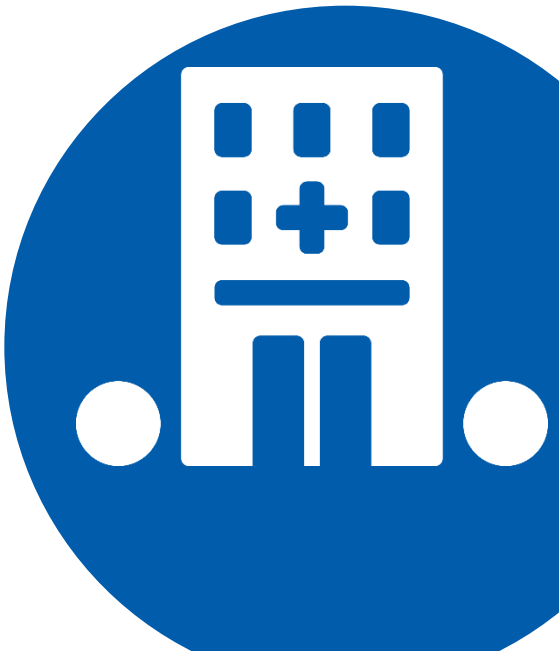
Regions Hospital
HealthPartners

Regions Hospital Proposal to Increase Licensed Bed Capacity

November 20, 2017



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1.0 Executive Summary

Regions Hospital requests a public interest review from the Minnesota Department of Health (MDH) pursuant to Minnesota Statutes, Section 144.552, for our proposal to increase our licensed bed capacity. Further, we intend to ask the Minnesota State Legislature for an exception to the moratorium law permitting issuance of a hospital license with increased capacity. We seek to expand our licensed capacity by 100 beds to allow us to meet increasing demands for care from the communities we serve. The following report provides relevant background and data that outline a compelling need for this increased capacity and how the beds will be used.

Regions Hospital serves a unique dual role as a high-end provider of state-of-the-art trauma and burn care while also ensuring access and equitable care for our community's most vulnerable patients. We are here for everyone. Because of our commitment to continue to serve in this role, we present this report to underscore the challenge we face.

Simply stated, we have exhausted our supply of available beds. Without new ones, we will no longer be able to meet the significant, sustained and growing demand for care in the east metro.

For 145 years, Regions Hospital has served as an engaged and vital civic partner and anchor institution, providing a level of care, service and investment in our community that no other hospital in the east metro provides. For example:

- We are the east metro's only Level 1 Adult and Pediatric Trauma and Burn Center.
- We are the leading provider of comprehensive mental and chemical health services in the east metro.
- We are a safety net hospital and the biggest charity care provider in the east metro.
- We are one of the largest, private teaching hospitals in the state---partnering with the University of Minnesota to train more than 500 resident physicians each year. We are committed to conducting research to improve care through the work of our Critical Care Research Center.
- We are responsible stewards of our resources. We deliver high-quality care at lower than average cost, positioning us in the preferred tier of every major commercial payor in the market.

We are also one of the only hospitals in Minnesota running out of bed licenses. Now only a few large health systems hold most of the unused bed licenses. By March of 2018, we will be using 100 percent of our available licenses. Not being able to grow to meet demand has consequences. If we are not allowed to add new medical/surgical beds, we will have to reevaluate and consider changes in the services we provide as patient needs and complexity increase.

What you will find in this report:

More patients are coming through our doors
In the last five years we have seen a 25 percent increase in the number of patients served. Our average hospital occupancy rate of 87 percent far outpaces the national average of 64 percent for urban hospitals. From 2012 to 2016, the number of medical and surgical inpatients increased by an average of 236 patients each year. Cardiovascular, general surgery, neurology and orthopedics increased their patient numbers by more than 70 each year. **More details throughout Section 3.**

Our patients are sicker
To meet demand, we have been increasing our critical care capabilities, including medical and surgical intensive care. Our average daily intensive care unit (ICU) bed use has risen by 33 percent from 2012 to 2016. We are caring for more patients with complex conditions. Our patients are sicker, a trend that has been increasing over the last seven years. The overall level of illness in our patients, or acuity, and our case mix index (CMI) has been increasing over the past seven years and we expect this trend to continue. **Learn more in Sections 3.1 and 4.7.**

We are the safety net
We care for all patients who come to us for help, without regard for their ability to pay. In addition, we are among the top five charity providers of hospital care in the state. As a former public hospital of Ramsey County, we had a statutory obligation to provide charity care. Now as a private hospital we continue to partner with Ramsey County as a safety net for many vulnerable persons, although the county no longer supports Regions with payments for charity care. **More information in Section 5.8.**

We will add employees as we add new beds
The prospect of adding 100 new beds means by 2040 we expect to add more than 950 full time equivalent positions to our current total of 4,094, many of whom are represented by AFSCME Council 5, SEIU Healthcare, Teamsters Local 120 and IUOE Local 70. We support the need for future employees by investing in the development of our own employees and partnering with community organizations to increase the amount of people entering the health care workforce. **Learn more in Sections 4.3 and 6.3**.

We are tracking population projections to the year 2050
Mirroring national trends, state demographers from Minnesota and Wisconsin say more and more Baby Boomers are hitting retirement age. From 2015 until 2050, the number of people age 65 and older will increase an astonishing 69 percent. It will be critical for hospitals like Regions to have the ability to accommodate an expected surge in inpatient admissions from people in this demographic. Our payer mix is already beginning to reflect this trend. Medicare patients made up most of our growth in discharges since 2012, with a 16 percent increase in five years. **More details in Section 4.1a.**

We are focused on getting patients the right level of care
We are working to reduce emergency department (ED) use and inpatient admissions through case management, education about how to use primary care, urgent care and Virtuwell (our online clinic providing care for dozens of conditions). We have developed a protocol for low-risk chest pain, allowing patients who meet criteria to go home and follow up with next day outpatient stress testing. We are moving more surgeries to outpatient settings, and we have expanded our partial hospitalization

program, allowing more mental health patients to go home each night to a supportive environment. **More information in Section 3.2.**

The drive to reduce costs while improving outcomes and experience means the role of hospitals and the services they provide in the future will continue to evolve. More therapies and treatments will migrate to innovative care settings outside the hospital. And yet even as these changes take place, we expect a sustained increase in demand for medical/surgical and critical care services for our nation's aging population. More seniors with more acute illnesses will fuel an extended surge in inpatient admissions.

In this report, you will learn what key indicators are telling us about this demand, and the steps we have already taken to manage this ongoing surge. Areas of focus include:

- The current state of our bed capacity, plus inpatient growth across our service lines
- Efforts to reduce emergency department use and hospitalizations
- How demographics and complexity of care are driving demand
- Projections for length of stay, utilization and market share
- How demand for care will affect staffing
- The benefits to our patients and community

Based on these indicators, we believe the east metro community needs more inpatient bed capacity. As the largest provider of inpatient care in the east metro, and because we serve a patient population that includes some of the most vulnerable, we need to be a part of the solution.

As a not-for-profit organization, we remain focused on our mission: To improve health and well-being in partnership with our members, patients and community. We strive to provide the highest quality care with an exceptional experience at an affordable cost. We look forward to once again meeting this challenge, as we always have throughout our 145-year history.

1.1 Key Findings

- In 2014 we began using more inpatient beds, due to growing patient demand and use. Prior to 2014, we were using 422 beds. By March of 2018, all 454 of our licensed beds will be in service. Meanwhile, utilization (as measured by staffed beds) of competing east metro hospitals remains flat.

- Our request for 100 new licensed beds is based largely on current and projected demand for care from a changing population that reflects the growth needed to maintain market share, an increase in length of stay due to the aging population, and a decrease in utilization rates due to care model innovation.

- We have experienced increased demand for inpatient services from our primary, secondary and tertiary service areas and we expect the trend to continue. Because of our broad array of specialized services, we increasingly serve patients from a wide area and from referring hospitals and medical groups.

- Our patients are sicker. As a result, our average daily intensive care unit (ICU) bed use rose from 28.6 in 2013 to 38 in 2017. This is a 34 percent increase. Sicker patients stay longer and affect inpatient census to a greater degree.

- Since 2012, Regions Hospital has experienced significant growth in several leading inpatient service lines including general surgery, cardiovascular, neurology and orthopedics — each seeing growth of greater than 70 new patients per year.

- Medicare patients account for most of our growth in discharges since 2012, with a 16 percent increase in more than five years. That equates to about 360 additional Medicare patients each year. This trend is expected to continue as the population continues to age.

- State demographers from Minnesota and Wisconsin say the number of people 65 and older in the counties of Ramsey, Washington, Dakota, Polk (Wis.) and St. Croix (Wis.) will increase 69 percent over the next 35 years. The number of people age 45 – 64 will increase just 1 percent.

- Regions Hospital is dedicated to the Triple Aim: providing the highest quality care with an exceptional experience at an affordable price. To that end, we have implemented several improvement projects aimed at reducing unnecessary hospitalizations and emergency department use. Despite these efforts, Regions' inpatient census consistently runs "hot" at 85-90 percent occupancy (compared to an ideal occupancy rate of 75-80 percent). Running at such high occupancy rates is difficult to sustain and has a negative impact on quality and patient experience.

2.0 Project Description

New licensed beds are needed to keep pace with demands for medical/surgical, mental health and labor and delivery services.

Based on increased demand, population growth, utilization and market share, Regions Hospital requests additional bed licenses to allow us to continue to meet increasing demands for care in the east metro. In particular, we are seeking beds for medical/surgical care and intensive care, mental health, and labor and delivery to continue to provide our specialized services and care for our community's most vulnerable patients.

As you will learn in this report, our experts have been monitoring the increasing demands for care. We have also taken aggressive steps to mitigate the surge.

Regions Hospital is requesting the following additional bed licenses to meet the growing inpatient needs of our primary, secondary and tertiary service areas and to maintain current market share:

- 60 Medical/Surgical and Critical Care Beds
- 20 Mental Health Beds
- 20 Obstetric Beds (2 new beds for mothers, 6 for transforming our care model for babies, and 12 for converting labor/delivery rooms into licensed inpatient beds)

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100 total inpatient bed licenses

Our bed license request can be considered conservative based on the true estimated shortage in beds indicated by our own forecast modeling and a separate projection developed by an industry expert as outlined in section 3.

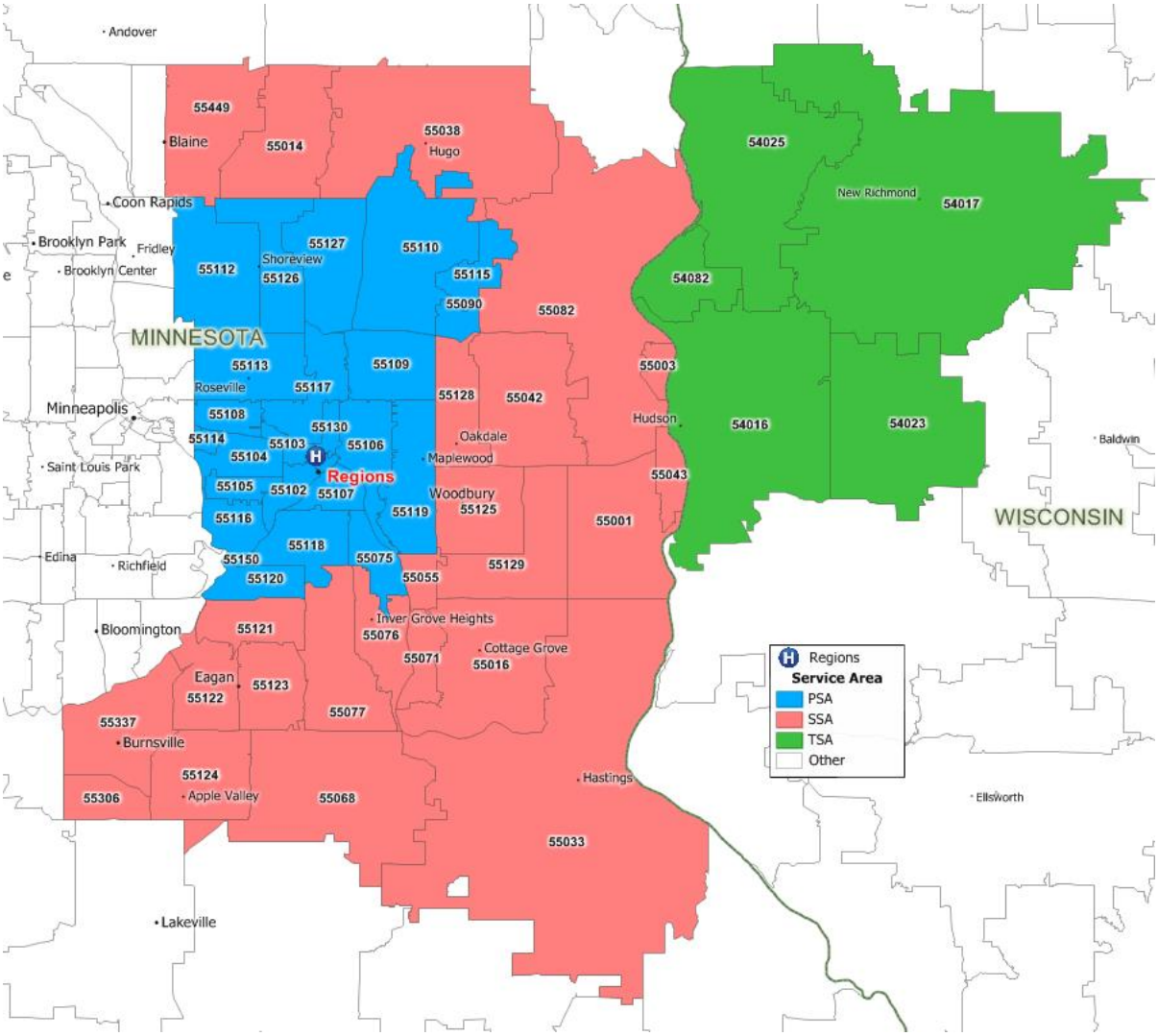
3. 0 Project Need

Regions Hospital serves a wide area, including the east metro, but also western Wisconsin and beyond, providing specialty care not readily available elsewhere.

With a broad array of specialized services, Regions Hospital cares for patients across four service areas: primary, secondary, tertiary and regional. The primary service area is largely proximate to St. Paul. The secondary service area extends to the north, east and south metro and represents the markets reached by our ability to serve a higher acuity level than smaller, community hospitals. The tertiary service area includes western Wisconsin and beyond through our specialty care and unique services in trauma, burn,

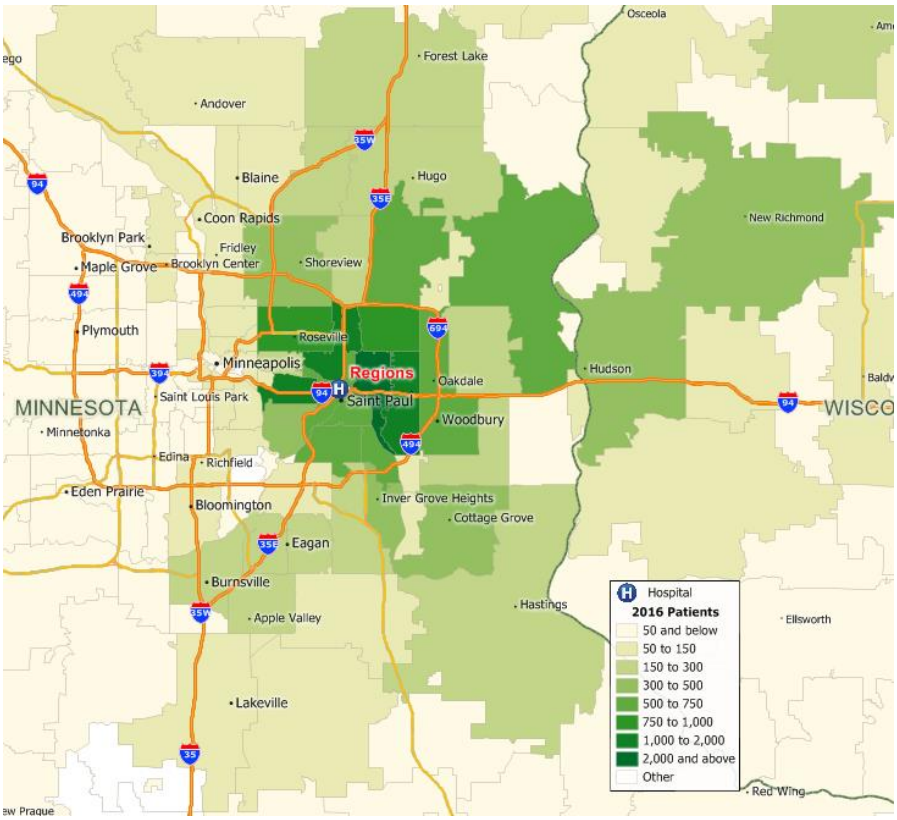
acute inpatient rehabilitation services and specialized intensive care. These services are not readily available elsewhere. Finally, given the quaternary services Regions provides (i.e. burn care), we attract patients from surrounding regions and states.

0ur analysis is largely driven by the demand and needs in our primary and secondary service areas. A list of zip codes for our primary, secondary and tertiary service areas is listed in the Appendix.



3.1 The Patients We Serve

As the east metro safety net hospital, Regions Hospital provides a broad array of services for our patients, including those coming from other facilities.



Regions 2016 Inpatient Patient Origin Map

Regions Hospital is here for everyone. We are uniquely positioned as the east metro safety net hospital. We also provide highly specialized services, including burn and trauma care. We draw patients from the east metro, western Wisconsin and across the nation. In 2016, Regions Hospital served patients from all 50 states and two U.S. territories. The map above depicts communities where most of Regions Hospital patients live. The darker colors represent higher concentrations of Regions Hospital patients.

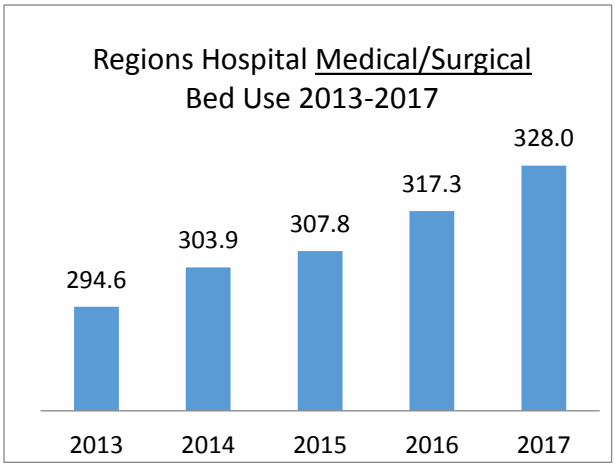
Regions Hospital is part of the HealthPartners family of care. We also provide highly specialized care for other key metro and regional hospitals and medical groups. Patients routinely come from Allina, Fairview, HealthEast, Mayo, North Memorial, The Urgency Room and others. The demand for inpatient care at Regions Hospital is surging, with a three-year increase in both medical/surgical admissions and

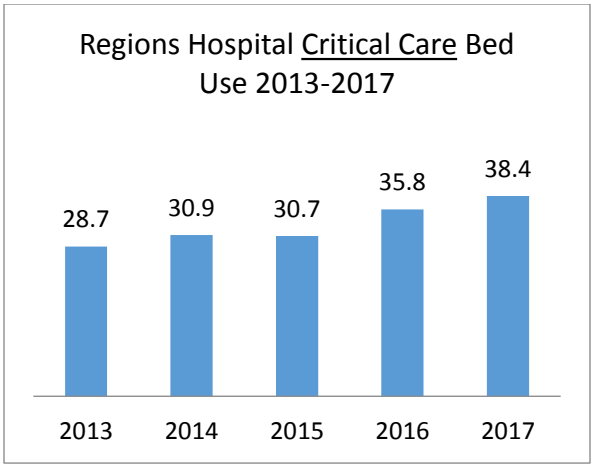
average daily patient census. In response, we have been tapping into our remaining supply of available beds, investing in additional staff and clinical resources. By March of 2018, Regions Hospital will be staffing 454 beds -- the maximum allowed under our current license agreement.

Medical and surgical inpatients grew by 3.5 percent from 2012 to 2016. This is an average increase of 236 patients or 0.7 percent per year. General surgery, cardiovascular, neurology and orthopedics saw the largest growth—with each at a rate greater than 70 new patients per year. Our orthopedics service line is a combination of both elective orthopedics and trauma-related orthopedic care. Despite constant use of 100 beds, the number of mental health patients we care for has declined by 2.2 percent. A shortage of community-based transitional care means these patients face longer inpatient stays. In 2013, only 182 psychiatry patients stayed longer than 30 days. In 2016, the number rose to 232 patients.

Regions Hospital Discharges: Service Line	2012	2013	2014	2015	2016	2012-2016 Change	% Annual Change	%Change 2012 to 2016
Total	**26,553**	**25,938**	**27,338**	**26,609**	**27,495**	**942**	**0.7%**	**3.5%**
Neurology	1,107	1,069	1,141	1,186	1,491	384	6.9%	34.7%
Orthopaedics	2,446	2,632	2,715	2,517	2,772	326	2.7%	13.3%
General Surgery	1,909	1,749	1,984	1,897	2,215	306	3.2%	16.0%
Neonatology	736	785	810	834	1,025	289	7.9%	39.3%
Cardiovascular	2,728	2,522	2,778	2,845	3,014	286	2.1%	10.5%
General Medicine	2,767	2,707	2,904	2,882	3,026	259	1.9%	9.4%
Pulmonology	1,172	1,064	1,251	1,251	1,426	254	4.3%	21.7%
Chemical Dependency	379	439	571	625	596	217	11.5%	57.3%
Oncology	641	614	676	787	822	181	5.6%	28.2%
Gastroenterology	1,446	1,362	1,434	1,364	1,543	97	1.3%	6.7%
Psychiatry	3,297	3,595	3,534	3,211	2,940	(357)	-2.2%	-10.8%

To meet community demand and patient needs, Regions Hospital has been increasing critical care capabilities, growing capacity for intensive care patients. Critical care includes medical intensive care (MICU), surgical intensive care (SICU), neurologic critical care (NCCU), cardiovascular intensive care (CVICU) and burn critical care. As a result, the average daily intensive care unit (ICU) bed usage rose from 28.7 in 2013 to 38.4 in 2017--a 33 percent increase.





The mix of the patients we serve is also changing. The tables below show Regions Hospital growth by payor. The largest growth in discharges since 2012 has been with Medicare—a 16 percent increase over five years. Between 2012 and 2016, Medicare added 1,446 more patients to Regions Hospital. Because of the Medicare patient growth, the utilization of hospital beds exceeds the growth in patients. While overall discharges have grown by 3.5 percent, bed utilization has grown by 13.5 percent. Medicare patients have occupied 29 more Regions' beds since 2012. Medicaid patient bed use has grown by 21 in that same time period. Self-pay patients have decreased as they shift into either Medicaid or commercial insurance. About 67 percent of our inpatients are enrolled in Medicare or Medicaid.

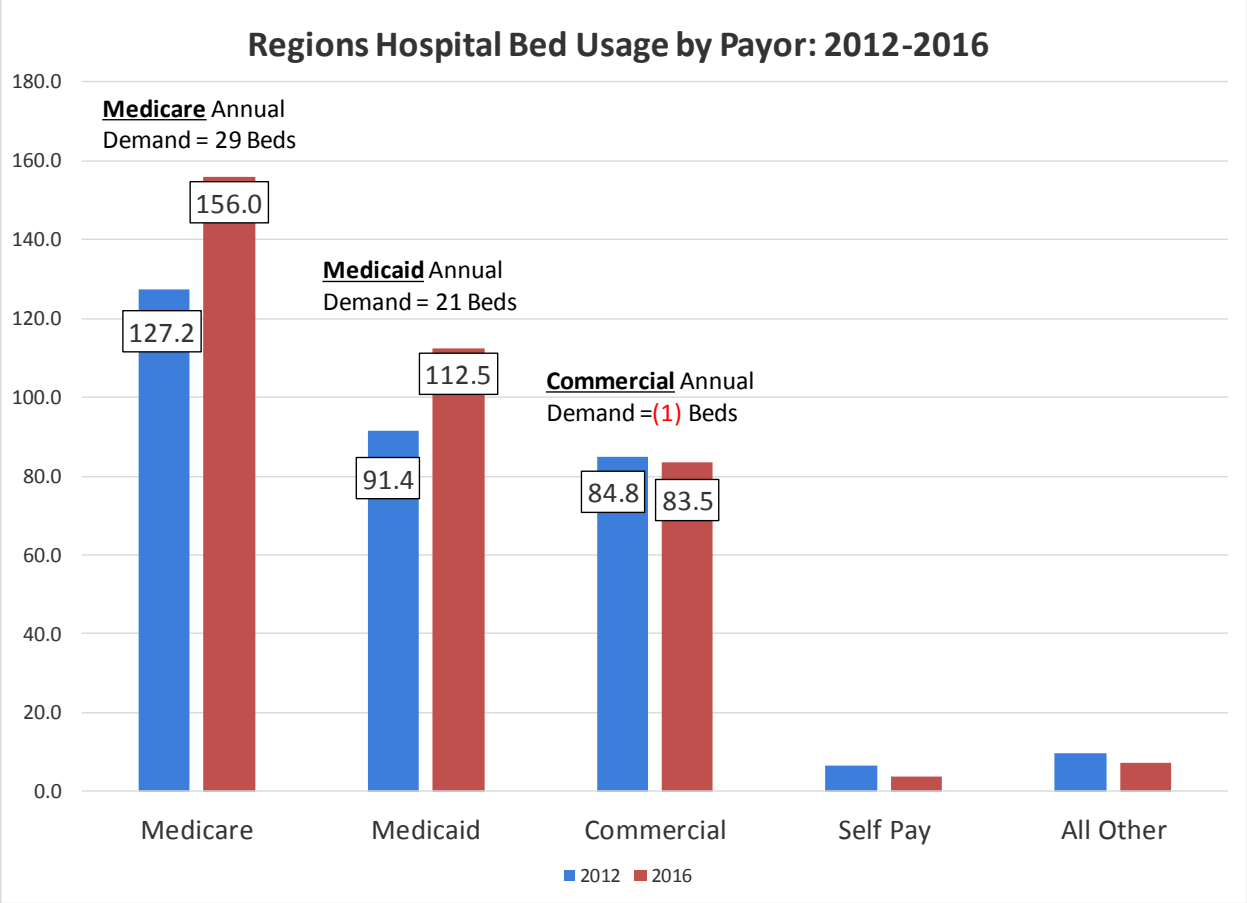
Discharges by Payor Group

Regions Hospital Discharges: Payor Groups	2012	2013	2014	2015	2016	2012-2016 Change	% Annual Change	%Change 2012 to 2016
Total	**26,553**	**25,938**	**27,338**	**26,609**	**27,495**	**942**	**0.7%**	**3.5%**
Medicare	8,956	8,828	9,764	9,698	10,402	1,446	3.2%	16.1%
Medicaid	7,895	7,727	8,124	8,135	8,094	199	0.5%	2.5%
Commercial	8,006	7,798	7,862	7,585	7,762	(244)	-0.6%	-3.1%
Self Pay	834	750	746	522	615	(219)	-5.3%	-26.3%
All Other	862	835	843	669	622	(239)	-5.6%	-27.8%

Bed use by Payor Group

Regions Hospital Bed Usage: Payor Groups	2012	2013	2014	2015	2016	2012-2016 Change	% Annual Change	%Change 2012 to 2016
Total	**319.7**	**325.0**	**341.1**	**338.8**	**362.8**	**43**	**2.7%**	**13.5%**
Medicare	127.2	133.2	144.7	143.7	156.0	29	4.5%	22.6%
Medicaid	91.4	91.0	99.9	106.1	112.5	21	4.6%	23.1%
Commercial	84.8	84.5	79.2	78.7	83.5	(1)	-0.3%	-1.6%
Self Pay	6.5	6.5	6.9	3.4	3.6	(3)	-8.9%	-44.4%
All Other	9.8	9.7	10.3	6.8	7.3	(3)	-5.2%	-25.9%

Source: *Minnesota Hospital Association*

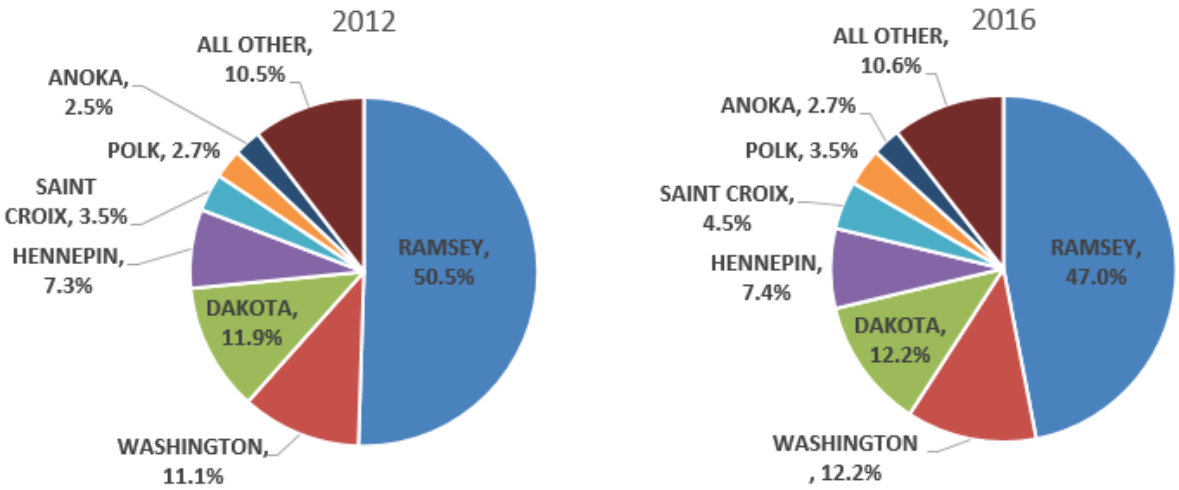


Ramsey County zip codes represent 16 of the top 25 zip codes with the highest numbers of Regions Hospital discharges. Washington County has four out of 25 and Dakota County has three. Along with our primary service area, our secondary service area in Saint Croix County rounds out our top 25.

Hospital Discharges: COUNTY & ZIP	ZIP	2012	2013	2014	2015	2016	2012-2016 Change	% Annual Change	2012 to 2016
RAMSEY	55106	2,249	2,054	2,226	1,952	2,044	(205)	-1.8%	-9.1%
RAMSEY	55117	1,363	1,347	1,407	1,281	1,379	16	0.2%	1.2%
RAMSEY	55104	1,422	1,346	1,282	1,324	1,287	(135)	-1.9%	-9.5%
RAMSEY	55119	1,178	1,039	1,116	1,185	1,152	(26)	-0.4%	-2.2%
RAMSEY	55113	946	887	954	916	962	16	0.3%	1.7%
RAMSEY	55109	733	726	698	709	755	22	0.6%	3.0%
DAKOTA	55118	731	639	690	641	722	(9)	-0.2%	-1.2%
RAMSEY	55103	749	744	696	685	711	(38)	-1.0%	-5.1%
WASHINGTON	55082	494	525	608	529	679	185	7.5%	37.4%
RAMSEY	55110	608	656	696	610	649	41	1.3%	6.7%
RAMSEY	55102	715	654	583	606	607	(108)	-3.0%	-15.1%
RAMSEY	55107	642	641	581	551	584	(58)	-1.8%	-9.0%
RAMSEY	55101	541	571	623	573	548	7	0.3%	1.3%
WASHINGTON	55125	559	535	514	525	548	(11)	-0.4%	-2.0%
WASHINGTON	55128	497	480	520	515	539	42	1.7%	8.5%
DAKOTA	55075	420	475	485	473	498	78	3.7%	18.6%
SAINT CROIX	54016	362	434	426	423	465	103	5.7%	28.5%
WASHINGTON	55016	420	363	446	416	450	30	1.4%	7.1%
RAMSEY	55112	449	407	467	467	447	(2)	-0.1%	-0.4%
DAKOTA	55076	443	357	390	435	402	(41)	-1.9%	-9.3%
RAMSEY	55116	429	422	431	394	392	(37)	-1.7%	-8.6%
RAMSEY	55126	355	334	363	402	389	34	1.9%	9.6%
SAINT CROIX	54017	248	245	266	318	354	106	8.5%	42.7%
RAMSEY	55105	307	293	335	337	348	41	2.7%	13.4%
RAMSEY	55108	320	279	272	290	254	(66)	-4.1%	-20.6%

Regions Hospital discharges from Ramsey County have declined since 2012 by 500 patients or 3.7 percent. However, Washington and Dakota County have grown, with Washington adding 401 and Dakota 196 more since 2012. Wisconsin counties (Polk and Saint Croix) have grown by more than 550 patients since 2012—6 percent annually.

The charts below summarize Regions Hospital discharges by county, as a percentage of the hospital's total discharges from 2012 and 2016. Ramsey County discharges are down overall and as a percentage of Regions' total admissions from 50.5 percent to 47 percent. All other counties are up, including Washington from 11.1 percent to 12.2 percent, Dakota from 11.5 percent to 12.2 percent, St. Croix (Wis.) from 3.5 percent to 4.5 percent and Polk (Wis.) from 2.7 percent to 3.5 percent.



3.2 Efforts to Reduce Utilization

Through our commitment to the Triple Aim, we strive to ensure patients receive the right level of care.

Regions Hospital and HealthPartners have long been committed to the triple aim: providing the highest quality care with an exceptional experience at an affordable price. This is the vision that drives our work. We have worked hard to reduce unnecessary hospitalizations and emergency department use. Our goal is to keep patients healthy and get them timely access to outpatient care, so that high-cost hospitalizations can be avoided. Some of these initiatives include the following:

- Since 2011, Regions and HealthPartners have been collaborating to reduce emergency department (ED) use and inpatient admissions per 1,000 for patients on HealthPartners Medicaid coverage. Through intensive disease and case management services, ED care plans, and education regarding how to use primary care or urgent care, we have reduced ED use and

inpatient admissions. Our ED use rates per 1,000 are down more than 5 points from 2014 to 2016, and our medical/surgical admissions rates per 1,000 are down by almost one point.

- Also in 2011, our emergency medicine physicians and cardiologists collaborated to develop, test and implement a low-risk chest pain protocol. This guideline identifies patients who can be safely discharged from the hospital with next day stress testing, based on the Thrombolysis in Myocardial Infarction (TIMI) risk score, clinical assessment and family/medical history. In lieu of a hospital admission, a next-day outpatient stress test is performed in the clinic. From 2012 to 2016, this program prevented hospital stays for 2,875 patients. This protocol is now a routine part of our clinical practice in the emergency room, and has been adopted at many sites across the country.

- We continue to identify ways to safely move surgeries to outpatient settings like our same day surgery center—a lower cost, high quality care alternative. Procedures such as cholecystectomies, thyroidectomies and laminectomies can now be done safely on an outpatient basis. Overall, our outpatient surgical volumes are projected to be 43% higher than 2012 (based on September 2017 annualized cases).

- In similar fashion, our organization invests to advance care to the most appropriate and lowest care settings, with an emphasis on providing great care and patient experiences at ideal locations. HealthPartners TRIA in Woodbury opened in September of 2017 providing outpatient orthopedic surgery. We expect this surgery center to reduce our average daily census at Regions by one patient per day. We have built future declines into our projection model.

- In collaboration with a community partner, we are piloting a new, innovative care model called Hospital at Home. This is a program designed for patients with congestive heart failure (CHF). After a short hospitalization to stabilize symptoms, the patient is discharged early to their home, where inpatient care continues. Through this home-based medical approach, we deploy a care team (physician and community paramedics), supplies (food and medications), and technology to stay connected with the patient in the home. While this pilot is very new, we are excited by our early results and hopeful we can safely spread this to additional diagnoses.

- Together with HealthPartners Medical Group (HPMG), Regions Hospital partners with Community Senior Care to reduce hospitalizations and readmission for patients in skilled nursing facilities, assisted-living facilities, transitional care units and in their home. Our Community Senior Care clinical teams provide care in more than 126 facilities across the east metro. They also see more than 200 patients in their homes through our Home-Based Medicine Program. Our teams work diligently to keep high-risk patients in their own environment to optimize their health, keep the cost of care affordable and improve the patient experience.

- In mental health, our single greatest barrier to reducing hospitalizations is finding safe alternatives for patients in need of services outside an acute inpatient setting. To reduce unnecessary days in a psychiatric hospital setting we have expanded our DayBridge program, a partial hospitalization program that provides daily structured care and therapy but allows the patient to go home nightly to a supportive environment. Through this program we served more than 400 patients per year. Without DayBridge, these patients would require an inpatient hospital bed. DayBridge will expand in 2018 to add intensive outpatient services, providing group therapy three days per week and assisting clients with continued recovery at home. In addition we are collaborating with our partners at Ramsey County to open an additional 16 bed Intensive Residential Treatment Services (IRTS) facility in Maplewood, Minn. Projected to open in April of 2018, this $7 million investment will serve 88 patients a year by moving them to a more appropriate level of care and providing services needed to transition them to independent living. We also support Hovander House--a short-term crisis stabilization facility and program for patients who are clinically and physically stable but require further support before returning to a community setting. Safe House is a licensed intensive residential treatment program, providing supportive and treatment services to approximately 60 adults per year suffering from mental and chemical health problems. Finally, in March of 2017 Regions teamed with two other east metro hospitals and Catholic Charities to provide the operating financial support to develop a 16-bed medical respite unit in St. Paul. The unit is designed to provide healing and recovery for homeless men and women after a hospitalization. The unit is staffed by nurses and supported by mental health and community health providers.

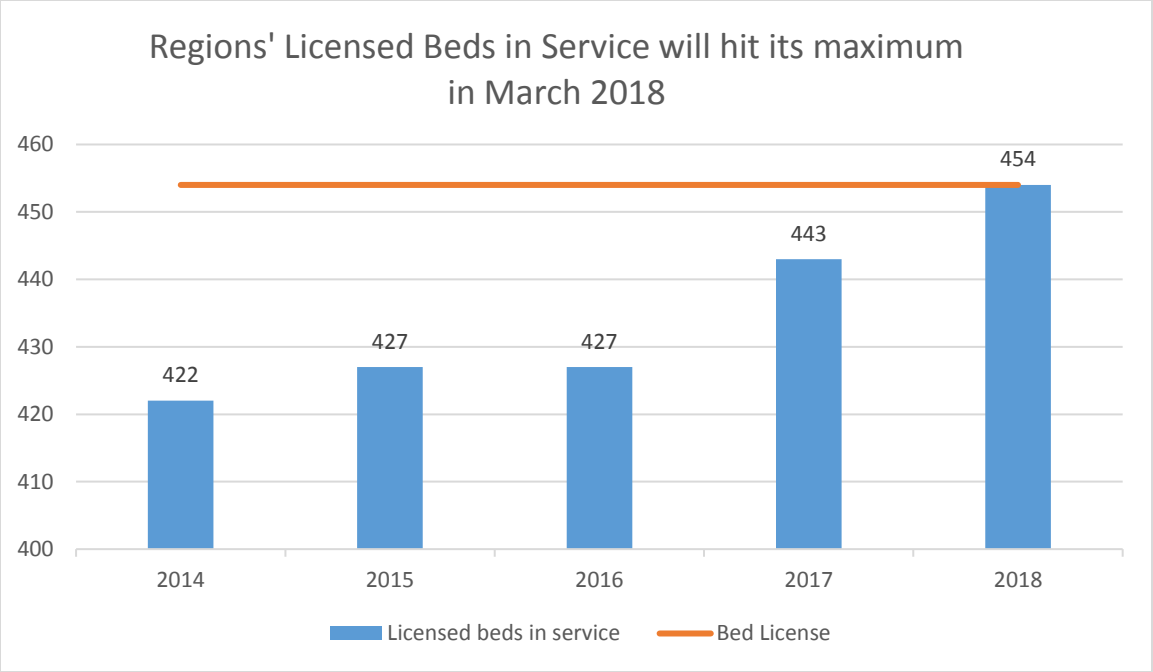
3.3 Current License Status

We need new bed licenses, so we can continue to invest in our campus. Over time our available supply of beds has decreased as we incrementally responded to growing demands for care.

Without additional licenses, we will have to reconsider what services we can provide to the community to continue to invest in the campus. Reducing our services is contrary to our vision–to provide service to all. It would harm access to safe, affordable care.

Our bed use as of March 2018 plus our requested beds are displayed below, separated into three types of bed use (medical/surgical, mental health and obstetrics). While our providers at Regions and HealthPartners diligently work to ensure patients receive care in the appropriate setting, we have not been able to offset the considerable demand for inpatient care over the last several years.

Our projections demonstrate a compelling need for more inpatient capacity in the east metro. Over time, this growth has required us to incrementally activate and staff all our licensed beds. As mentioned previously and depicted in the graph below, Regions will have all 454 bed licenses in use by March of 2018. Medical/surgical beds will continue to be our greatest need.



Because this limits our capacity to serve the east metro market, we request new bed licenses for our medical/surgical, mental health and obstetrics units to maintain current market share and meet the growing inpatient needs of our primary and secondary service areas.

Our anticipated bed use for March 2018 and our new license request are represented on page 18, separated into three groups of bed use (medical/surgical, mental health, and obstetrics):

	Beds Used as of March 2018	Requested License Additions	Total
Licensed Beds:			
Medical Surgical	318	60	378
Mental Health	100	20	120
Labor and Delivery and Triage	0	12	12
Ante Partum	4		4
Obstetrics	22	2	24
NICU	10	3	13
Total Excluding Bassinets	454	97	551
Bassinets	26	3	29
Total	480	100	580
Other Beds:			
Medical Surgical Observation	20	0	20
Mental Health	0	0	0
Labor and Delivery and Triage	12	-12	0
Ante Partum	0	0	0
Obstetrics	0	0	0
NICU	0	0	0
Total Excluding Bassinets	32	-12	20
Bassinets	0	0	0
Total	32	-12	20
Total Beds in Service:			
Medical Surgical Observation	338	60	398
Mental Health	100	20	120
Labor and Delivery and Triage	12	0	12
Ante Partum	4	0	4
Obstetrics	22	2	24
NICU	10	3	13
Total Excluding Bassinets	486	85	571
Bassinets	26	3	29
Total	512	88	600
Total Medical Surgical	338	60	398
Total Mental Health	100	20	120
Total OB and Baby	74	8	82

The three groups of beds (medical/surgical/intensive care/rehab, mental health, and obstetrics) have different characteristics and different analyses supporting their need. Medical/surgical and intensive care bed demand is driven by our growth and the expected needs of an aging population. Mental health is driven by existing market shortages and growth in population. Obstetrics is driven by our desire for more flexibility in rooming mothers and babies and will not affect the cost of care to the community or to patients.

Our models for future demand discussed below demonstrate a rising demand and census primarily based on demographic changes and population increase. At the end, these are translated into average daily census and compared to our license capacity. We believe we can operate consistently, safely, and efficiently at 85 percent of licensed capacity for medical surgical beds and 95 percent for mental health beds. We project it will require 60 additional medical surgical (which includes critical care) beds and 20 mental health beds, starting in 2020.

Our challenge is clear: we must keep pace with the healthcare needs of the communities we serve. The pressures on our system are not unique to Regions Hospital. We forecast critical increases in healthcare demand across the east metro. This is not a challenge that Regions alone can solve. But it is a challenge we are ready to face head on.

4.0 Regions Forecast of Bed Need

To create our bed need forecast we focused on medical/surgical beds and mental health. We used changes in population, utilization of services, length of stay and maintained market share.

We modeled our projections on two groups of patients – medical/surgical and mental health. The request for obstetric beds is based on quality and care changes, not growth in demand. To test our understanding of markets and bed need, we hired Wipfli, LLP, to create an independent bed need model for comparison. Wipfli is a national CPA and consulting firm with deep industry expertise in healthcare, specifically market and demand forecasting.

To develop our forecast, we considered four key factors:

- Changes in population
- Changes in utilization of services
- Length of stay
- Market share

Each of these will be discussed in depth for each bed type request–medical/surgical and mental health.

4.1a Changes in Population

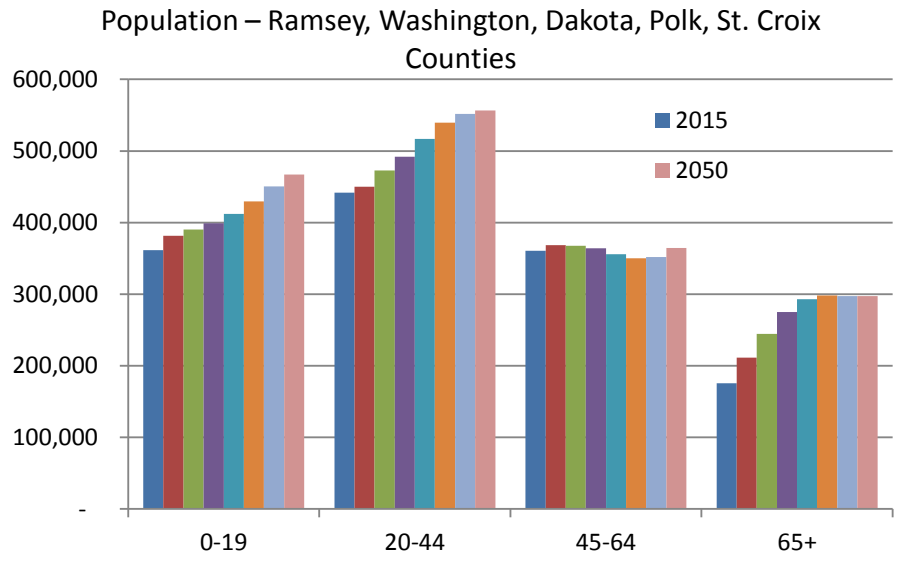
According to population projections from Minnesota and Wisconsin, the number of people age 65 and older will increase 69 percent from 2015-2050.

For the first factor in our model, changes in population, we obtained population projections from the websites of the Minnesota State Demographic Center and the Wisconsin State Demographic Center. Most of our projections are focused on growth in the Minnesota counties of Ramsey, Washington, and Dakota, and Wisconsin counties of Polk and Saint Croix. The changes in Regions' service area demographics, shown below, align with the national trend of an aging population.

Population for Ramsey, Washington, Dakota, Polk and St Croix Counties					
	0-19	20-44	45-64	65+	Total
2015	361,654	441,883	360,761	175,498	1,339,796
2050	467,215	556,512	364,706	297,170	1,685,603
Increase	29%	26%	1%	**69%**	26%

Our model is largely based on the county demographic projections in our primary and secondary service areas. The 65+ population is estimated to grow by 69 percent, while the 45-64 segment will grow one percent. Although the 20-44 demographic will grow 26 percent, their inpatient utilization rate per 1000 (excluding OB) is just 14 percent of the 65+ use rate. Including additional counties does not materially change these numbers. Bed need modeling also included Chisago, Hennepin and Anoka counties, plus 11 second ring Wisconsin counties, but at lower use rates.

The following chart shows projected population by major age group by county in five-year increments:



Source: Minnesota and Wisconsin Demographer's Office

4.1b Changes in Utilization of Services

Utilization rates are difficult to predict. We calculated current rates then decreased them slightly each five-year period.

The second factor in our model is inpatient utilization rates by age cohort. These rates show how frequently patients seek inpatient care now and projected into the future.

Our model begins with current hospital utilization by age and county and forecasts the expected utilization out to 2050. Current utilization rates are then decreased slightly each five-year period as we expect a continued small erosion in hospital use all the way to 2050. This applies equally to each age group. Utilization for people 20-44 will decrease at the same rate as those 65 and older.

While population changes are largely predictable and tracked by state agencies, estimates of future inpatient utilization rates are more difficult to predict. We know medical science will continue to advance and certain medical procedures that require hospitalization today will, in the future, increasingly be performed on an outpatient basis. We also know medical care will become more specialized and comprehensive rural care will become less accessible. These trends may continue to trigger growth from outside our primary service area.

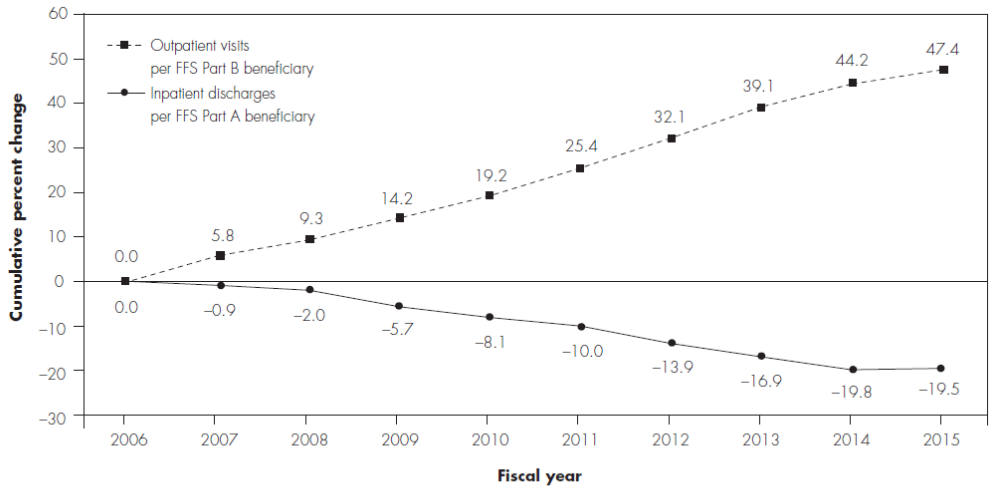
Many key questions about inpatient utilization rates remain to be answered, including:

- Medicare reduced hospitalization rates 35 percent through outpatient and observation status. Has the migration to observation status peaked? Will there be another change in the 2 Midnight Rule?
- Minnesota's inpatient utilization rate is already 18 percent lower than the nation. How much more can our state decrease inpatient utilization?
- For most hospitals, orthopedic care represents one of the largest inpatient volume drivers. However, Medicare recently approved outpatient knee joint replacement as of 2018. What effect will orthopedics' migration to outpatient settings have on hospitals?

According to a Medicare Payment Advisory Commission (MedPAC) report to Congress in March of 2017, Medicare inpatient discharges per beneficiary saw an uptick in 2015, the most recent data available. After eight years of steady decline in Medicare inpatient discharges per beneficiary, this uptick indicates:

- Medicare inpatient discharges per beneficiary may have reached a floor after continued downward pressure.
- The aging of the population and higher acuity of these older patients seem to be outpacing policy and operational changes aimed at keeping Medicare beneficiaries out of the hospital.
- Further decline in inpatient utilization among Medicare beneficiaries may not occur.

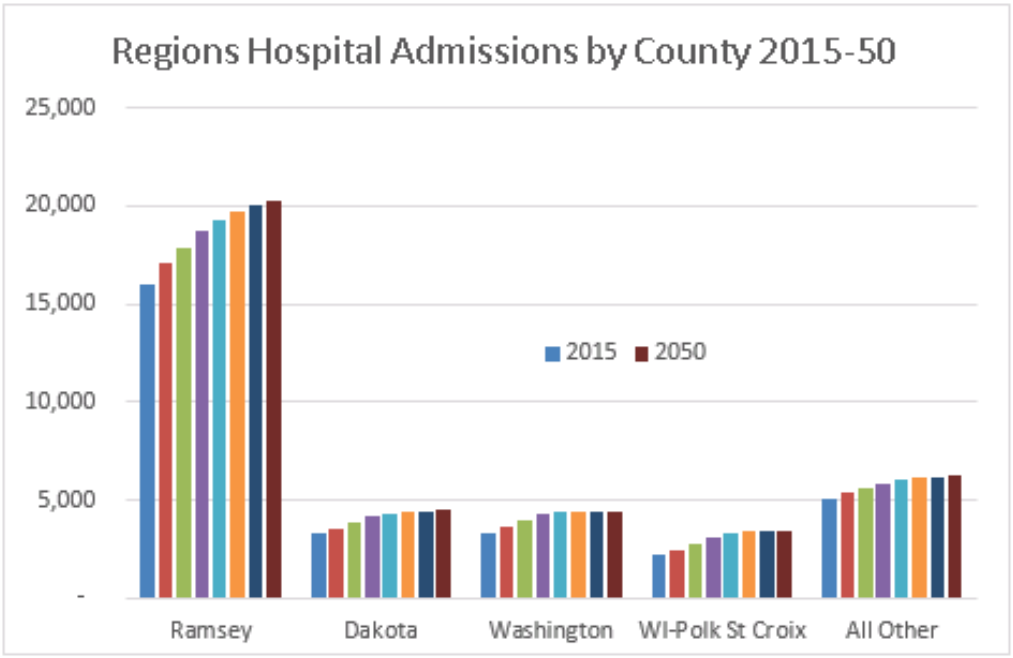
Medicare Inpatient Discharges per Beneficiary



Note: FFS (fee-for-service). Data include general and surgical, critical access, and children's hospitals.

Source: MedPAC analysis of CMS's inpatient and outpatient claims and enrollment data.

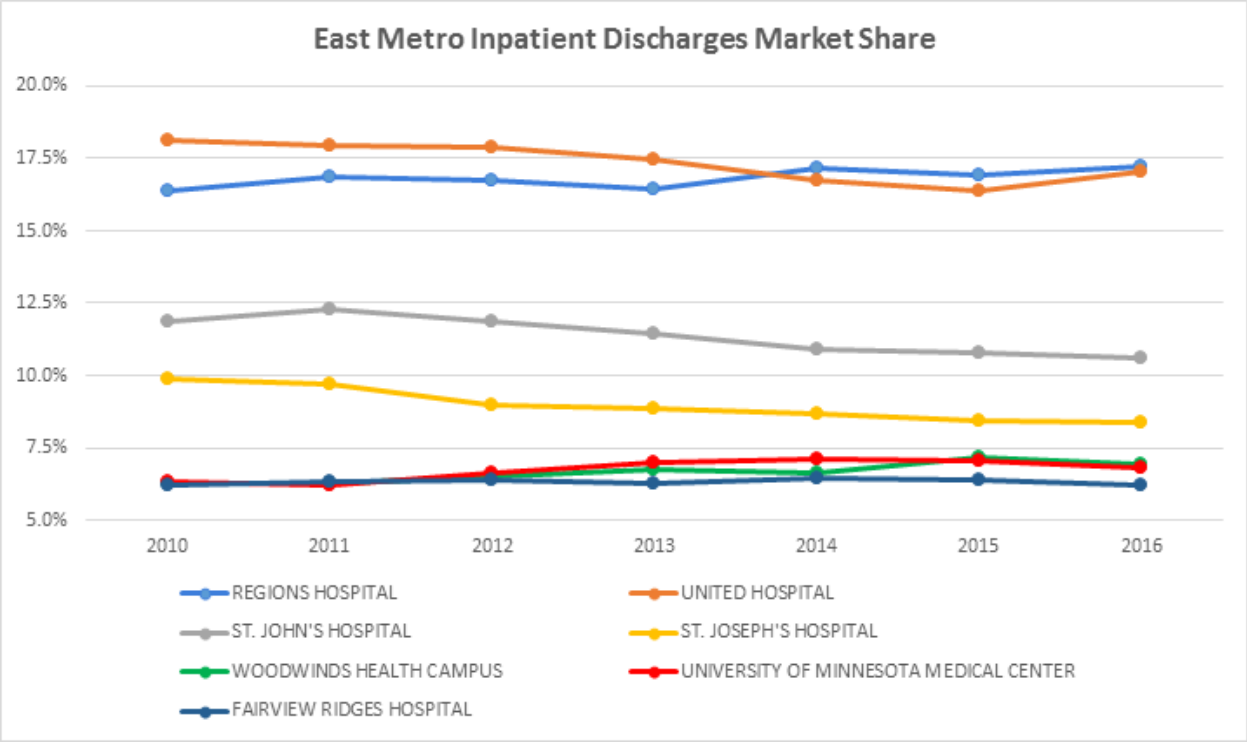
For our modeling purposes, we took our inpatient medical/surgical utilization rates per 1,000 population (by county) from 2015 and DECREASED them 0.5 percent (half of a percentage point) every five years out to the year 2050. The decline in utilization was intended to reflect the move to outpatient services offset by the increase in acuity as medical care advances. These utilization rates, applied to the future projected population figures by county, resulted in total inpatient admissions by county as summarized below:



4.1c Market Share

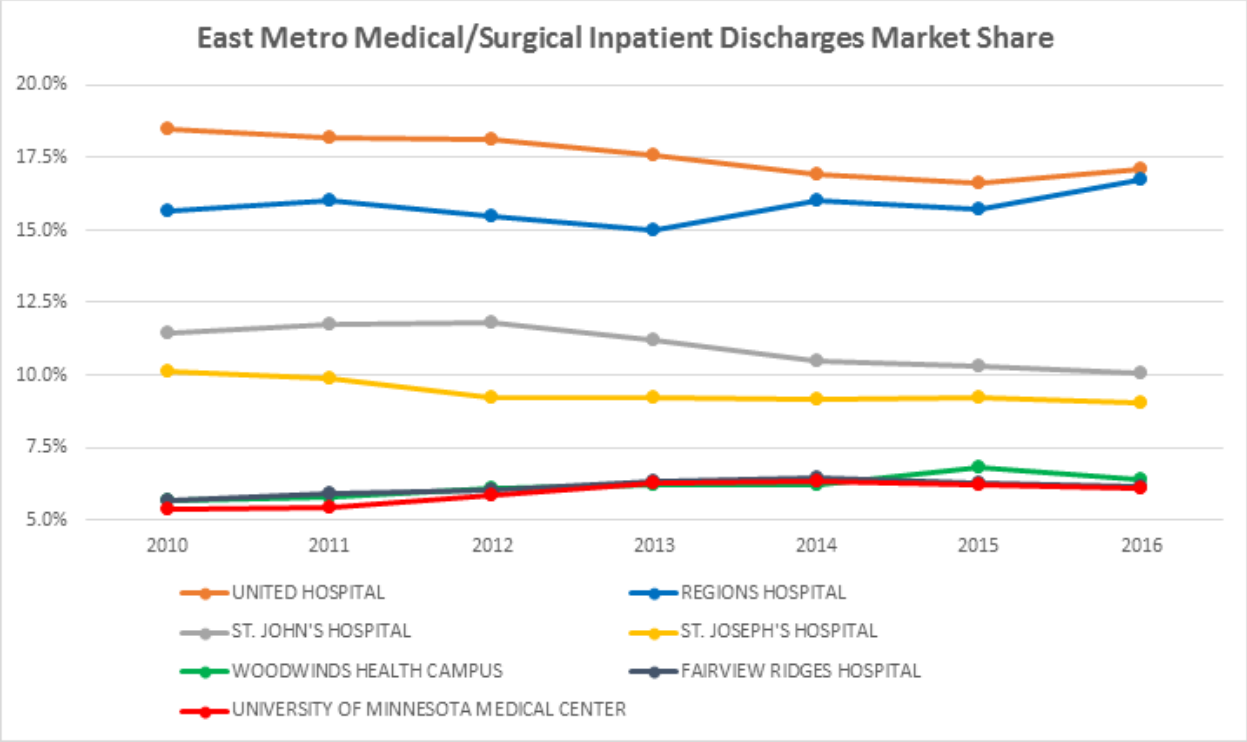
For our forecast, we held market share steady into the future. Our intent is not to gain share, but rather to allow us to continue to serve our share of the growing demand of the east metro.

No change in existing market share is included in these projections. Our market share rates are held flat throughout all years. Our intent for the bed license increase is meant only to allow Regions to continue to serve its proportional share of the growing demand of the east metro.



Notes: Shows percentage of total discharges for patients residing in Regions' service area, excluding Wisconsin.
Source: Minnesota Hospital Association; excludes patient observations

Regions Hospital has experienced an increase in overall market share as shown in the chart above. That increase has largely been driven by the increased need in medical/surgical beds as demonstrated by the medical/surgical discharge share growth over the past 4 years (below).



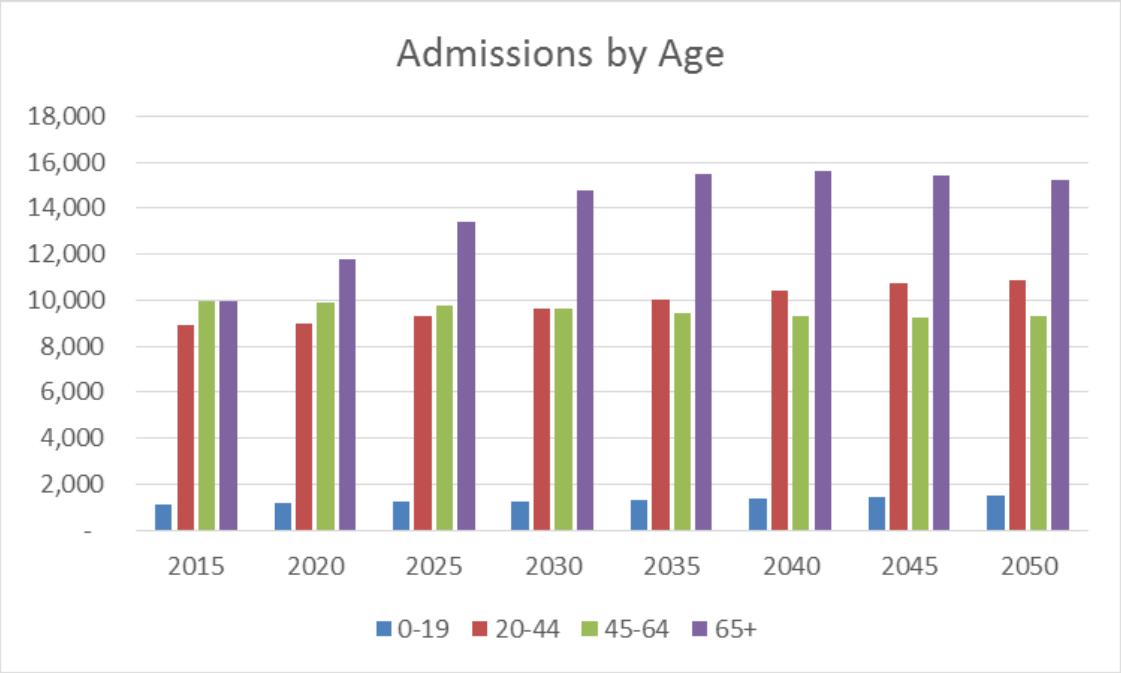
Notes: Shows percentage of total Medical/Surgical inpatient discharges for patients residing in Regions' service area, excluding Wisconsin. Excludes all chemical dependency, obstetrics, newborns, psychiatry, and rehab inpatient discharges.
Source: Minnesota Hospital Association; excludes patient observations

Market Share for East Metro Area Based on Inpatient Days

Hospital Name	2010	2011	2012	2013	2014	2015	2016
REGIONS HOSPITAL	17.6%	18.7%	18.4%	18.2%	18.7%	18.6%	19.5%
UNITED HOSPITAL	17.5%	17.4%	17.5%	16.2%	15.7%	15.1%	15.1%
ST. JOHN'S HOSPITAL	9.3%	8.9%	8.6%	8.5%	8.0%	8.0%	7.8%
ST. JOSEPH'S HOSPITAL	10.9%	10.6%	9.9%	10.1%	9.5%	9.4%	9.8%
WOODWINDS HEALTH CAMPUS	4.5%	4.2%	4.2%	4.3%	4.5%	5.1%	4.2%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	9.2%	9.2%	9.5%	10.0%	9.8%	10.4%	10.1%
FAIRVIEW RIDGES HOSPITAL	5.2%	5.2%	5.2%	5.4%	5.5%	5.6%	5.5%

Notes: Shows percentage of total inpatient days for patients residing in Regions' service area, excluding Wisconsin.
Source: Minnesota Hospital Association; excludes observation patients

Once the assumptions for population, utilization and market share are made, admissions can be calculated. The graph below captures the essence of this bed request – an aging population will create more hospital demand, despite a decrease in utilization. The population growth in the 65+ age group will add demand that Regions will need to serve.

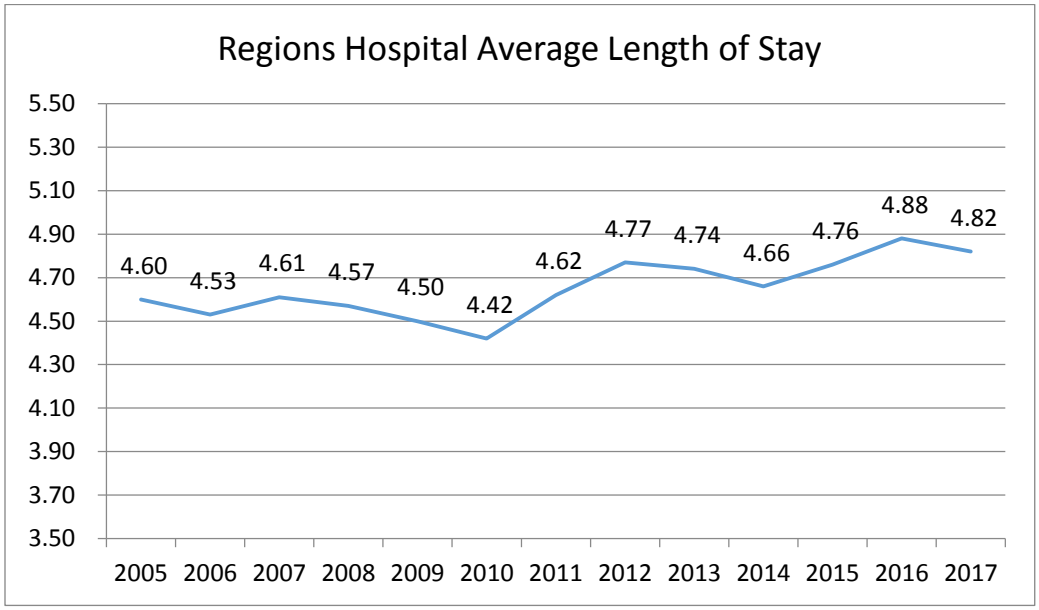


4.1d Length of Stay

Length of stay is also hard to project. Initiatives to keep patients healthy and out of the hospital will drive up the acuity of patients who require hospitalization.

The fourth and final factor in our model, length of stay, is also difficult to project. Hospitals have been reducing length of stay for years. However, lower-acuity patients now receive observation care, while only the sickest patients are admitted, meaning length of stay will rise. While the model assumes inpatient discharges per 1,000 will decrease over time due to advances in medicine and efforts to keep patients healthy and out of the hospital, these efforts will drive up the acuity of patients needing hospitalization and increase the length of stay. Furthermore, if a patient needs critical care services, the typical care setting is in an Intensive Care Unit (ICU). As the patient's health improves he/she will move to a general medicine bed. This standard hospital practice has become one of our biggest challenges, as it requires the proper ratio of Intensive care to general medicine beds.

Regions' overall acuity and case-mix index (CMI) has been on the rise for the past seven years. A hospital's CMI reflects the diversity, clinical complexity and need for resources to care for the patients. This has translated into a slight increase in overall average length of stay for Regions as seen in the chart below:



For forecasting purposes, we assumed a slight increase in average length of stay for medical/surgical patients only. We took this conservative approach to account for the aging of the population and the increase in case mix index (CMI), as stated earlier. The table below summarizes the average length of stay assumptions that we used to project bed need.

Average Length of Stay	2015	2020	2025	2030	2035	2040	2045	2050
Medical Surgical	4.7	4.8	4.8	4.9	4.9	4.9	5.0	5.0
Observation	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Behavioral Health	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Obstetrics	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

In summary, for medical/surgical admissions, bed demand is based on several factors, and their impact is summarized below:

Assumption	Regions Model	Bed impact by 2050
Population Growth	State demographer data	46
Utilization	0.5% decrease per 5-year period	(12)
Market Share	No change from current	0
Length of Stay	Slow rise as mix of 65+ rises	20
Other Bed Use	Small increases in observation and surgical extended recovery	6

4.2 Regions Hospital Forecast of Bed Need – Mental Health

We used the same four factors to project the need for mental health beds out to 2050, however our mental health care facility only has room for 20 additional beds.

The Regions' model for estimating mental health bed needs relied on the same four variables – population growth, change in utilization, market share, and length of stay. In many respects, however, this type of root cause analysis of bed needs for mental health is irrelevant. In 2012, Regions opened a new behavioral health building with 100 staffed beds, with space for an additional 20 beds in the future. Our bed license request would bring those 20 beds into service.

Our model makes the following assumptions (Note: these likely underestimate our need for additional beds, given recent trends in which other area hospitals have either closed or restricted beds.):

- Utilization: Regions assumes the same utilization per 1000 of its mental health beds.
- Market share: Regions did not include any market share growth for mental health beds.
- Length of stay: Regions assumed a flat average length of stay for its mental health beds. We have experienced variability in length of stay from year to year, primarily driven by the availability of other community resources. These include state-operated services, residential treatment facilities, community services, commitment services, and many others.

Our model conservatively projects the following mental health bed demand:

Regions' Estimate for Added Mental Health Beds Based on Population Growth						
2020	2025	2030	2035	2040	2045	2050
2	5	8	11	14	16	18

Our physical plant will only allow us to safely and reasonably accommodate an additional 20 inpatient mental health beds which is the basis for our request for 20 licenses. We are confident they will fill quickly. In fact, from January 2016 to September 2017, Regions had to turn away nearly 3,500 requests for direct patient transfers for inpatient mental health services.

4.3 Obstetrical Care

Our projection is based on care model changes designed to improve experience and outcomes for mothers and babies.

Our bed projection model focused on medical/surgical and mental health inpatient care, based on the assumption the east metro had adequate capacity for birthing mothers. On September 7, 2017, St. Joseph's Hospital closed its labor and delivery unit. This, along with our population growth data, prompted us to analyze obstetrical (OB) bed needs for the market. Wipfli built a model incorporating Regions' past birth admissions data using projected population growth and flat birth rate estimates. Based on these factors, Regions needs an additional two licenses to increase services for mothers and babies and 18 licenses to transform our model of care. Our obstetrics program currently uses a mix of 74 beds to care for mothers and babies:

	Beds in Use
Licensed Beds:	
Triage, Labor and Delivery for patient flow	
Antepartum Care	4
Obstetrics	22

Inpatient Beds for mothers	26
NICU (Special Care Nursery)	10
Total Inpatient Beds	36
Basinets, Licensed separately	26
Observation Beds (Do not require a license)	
Triage, Labor & Delivery	12
Total Physical Beds Serving Mothers & Babies	74

There are three requests for our obstetrics program:

- Grant two bed licenses to increase the number of mothers we serve. Even before St. Joseph's Hospital closed its labor and delivery unit, our OB unit would occasionally need to close its doors to new admissions due to a lack of available postpartum beds. In 2016, we were unable to accommodate new delivering moms for a total of 72 hours. As we forecast demographics and changes in east metro OB services, we believe more mothers living close to Regions Hospital will need our care. The Wipfli model forecasts a need for four more inpatient beds. If we remodel our facilities, we will have room for two more inpatient beds.

- As we remodel, we would like to build a few "couplet" rooms – inpatient rooms where a mother and her baby can stay together. In a couplet room, the permanently placed bassinet would be considered an inpatient bed based on licensing criteria. It will not change reimbursement, but would greatly enhance the experience for a mother to stay in the room with her baby. To support our plan for couplet rooms, we are requesting six additional licenses.

- Laboring mothers use beds on our OB unit that are classified as triage or labor and delivery. When the mother is ready to be admitted, a transfer of beds is needed so that proper admissions can occur to a licensed bed. We have 12 triage, labor and delivery outpatient beds, with a projected need of 14. Allowing some of these beds to be inpatient would enhance patient flow and improve the mother's experience. It would not increase utilization or reimbursement. As a result, Regions is asking for 12 additional licenses to convert these observation beds to inpatient beds.

With additional bed licenses, following the remodel of our mother-baby unit, the total bed configuration would be as follows:

	Beds in Use	Requested Beds	Total
Licensed Beds:			
Triage, Labor and Delivery for patient flow		12	12
Antepartum Care	4		4
Obstetrics	22	2	24
Total Inpatient Beds for mothers	26	14	40
NICU (Special Care Nursery)	10	3	13
Total Inpatient Beds	36	17	53
Basinets, Licensed separately	26	3	29
Observation Beds (Do not require a license):			
Triage, Labor & Delivery	12	-12	0
Total Physical Beds Serving Mothers & Babies	74	8	82

4.4 Wipfli Forecast of Bed Need

Wipfli Consulting created an independent bed need model for comparison, using ideal occupancy rates and including all service lines.

Wipfli used the same demographic data provided by the states of Minnesota and Wisconsin. However, they used a logarithmic and statistical method of estimating inpatient utilizations through 2050. As with Regions, Wipfli did not include any changes in market share. There were some slight variances in assumptions between the two models, but these can be considered negligible in terms of the overall bed need. A comparison of the models demonstrates similarities and at least one key difference:

- Wipfli's model includes all inpatient specialties including OB services. Regions' model excludes OB and assumed the bed need for this service would remain at existing levels.

- Wipfli's bed need model uses similar ideal occupancy rates to calculate inpatient bed need by bed type. For example, Wipfli used an 85 percent occupancy rate for medical/surgical/observation beds and 95 percent for mental health beds. These were the same

rates used for the Regions model.

- Wipfli's bed need model includes observation and extended recovery patients, similar to Regions' model.

The Wipfli model estimates that our future bed shortage (indicated by red numbers) will primarily be driven by medical/surgical beds—a reasonable assumption since these beds are mostly utilized by older patients with more acute conditions. The Wipfli model also projects a shortage in mental health beds, although smaller than medical/surgical.

Year	2015	2020	2025	2030	2035	2040	2045	2050
Wipfli Estimated Bed Shortages by Type								
Med/Surg + Observation (85% Occ.)	(1)	(1)	(13)	(24)	(34)	(43)	(51)	(60)
Rehab (90% Occ.)	4	5	4	4	3	3	3	2
Behavioral Health (95% Occ.)	(2)	(5)	(9)	(13)	(16)	(19)	(22)	(24)
OB (70% Occ.)	4	2	0	(1)	(2)	(2)	(3)	(4)
Total All Bed Types	**5**	**1**	**(17)**	**(33)**	**(48)**	**(61)**	**(74)**	**(86)**

4.5 Wipfli projects for population, utilization, market share and length of stay

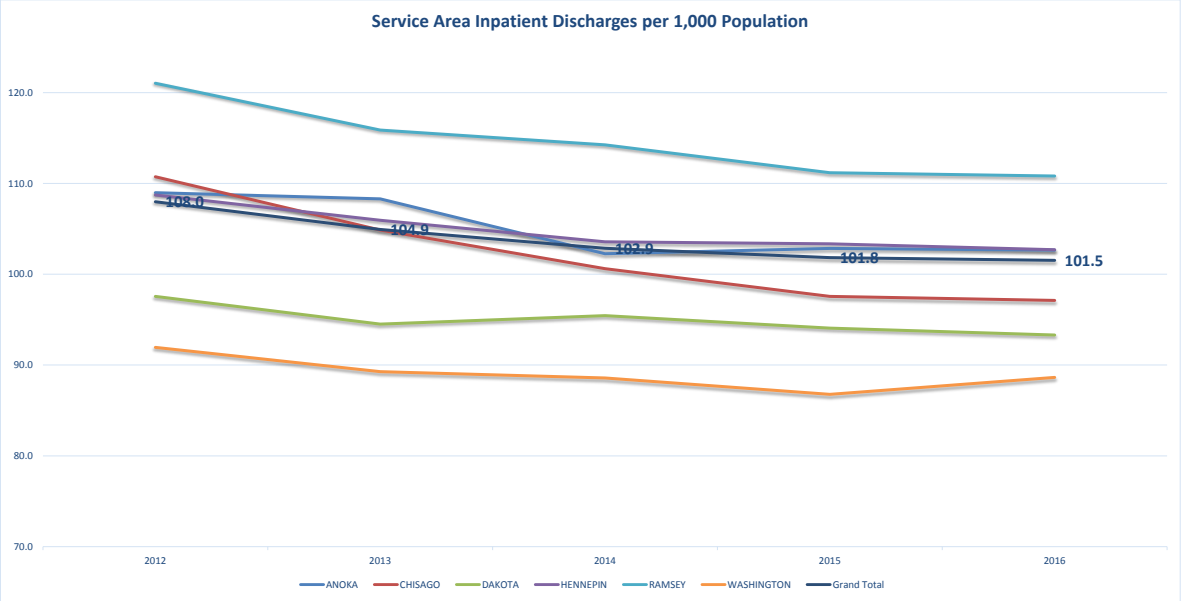
Wipfli used the same population data as Regions, but in contrast used a logarithmic regression model to forecast future inpatient discharges.

Wipfli Changes in Population

For consistency, Wipfli used the same population data for its projection model as we did. In other words, the demographic data is identical in both models.

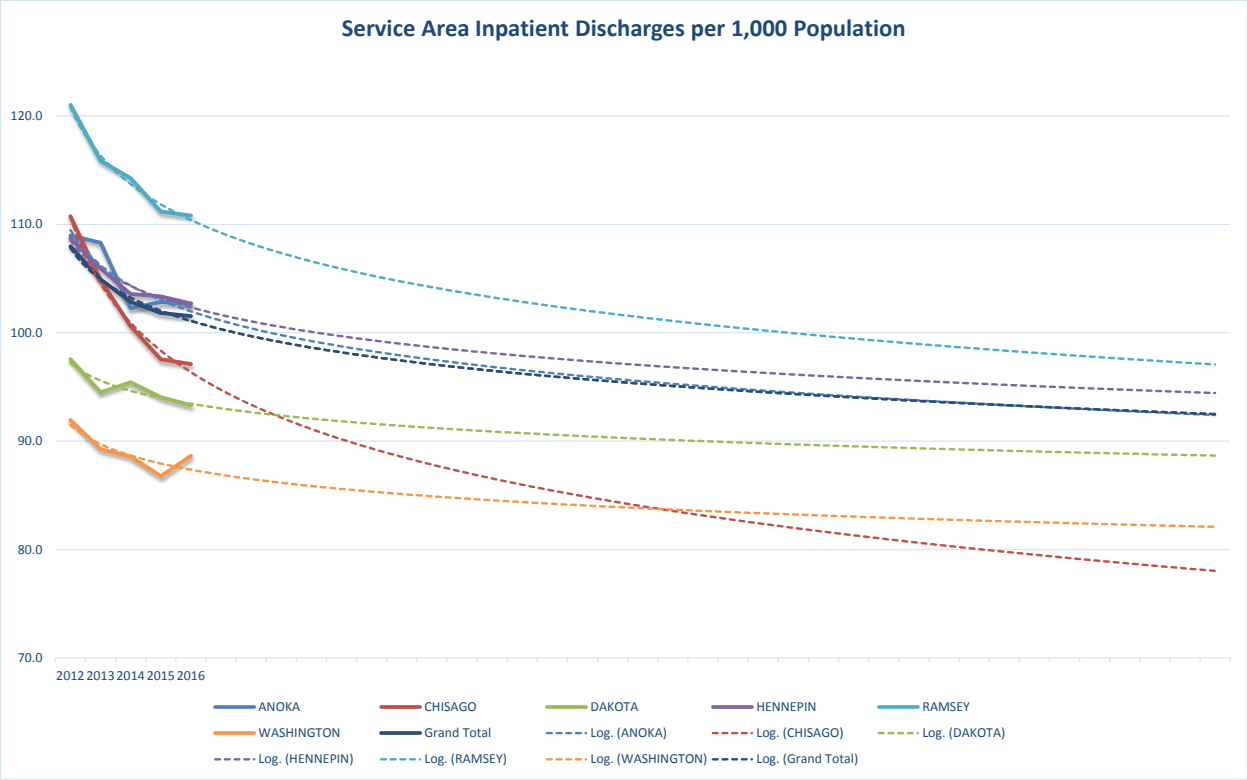
Wipfli Utilization

Wipfli took a different approach to projecting future inpatient utilization rates. Instead of discounting utilization rates 0.5 percent every five years, Wipfli used a logarithmic regression model to forecast future inpatient discharges per 1,000 and inpatient days per 1,000 based on historical trends. First, Wipfli analyzed historical inpatient discharges per 1,000 and days per 1,000 trends by county as shown below (for Anoka, Chisago, Dakota, Hennepin, Ramsey and Washington County).



Source: Wipfli

Next, Wipfli used a nonlinear logarithmic regression analysis to estimate future inpatient discharges per 1,000 and inpatient days per 1,000 out to year 2050. Nonlinear logarithmic regression is a form of regression analysis in which the historical utilization rates are modeled by a function which is a nonlinear combination of the model parameters. We know the utilization rate for inpatient services is nonlinear as the rate will not drop indefinitely. The results of our regression analysis by county is shown below.



The logarithmic regression analysis created a predictive formula for future inpatient discharges per 1,000 that Wipfli used to project inpatient discharge rates per 1,000 population for each county.

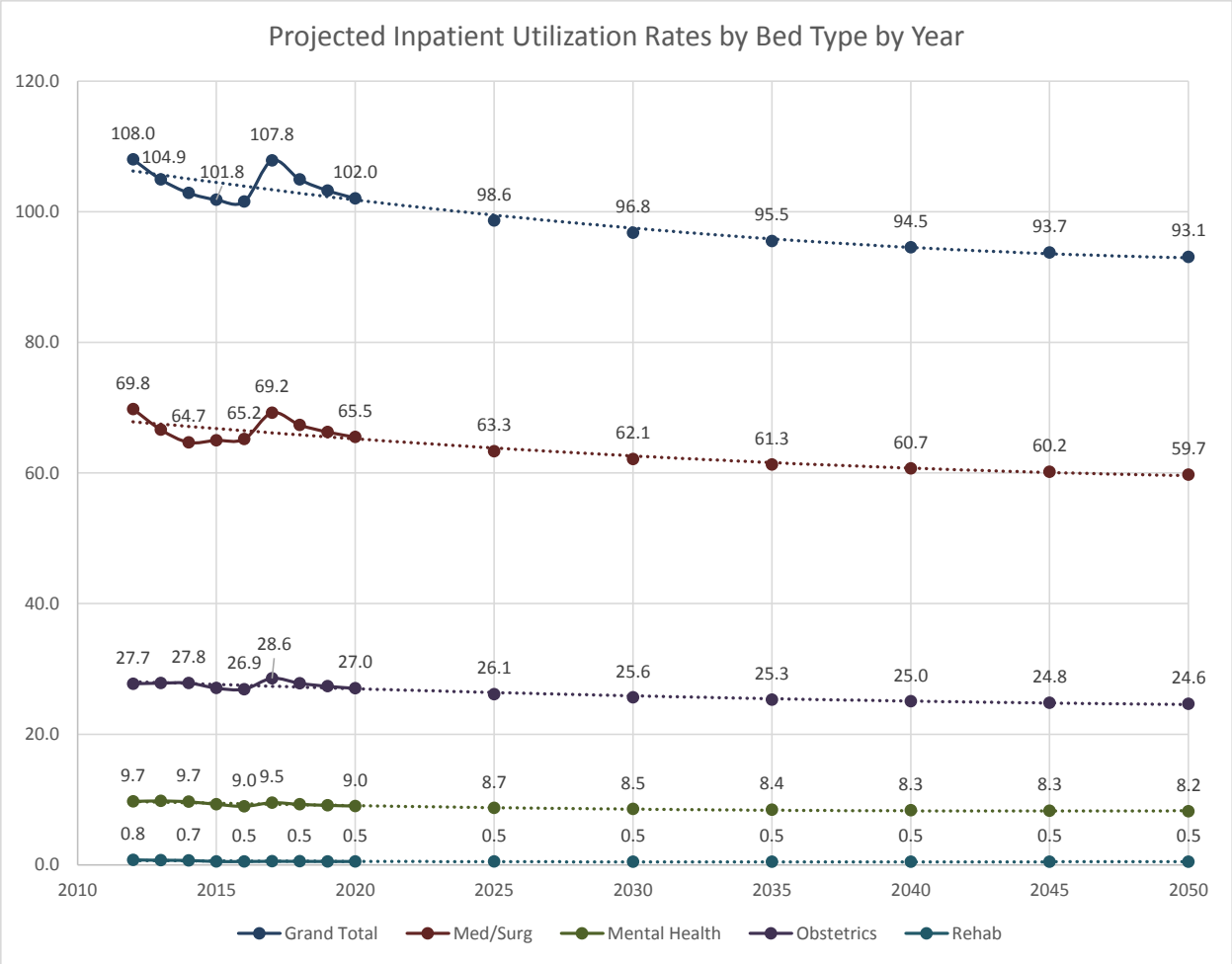
Ramsey County Example:

$$y = -10.84\ln(x) + 472.94$$

Ramsey County Inpatient Discharges per 1,000 = -10.84 Log (Projection Year - 2016) + 472.94

A similar formula was developed for inpatient days per 1,000 by county. Historically, discharges per 1,000 in the selected counties have been declining, however this has coincided with a rise in average length of stay. Because future inpatient discharges per 1,000 are dropping more aggressively than inpatient days per 1,000 over the projection period, Wipfli anticipates a continued rise in average length of stay over the projection period.

Results are shown below. While there is a projected decline in utilization rate for each county, the decline starts to flatten out between years 2025 and 2030. During the same period the Medicare population will continue to grow, and acuity will continue to rise which will increase average length of stay and push bed need further upwards.



Wipfli Commentary on Market Share:

Like Regions' model, Wipfli did not include any shifts in market share in its bed need analysis.

Wipfli Commentary on Length of Stay

Wipfli also calculated average length of stay to estimate bed need. Wipfli's methodology was different and independent of Regions. Wipfli used the results from the previous logarithmic exercise to calculate average length of stay by bed type for the market (not Regions). Specifically, the Wipfli model divided total calculated inpatient days (by bed type) by total calculated inpatient discharges (also by bed type).

Average Length of Stay	2015	2020	2025	2030	2035	2040	2045	2050
Wipfli (Med/Surg)	4.1	4.2	4.4	4.5	4.5	4.6	4.6	4.6
Wipfli (Behavioral Health)	8.2	8.3	8.6	8.8	8.9	9.0	9.1	9.1
Wipfli (Obstetrics)	2.9	3.0	3.1	3.1	3.2	3.2	3.2	3.2
Wipfli (Rehab)	13.1	13.2	13.7	13.9	14.1	14.3	14.4	14.5

The Wipfli methodology estimates an increase in average length of stay across all bed types. The Regions model only increases ALOS for medical/surgical beds. For this reason, we will only compare the

ALOS for this bed type between the two models. As seen below, the Wipfli model is projecting consistently higher percentage increases in ALOS compared to the Regions model. Therefore, it is reasonable to conclude the Regions model bed need, based on these lower ALOS growth figures, is therefore more *conservative* than the Wipfli estimated bed need.

Average Length of Stay Change from Previous Period (5 Year Period)						
	2025	2030	2035	2040	2045	2050
Regions Model	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Wipfli Model	3.4%	1.9%	1.3%	1.0%	0.8%	0.7%

4.6 Comparison of Results – Regions Hospital vs. Wipfli

There are important similarities between the Regions bed need forecast model and the Wipfli model.

In comparing the models' bed need shortages over time (below), there are striking similarities starting in year 2025. The models show consistently similar bed shortages despite their different approaches and methodologies. The bed need begins diverging between the models in 2050. The Regions model is more conservative in 2050, calling for fewer medical/surgical beds than the Wipfli model.

Excess of (Shortage) of Medical/Surgical and Mental Health Beds						
Year	2025	2030	2035	2040	2045	2050
Regions Model	-17	-41	-57	-67	-76	-76
Wipfli Model	-17	-33	-48	-61	-74	-86

4.7 Patient Acuity (Level of Illness) and Bed Use (Occupancy Rates)

We have experienced increasing occupancy rates and CMI over the past seven years. Sometimes high occupancy and resulting lack of beds forces us to close our emergency department temporarily to patients transported by ambulance.

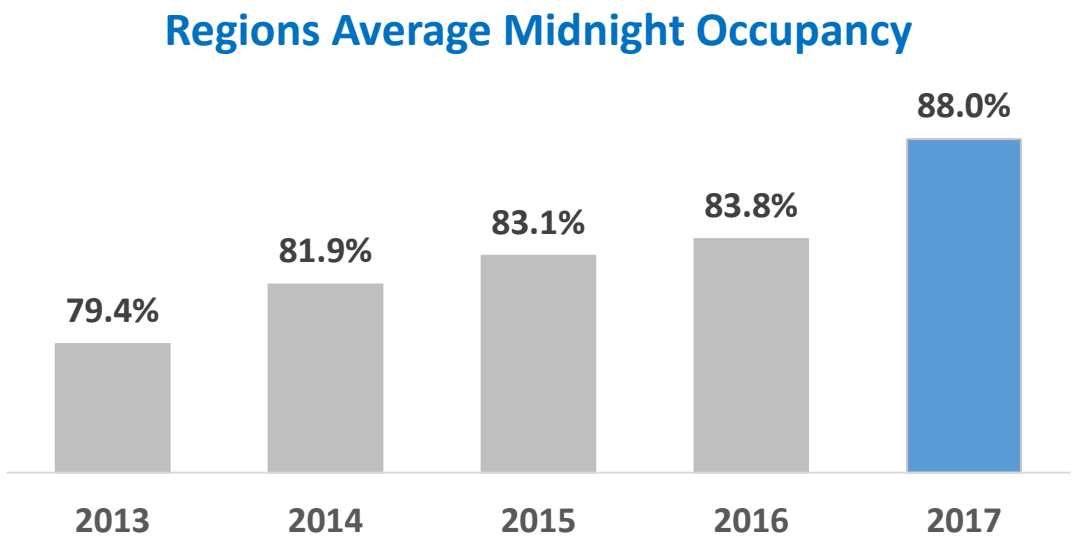
As mentioned earlier in this report, for the last seven years we have been experiencing an increase in overall inpatient acuity and case mix index (CMI) of the patients we serve.

As depicted below, Regions' CMI rose 2.2 percent since 2012. Also since 2012, bed use is up by 11 beds per year; however, when adjusted for CMI, beds are up by 5.2 percent or 21 beds per year.

Regions Hospital: Actual & CMI Adjusted Beds	2012	2013	2014	2015	2016	2012-2016 Annual Change	% Annual Change	%Change 2012 to 2016
MSDRG CMI	1.47	1.50	1.54	1.57	1.63		2.2%	10.9%
Inpatient Bed Usage	326.3	325.0	344.5	342.2	362.8	9.1	2.2%	11.2%
Inpatient Bed Usage (CMI Adjusted)	326.3	332.9	348.8	372.5	413.1	21.7	5.3%	26.6%

As demand for higher-acuity services has increased, our approach to staffed bed growth has been carefully measured and conservative. A staffed bed is added only when absolutely necessary. Each addition has been studied prior to implementation. Despite our thoughtful response to community demand, we will be using 100 percent of our available bed licenses by March of 2018. This means we are no longer able to meet increasing demands for care.

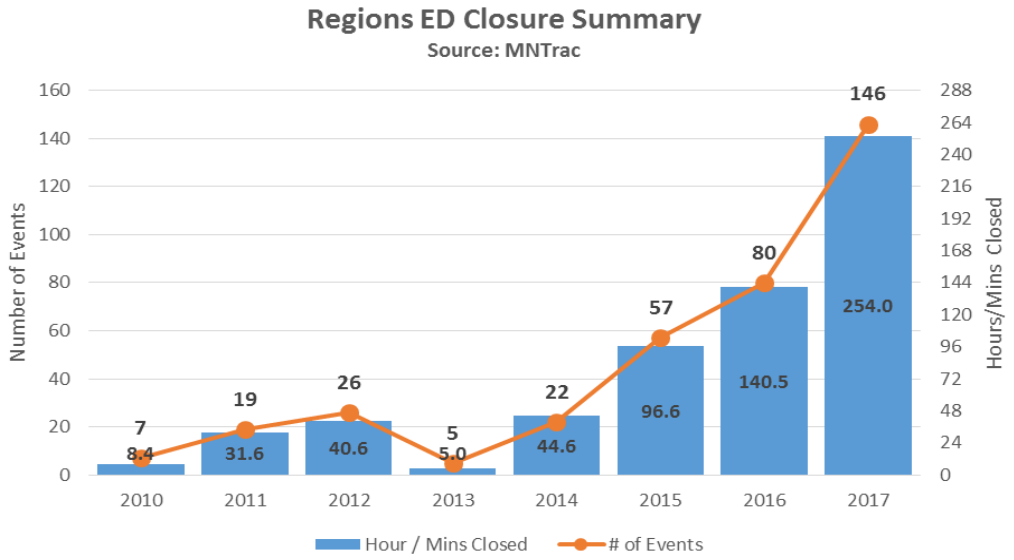
Moreover, our occupancy rate for medical/surgical beds (intensive care and general care beds for medical and surgical patients), has been increasing year over year. Regions' medical/surgical midnight bed occupancy in 2017 averaged 88 percent--an increase over 2014 of 7.1 percent.



According to hospital flow expert Eugene Litvak, president and CEO of the Institute for Healthcare Optimization, and adjunct professor at Harvard School of Public Health, turn-away (divert) rates increase exponentially when occupancy rates exceed 80-85 percent. Having available beds allows hospitals to safely care for patients by ensuring they receive the appropriate level of care. Patient flow is maintained if hospitals are discharging patients while onboarding others.

However, because of our focus on efficiency, our medical/surgical midnight occupancy averaged 88 percent. But a rate that high can be difficult to sustain. For example, our emergency department (ED)

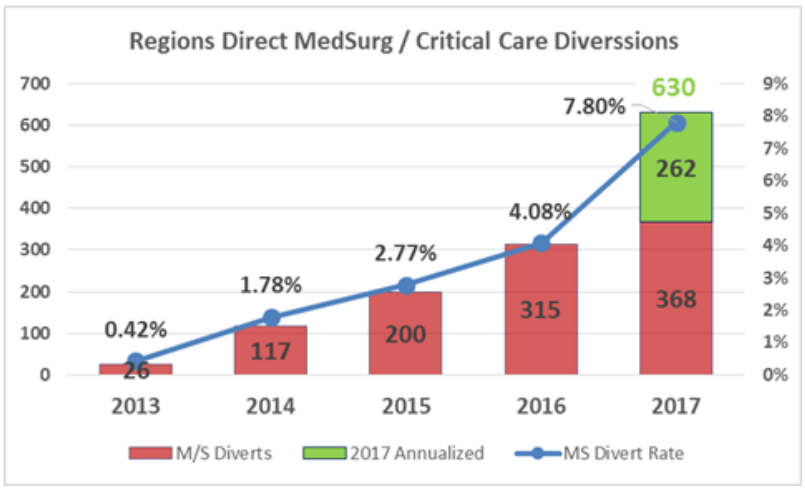
has increasingly needed to redirect ambulance-transported patients to other hospitals. In 2014, the ED recorded 22 of these diversion events lasting 45 hours. With nearly six weeks left in 2017, we have recorded 146 diversions spanning 254 hours.



Emergency departments temporarily close to ambulance transports for a variety of reasons, including a shortage of available beds. When the expected number of admissions exceeds the number of available beds, patient care leaders will likely call a diversion to maintain safe clinical care.

Over the past five years, hospitals in the east metro have seen a sharp increase in the number of hours they have been on ED divert. In 2013 east metro hospitals logged a combined 120 hours in diversion mode. In 2017 that number could hit more than 919 hours.

Increasingly, we have refused direct patient transfers from other hospitals due to a lack of available beds. Regions Direct is an admissions service for referring facilities. If a patient at another hospital needs a higher level of care, a physician or care manager can contact Regions Direct and we will work to accept the patient. This unique service helps patients avoid another ED visit, avoid repeating tests and helps ensure a safe patient handoff with physician to physician communication. Here too, we have seen an increase in requests along with diverts. Given our high occupancy level on a day-to-day basis, patients from other facilities may not get access to the specialized care they expect and deserve.

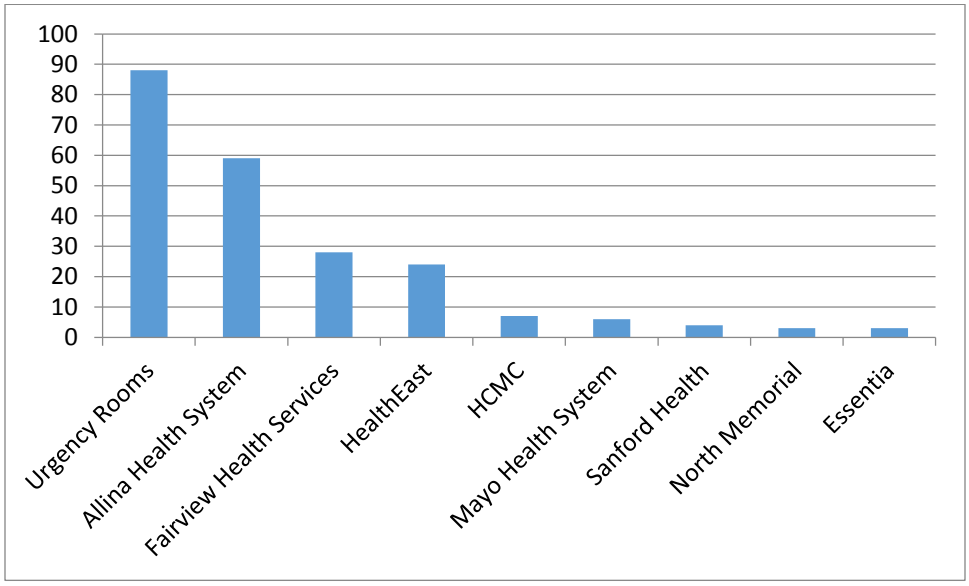


Source: Regions Hospital Direct Program data

We carefully track the requests for beds including those we accept and those we must decline, or divert, because of a lack of beds. This helps us understand the needs of the community. In our year to date medical/surgical divert data, the HealthPartners system (clinics and hospitals) represents less than half of the requests we had to decline. The remainder came from across the community and western Wisconsin.

The chart below summarizes requests for patient admissions we had to decline from other health systems—a clear statement our services are needed to meet the needs of patients.

Regions Medical/Surgical Diverts from Minnesota Health Systems, through October 31, 2017.



5.0 Market Analysis

As noted throughout this proposal, we expect demand for care to increase across the east metro and western Wisconsin as our population continues to age. The sections below will discuss the east metro's current bed availability, inpatient market share and associated service line volume trends, and the impact these factors will have on staffing and hospital facilities.

5.1 The East Metro Community of Care

Regions has maintained a high and increasing number of staffed beds in the east metro, while other facilities have maintained steady numbers.

As indicated in the table below, there has been very little change to the number of staffed beds in St. Paul over the last several years. Regions has maintained a high and increasing number of staffed beds and we expect to staff 100% of our available bed licenses in 2018. It should also be noted that St. Joseph's Hospital closed its labor and delivery unit in September 2017. It is unclear whether those beds have been repositioned for use as another bed type.

	2014			2015			2016			2017		
	Licensed	Staffed	Utilization	Licensed	Staffed	Utilization	Licensed	Staffed	Utilization	Licensed	Staffed	Utilization
Regions	454	422	93%	454	427	94%	454	427	94%	454	433	95%
United	546	392	72%	546	391	72%	546	391	72%	546	391	72%
St. Joe's	401	239	60%	401	239	60%	401	239	60%	401	239	60%
Total St. Paul	1,401	1,053	75%	1,401	1,057	75%	1,401	1,057	75%	1,401	1,063	76%

Note: *For 2017, we assume United Hospital and St. Joseph's staffed beds remain the same as 2016.*

Source: *United Hospital data from Allina annual disclosure reports via EMMA (https://emma.msrb.org/IssueView/IssueDetails.aspx?id=EP331881); St. Joe's data from HealthEast quarterly financial disclosure reports via EMMA (https://emma.msrb.org/IssueView/IssueDetails.aspx?id=EA358240); MDH Health Economics Program analysis of Hospital Annual Reports, March 2016*

As referenced earlier, the population in the east metro is growing, especially among people 65 and older. As indicated in the table on page 40 the demographics of the east metro population vary from county to county. Ramsey County is the most diverse with a large population of Asian and Black or African American residents, compared to the other counties in the east metro.

Race and Ethnicity in the East Metro

Race	Ramsey	Washington	Dakota	St. Croix (WI)
White	68.8%	86.9%	85.3%	96.2%
Black or African American	12.0%	4.4%	6.3%	0.8%
American Indian and Alaska Native	1.0%	0.5%	0.6%	0.4%
Asian	14.8%	5.8%	4.9%	1.1%
Native Hawaiian or Other Pacific Islander	0.1%	0.1%	0.1%	N/A
Two or More Races	3.4%	2.3%	2.8%	1.4%
Total Population	**540,649**	**253,117**	**417,486**	**88,029**

Note: *Data reported as of July 2016*

Source: *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk (for Minnesota data); https://www.census.gov/quickfacts/fact/table/stcroixcountywisconsin/PST045216 (for Wisconsin data)*

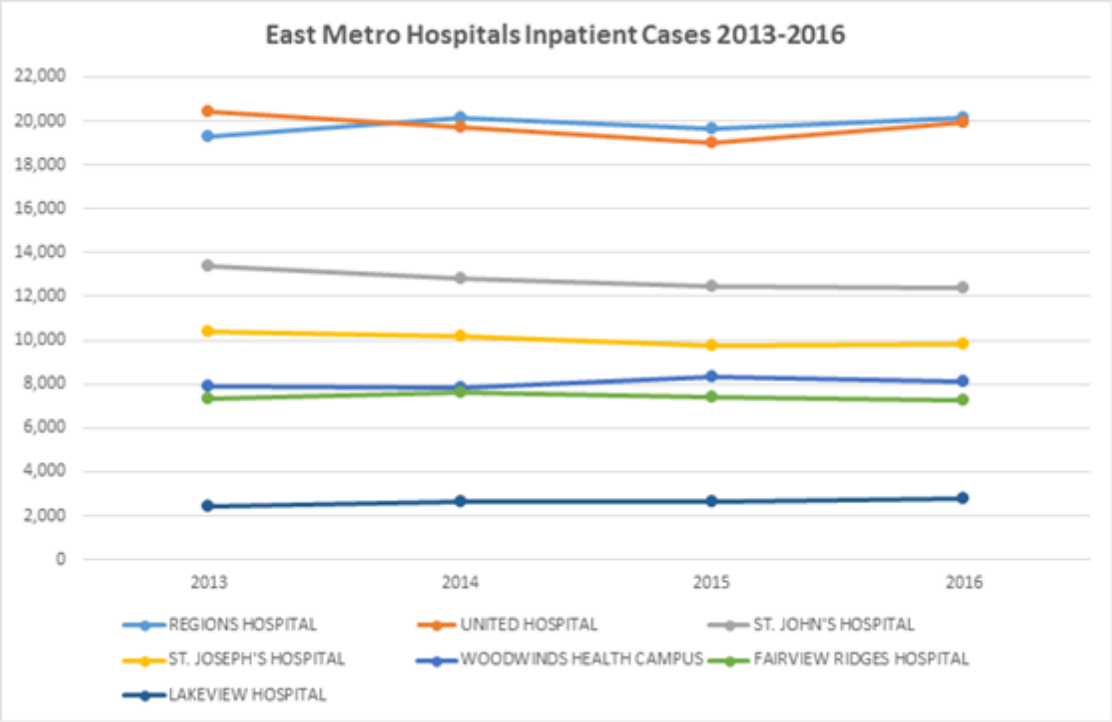
5.2 Market Share

Inpatient cases have remained constant in the east metro. Observation guidelines mean patients can be placed in the hospital but are not considered inpatient.

The total number of inpatient cases in the east metro has remained fairly constant from 2013 to 2016. The exception is 2014 to 2015, due to CMS regulations regarding short stays, referred to as the 2 midnight rule.

A patient must meet certain clinical criteria to be admitted to the hospital as an inpatient. If not, a physician can place a patient in the hospital on observation status, which is considered outpatient care. The Minnesota Hospital Association does not track outpatient observation cases, creating a challenge to analyze the full utilization of hospital beds. Although observation patients are in the hospital using beds, they do not count toward the inpatient census.

It should be noted with the most recent changes to the 2 midnight rule in October of 2016, the market has experienced an increase in inpatient cases. While MHA data lags, the 2017 first quarter data shows an increase in inpatient cases.



Source: *Minnesota Hospital Association; excludes observation patients*
Notes: *Total discharges from patients residing in Regions service area excluding Wisconsin*

5.3 Discharges by Service Line

Service line growth across the east metro has been led by orthopedics, neonatology neurology and others. Regions Hospital has increasingly drawn patients from outstate Minnesota and western Wisconsin.

The east metro has experienced significant growth in several inpatient service lines from 2013-2016, including orthopedics, neonatology, general medicine, neurology and general surgery.

East Metro Inpatient Discharges by Service Line

Service Line	2013	2014	2015	2016	YoY % Change
General Medicine	10,107	10,806	11,291	11,559	2%
Cardiovascular	11,399	11,068	11,128	11,325	2%
Orthopaedics	10,080	9,894	9,645	10,404	8%
General Surgery	8,026	7,796	8,464	8,878	5%
Psychiatry	8,583	8,582	8,230	7,680	-7%
Gastroenterology	7,686	7,578	7,329	7,285	-1%
Pulmonology	6,997	7,289	7,092	7,178	1%
Neonatology	5,456	6,464	6,438	6,853	6%
Neurology	4,943	5,028	5,113	5,448	7%
Oncology	3,461	3,433	3,410	3,375	-1%
Chemical Dependency	2,082	2,091	2,295	2,281	-1%
Other	38,422	37,641	35,557	34,746	-2%
Grand Total	**117,242**	**117,670**	**115,992**	**117,012**	**1%**

Source: *Minnesota Hospital Association; excludes observation patients*
Notes: *Total discharges by service line based on patients residing in Regions service area excluding Wisconsin*

The total number of inpatient discharges from patients residing in Regions' tertiary service area has increased 3 percent from 2015 to 2016 (see chart on page 43) due to strong growth in several service lines including cardiovascular, general medicine, and general surgery.

Regions' Tertiary Service Area Inpatient Discharges by Service Line

Service Line	2013	2014	2015	2016	YoY % Change
Orthopaedics	569	539	549	561	2%
Cardiovascular	457	471	444	545	23%
General Medicine	410	430	459	504	10%
General Surgery	412	341	358	397	11%
Gastroenterology	295	282	342	362	6%
Pulmonology	344	358	304	306	1%
Neonatology	209	227	234	244	4%
Psychiatry	294	285	251	238	-5%
Neurology	201	207	200	204	2%
Oncology	139	160	162	174	7%
Chemical Dependency	146	149	136	135	-1%
Other	1,757	1,887	1,688	1,629	-3%
Grand total	**5,233**	**5,336**	**5,127**	**5,299**	**3%**

Source: *Minnesota and Wisconsin Hospital Associations; excludes observation patients*
Notes: *Total discharges by service line based on patients residing in Regions' tertiary service area*

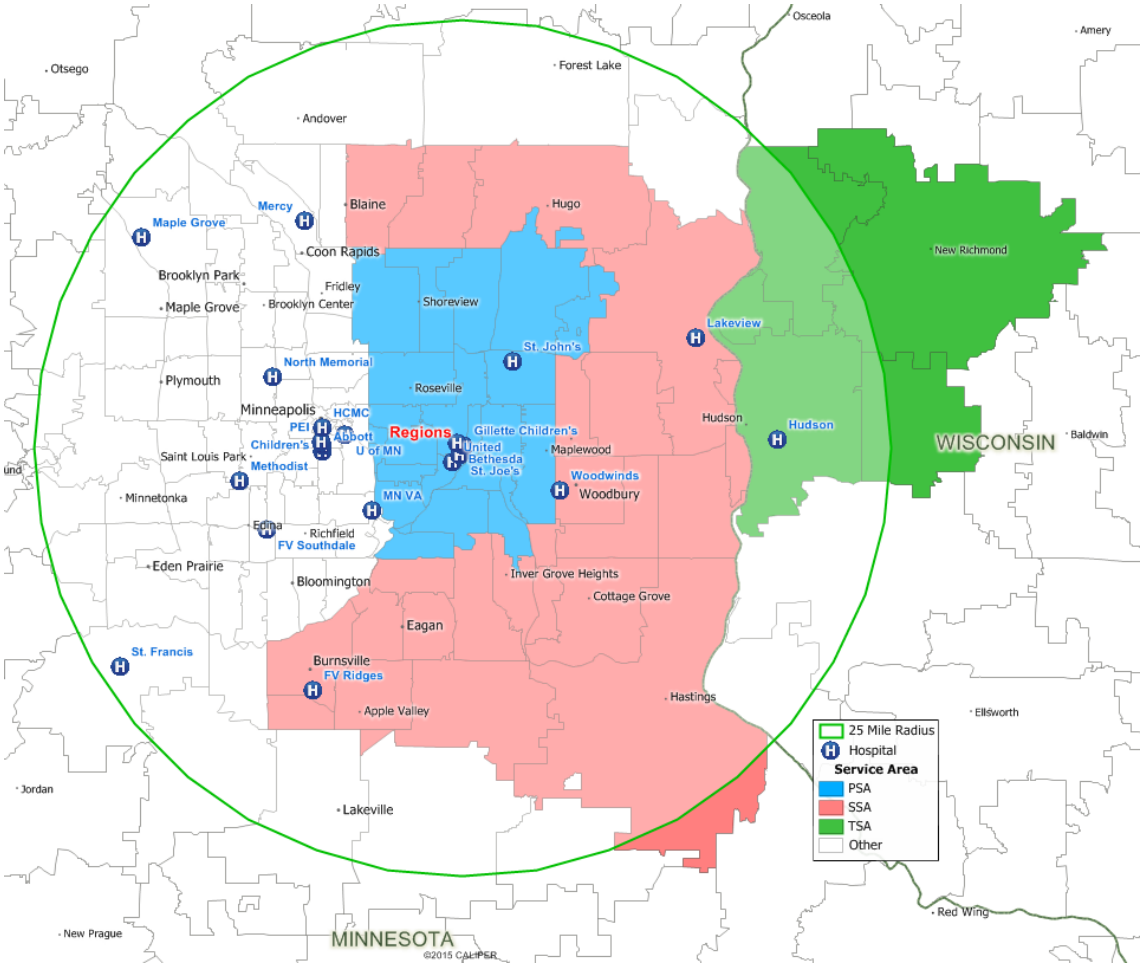
Patients from Wisconsin and outstate Minnesota are increasingly seeking care in the east metro. For example, Regions and Lakeview Hospital have experienced an increase in inpatient cases from patients residing in Wisconsin (~11 percent in 2016 for Regions), while other east metro hospitals have held steady in the number of Wisconsin residents they serve.

	% of Total Discharges from WI			
Hospital	2013	2014	2015	2016
Lakeview	26%	25%	26%	27%
Regions	9%	9%	10%	11%
United	6%	6%	6%	6%
Woodwinds	5%	4%	4%	4%
St. John's	2%	2%	2%	2%
St. Joseph's	2%	2%	2%	2%

Source: *Minnesota Hospital Association; excludes observation patients*
Notes: *Percentage of total discharges for each hospital from patients that reside in Wisconsin*

5.4 Hospitals within a 25-mile radius

Regions Hospital is within 25 miles of all other metro hospitals, but there are key differences in their service offerings.



Although all the metro hospitals are located with a 25-mile radius of Regions Hospital, there are key differences in each hospital's level of care and specialties provided.

Some hospital admissions are determined by the specialty provider, while others are influenced by ease of access and proximity. Physical barriers including rivers and traffic patterns influence driving choices. Finally, not all hospitals provide the same services. For example, Regions does not provide general pediatric care, except in cases of trauma and burn injuries. Regions is not an organ transplant facility. Other hospitals lack level 1 trauma facilities or do not provide acute inpatient rehabilitation services. We believe it is critical to consider the types of services and their accessibility when evaluating our bed license request. Specialized care at Regions includes the following:

- Level 1 Adult Trauma care. Also provided at North Memorial and Hennepin County Medical Center. To the east, the next closest Level 1 Trauma Center is the University of Wisconsin – Madison, a distance of 260 miles.

- Level 1 Pediatric Trauma care. Also provided at Hennepin County Medical Center and Minneapolis Children's Hospital. To the east, the next closest Level 1 Pediatric Trauma center is the University of Wisconsin – Madison.

5.5 Staffing Impact

If our bed license request is approved, we would expect to add employees as we increase our care capacity. For 100 additional beds, we would need to fill 954 full-time equivalent (FTE) positions. Our workforce is diverse, and many are represented by organized labor unions.

By 2040, with the addition of 100 additional beds in service, we expect to add staff to fill 954 full-time equivalent (FTE) positions to our current total of 4,094. Today, 30.5 percent of our employees are persons of color. All Regions positions pay a living wage with full benefits offered for employees who work at least 50 percent of full time and above. With the addition of 100 beds in service, by 2040 we project a need to add 954 FTE positions to our current total of 4,094, many whom are represented by AFSCME Council 5, SEIU Healthcare, Teamsters Local 120 and IUOE Local 70. Regions supports the need for future employees by supporting the development of our own employees and partnering with multiple organizations to help increase the number of people entering the health care workforce.

5.6 Regions' Campus Impact

We have room to accommodate all our requested bed licenses, although space will need to be upgraded over time to create private rooms for patients.

Regions' near-term facilities can accommodate all requested bed licenses. Much of the space will require upgrades to meet current building codes and create private rooms for patients, and will be phased in over the course of years to ensure the financial capacity to invest in the facility.

Our intent is to be as analytical and measured with these added beds as with all other increases in capacity. It is critical the market is adequately served with the proper mix of beds. Immediate recognition of the bed licenses will allow us to secure the financing and capital needed to expand our care.

The table below outlines the initial plan and timeline for bed license utilization:

Estimated			
Year	**Expansion**	**Licenses**	**Impact**
2018	Convert Labor and Deliver rooms to Inpatient beds	12	No facility, volume, or reimbursement impact. This would improve patient flow and experience
2019	Add medical/surgical capacity	12	Requires refurbishment of an older care unit
2020	Increase obstetrics capacity	8	Requires facility upgrades to expand capacity
2022	Add medical/surgical capacity	12	Requires refurbishment of an older care unit
2025	Add mental health capacity	20	Requires completion of a shelled floor
2027	Add medical/surgical capacity	12	Requires refurbishment of an older care unit
2030	Add medical/surgical capacity	12	Requires refurbishment of an older care unit
2040	Add medical/surgical capacity	12	Requires refurbishment of an older care unit
		100	

5.7 Impact on Other Facilities

We don't foresee any impact to nearby hospitals because our request is meant to only maintain market share. However, if we are unable to grow we may need to reevaluate the services we provide.

Our substantiated bed license model and bed license request maintains Regions' market share. Therefore, we are not projecting any material impact on nearby hospitals with this request. However, if Regions is unable to grow with demand we may be forced to reduce or discontinue key services. This would be a material change in how we care for patients at Regions. It would have a negative impact on the community and significantly impact other facilities. In addition, despite our commitment to partnering with education to develop caregivers of the future, it is likely other facilities would attract our own talent away.

5.8 Impact on the Safety Net: Hospitals Providing Charity Care

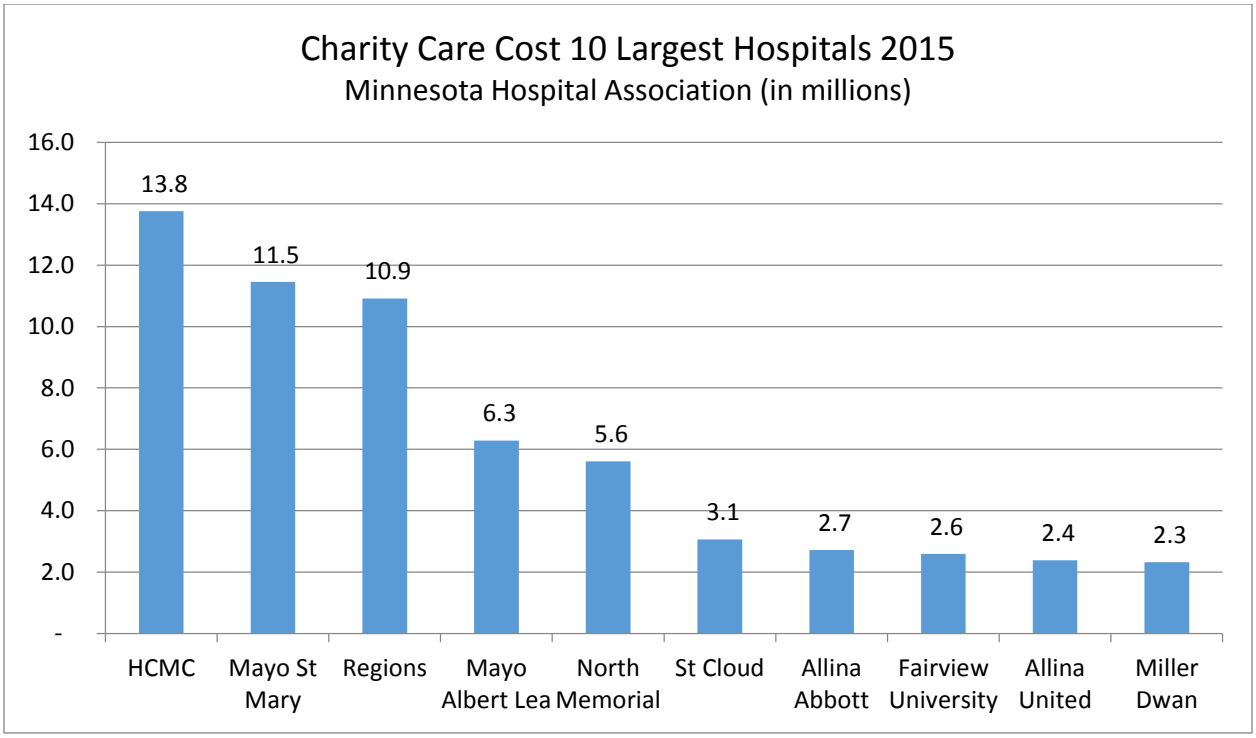
As we grow to meet increasing demand, we also increase our commitment to improving access to care.

As one of the largest charity care providers in the state, Regions Hospital stands by its commitment to serve everyone. In 2010 we demonstrated this commitment through our willingness to be the only Coordinated Care Delivery System (CCDS) hospital in the East Metro. We are guided by our vision statement: Health as it should be, affordability as it must be, through relationship built on trust and service for all.

There are several ways to measure charity care, and all methodologies make comparisons difficult. Healthcare organizations report charity care in the Form 990 tax return for the entire system, not individual hospitals. The Schedule S10 in the Medicare Cost Report lists specific charity amounts for each hospital, but this only includes estimated cash costs in the current year. Hospitals also report charity and bad debt costs to the Minnesota Hospital Association each year, but this is based on charges, which can vary from hospital to hospital. Despite the comparability challenges, all methods consistently rank Regions Hospital as one of the top 5 charity providers of hospital care in the state, typically ranked 2nd or 3rd.

As a former public hospital for Ramsey County, we had a statutory obligation to provide charity care. Today, we continue to partner with Ramsey County as a safety net for vulnerable persons. However, the county no longer supports the hospital with payments for charity care.

The Minnesota Hospital Association Hospital charity care top 10 hospitals are listed below, sorted by 2015 charity care charges reported to the Minnesota Hospital Association:



6.0 Benefits of Adding Licenses

6.1 Increased access to nationally-recognized care

Growing to meet community demand improves access to nationally-recognized care in the east metro.

Expanding our bed capacity to meet increasing demand means more patients will have access to high quality care and our suite of specialized services. Regions is one of the top-performing hospitals in the nation for heart attack, heart failure, pneumonia and surgical care according to the Joint Commission. Our patient satisfaction scores rank in the top 25 percent in the nation according to NRC Picker, the nation's leading source of patient satisfaction measurement.

Regions has been recognized by numerous healthcare publications.

Our desire is to serve the patients who want to come and who need our level of specialized service.

6.2 Commitment to Community Health and Health Equity

Regions is a strong community partner. We invest in numerous programs and people to make health care more equitable and to reduce disparities in care.

Regions Hospital takes seriously its role as a community and civic partner, engaging with people and programs to improve health and wellness in our cities, neighborhoods and schools. The following programs are examples of our ongoing investment in the communities we serve.

Burn and Trauma Services
Regions is the only east metro Level I Adult and Level I Pediatric trauma center, and one of two verified burn programs in the state. The trauma program tracks burn and trauma-related injuries for each specific registry used for performance improvement, quality assurance and public health reporting. The burn center and the trauma center are each verified by the American College of Surgeons, as a Level I Adult Trauma Center and a Level I Pediatric Trauma Center and the American Burn Association as a verified burn center.

Emergency Preparedness
Regions has the only mass (non-military) decontamination site in Ramsey County that stands ready to handle any major event. Regions can treat up to 150 people per hour in the event of biological, chemical or nuclear incidents. This system is tested annually in conjunction with a mass casualty drill that involves community partners and public safety agencies.

Emergency Medical Services (EMS)
Regions EMS delivers 24-hour medical direction and consultation to a diverse group of pre-hospital providers in Minnesota and western Wisconsin. That includes providing a customized resource directory.

This directory has best practice guidelines and state regulations, along with a customized medical direction plan for each organization based on their local resources and environment. The EMS department represents 28 services with 1,500 providers, including rural volunteer firefighters and emergency medical technicians, urban paramedics and suburban public safety personnel.

Metro Regional Trauma Advisory Committee (RTAC)
Regions helped establish and lead the RTAC. It coordinates with the metro area's only adult and pediatric trauma centers to treat severe trauma patients from Washington, Scott, Dakota, Hennepin, Wright, Carver and Anoka counties.

Community paramedic program
Regions EMS partners with the St. Paul Fire Department for a program in which a community paramedic follows up with congestive heart failure, COPD and diabetes hospital patients in their homes. The paramedic, under the orders of a physician, will make one or more home visits to patients to support clinical stabilization, patient education, and prevent unnecessary hospital readmissions and emergency department visits. In the past few years, the program has grown to embed community paramedics into East Side Family Clinic, a community-based primary care clinic, to provide home visits between primary care appointments to diabetic and cardiovascular patients.

Sexual Assault Nurse Examiner
Regions' Sexual Assault Nurse Examiner (SANE) program collaborates with Sexual Offense Services of Ramsey County to provide comprehensive, compassionate care to sexual assault victims. Nurses in the SANE program are specially trained to provide for the unique needs of sexual assault victims from both a medical and forensic perspective. Regions' SANE program responded to 318 patients in 2016. The program also works with educational programs in the community, making presentations that provide hands-on experience for faculty and staff.

Telemedicine
Regions offers live video consultations that allow expert specialists to collaborate and coordinate care for hospitalized patients, often in rural areas. A burn specialist, stroke doctor or dermatologist can see a patient through a live video connection on a telemedicine cart that is brought into the patient's room. That results in expedited care for the patients and helps identify a plan of care faster than would have been possible had the physician been required to drive to the hospital.

Disparities Leadership Program
Regions Hospital has been active in the Disparities Leadership Program, a national collaborative focused on leadership development for eliminating racial and ethnic disparities in health care. Regions leaders developed a comprehensive health equity strategy for the hospital, including establishment of both a full-time Director of Health Equity and Language Access position and an interdisciplinary Equitable Care Committee.

Equitable Care Champions
Regions Hospital's Equitable Care Committee focuses on expanding the use of data to identify and

eliminate disparities and creating a vision and culture of health equity through communication. Forty-One Regions-based Equitable Care Champions spread the word about equitable care and share their learnings with their work teams.

Interpreters
Regions Hospital employs nearly 100 staff interpreters providing services in 13 languages. Regions also holds contracts with nine interpreter agencies to provide in-person or remote services in more than 200 additional languages. In addition, Regions staff accesses telephonic and video interpreters for dozens of different languages.

HeroCare
The Lee and Penny Anderson HeroCare for Veterans program, the first program of its kind in Minnesota, is available to current and former service members while they are hospitalized at Regions. The program allows veterans and military members who may not qualify for state or federal veteran services to get help and resources. The program includes a specialist who is a military veteran and an expert at navigating military benefits and resources. The specialist assists patients and their families by connecting them with financial, housing and employment assistance.

Addressing the Opioid Epidemic
Our goal is to help our patients manage their pain with fewer opioids, particularly when they are not medically necessary. We are prescribing fewer drugs per patient, which means there are fewer drugs available in the market. For example, in the last eight years, we've cut in half the number of prescriptions for our patients who have back pain. We are providing more resources for our patients to get pain management support beyond opioids. This includes referring patients to our pain management clinics. Regions Hospital also has an advanced practice provider in pain management. The "pain nurse" is part of the pain management consult service, which was started to help any providers who struggle with complicated pain management issues.

We are also educating the community that pain is a normal part of life and generally improves with positive thought, time, exercise and avoiding medications. We encourage care providers to think of how they could use opioid pain medications differently

Mental Health Services
Regions Hospital is the leading provider of comprehensive mental and chemical health services in the east metro area. In addition to its on-campus mental health facility, it provides services in the community, like Hovander House. This is a short-term crisis stabilization facility and program for patients who are clinically and physically stable but require further support before returning to a community setting. Hovander House is staffed by mental health professionals from Regions. Another related service is Safe House, a licensed intensive residential treatment program, providing supportive and treatment services for up to 90 days to approximately 60 adults per year suffering from mental and chemical health problems. The Mental Health Drug Assistance Program (MHDAP), a collaborative of community partners, health systems and hospitals including Regions, provides 24/7 access to psychiatric

medications for low income patients with severe mental illness. Providing these medications can help patients avoid a crisis situation which can often lead to hospitalization.

ADAP

Regions Alcohol and Drug Abuse Program (ADAP) matches clients with appropriate community resources to build the foundation for viable, sustainable recovery. Regions uses its strong relationships with social service and county agencies, and financial and housing organizations, to help patients connect with community resources. In a typical year, ADAP serves more than 9,800 clients in residential care and provides approximately 30,000 hours in outpatient counseling through those relationships.

Make it OK

The Make it OK campaign, which encourages open conversations and education about mental illness and provides resources to help get the conversation started, has expanded its reach to help reduce the stigma of mental illnesses in African American, Hispanic and senior communities. Make it OK has run ads in Spanish and ads featuring seniors and African Americans. All the messages ran in media specific to those audiences, opening a new avenue of mental health access for a large population.

Catholic Charities

Regions contributed to the start-up of the Catholic Charities program Higher Ground, which includes a new respite center for homeless patients who need shelter while recovering from a hospital stay. The facility opened earlier this year.

Sustainability

Regions is a leader in reducing waste, recycling and conservation. Regions has implemented many programs around water conservation and reduction of hazardous waste through recycling and purchasing only those items that are safe for the environment. In 2016, Regions donated more than 11 tons of equipment to local non-profit organizations and mission groups and recycled more than 541 tons of materials.

Financial Counseling

Regions has a financial counseling program that includes 10 Patient Financial Counselors, 21 Registration Financial Specialists and a Ramsey County worker, paid for by Regions, dedicated to help patients enroll in government programs or find other sources of coverage. They screen patients for eligibility for available programs and help complete applications with Minnesota health care programs, Regions Medical Assistance/charity care applications, and setting up payment plans. In 2016, they completed 3,144 applications, successfully enrolling 2,065 individuals in government health care programs. This provided approximately $9.7 million to Regions for care that otherwise would have been considered charity care.

6.3 Educating Caregivers of the Future

We continue to invest in our caregivers of the future. We teach the next generation of healthcare professionals including medical students, residents, nurses and ancillary technicians.

Regions Hospital is one of the largest private hospitals in the state that teaches the future physician workforce of the state—partnering with the University of Minnesota to train more than 500 resident physicians each year. We conduct research to improve care through the work of our critical Care Research Center.

Our commitment to teaching the next generation of caregivers includes medical students and residents, midlevel professionals, nurses and other ancillary technicians. Regions provides the needed programs for the development of trauma, psychiatric, and emergency medicine physicians, as well as a broad array of rotations for other specialists. The community collaborative academic teaching model would be greatly impacted if our mix of services were changed and clinical rotations limited. Regions commits to continuing to invest in our caregivers of the future if given the opportunity to continue to meet community needs.

Building a Workforce for the Future

Regions Hospital supports the local community by investing in the people who work and live here, which ultimately helps ensure a strong, diverse workforce for the future. Regions continues to focus its efforts on improving the diversity of its employees, recruiting workers from the local community, encouraging young people to go into health care, and providing professional development opportunities for current team members.

Central Corridor Anchor Partnership

Regions Hospital is part of the Central Corridor Anchor Partnership (CCAP), which aims to improve the health, vitality and growth of the local community. To do this, the partnership is focused on purchasing more goods and services from local businesses along the corridor (who, in turn, hire local workers), employing people living along the corridor to improve incomes, and increasing ridership on the Metro Transit Green Line train to ensure its viability for people who need to get to the market, work and school.

As a partner in CCAP, Regions Hospital helps develop and participate in many initiatives. For example, Regions takes part in Scrubs Camp (to encourage young people who live along the corridor to enter health care) and the C3 Fellows program (providing paid internships for students who attend a college located along the corridor and hiring many of the interns once they've graduated). In addition, Regions Hospital and other CCAP hospitals have been working together to hire small businesses in the community for special services; for example, a local window washing firm.

Encouraging health care as a career

As the demand for health care continues to grow, Regions Hospital seeks to interest young people from diverse backgrounds and local communities to meet current and future workforce needs. For example, this summer Regions Hospital held a health care career day for the White Bear Lake Health Care Academy and Right Track students. This fall, the organization hosted a diverse group of 30 Girl Scouts to learn about the different types of health care careers, from nursing and pharmacy to accounting and human resources. In November, Regions Hospital is hosting students from Washington Technical Magnet School. In this program, students participate in four events where they receive hands-on opportunities to learn about various health care careers. The program, now in its third year of partnership with the school, impacts about 20 students per year.

Professional development for current employees

Regions Hospital is focusing on succession planning to prepare for the workforce of the future, focusing on such things as helping employees develop their professional skills through various Regions workshops and apprenticeship programs, and by providing a number of different scholarships to continue education. Some examples include:

- Through the CCAP nursing initiative, scholarships are available for associate-degree nurses who live along the central corridor and are working toward their bachelor's degree in nursing. Just entering its pilot phase, six of the nine participants are Regions Hospital employees.

- A first cohort of six employees will take part in the new Regions Hospital nursing assistant-to-RN apprenticeship program starting in January 2018.

- Through a partnership with Eastside Financial and Goodwill Easter Seals, Regions Hospital is piloting a tuition savings match program for employees who live on the East Side of St. Paul.

- The Regions Hospital succession planning program, which began in inpatient nursing, now includes eight different departments. The program primarily focuses on career tracks into leadership roles.

- To aid in the career development of non-professional Regions Hospital staff, various career tracks were highlighted at the annual Employee Health & Wellness Fair. Regions also began offering classes in resume writing, interviewing skills, and individual development planning to all employees in 2017.

6.4 Cost of Healthcare

We are proud of our focus on quality improvement, patient safety and family experience. We are committed to providing the most appropriate, efficient and effective care in the community.

Regions Hospital is committed to be a low-cost, high-quality hospital for the communities we serve. We strive for the most efficient and effective care with a relentless focus on quality improvement, patient safety and patient and family experience. As a result, Regions Hospital is in the preferred tier of every major commercial payer in the market, including the state employee group insurance program. Because Regions delivers high-quality care at a lower than average cost, we will drive overall healthcare costs down.

7.0 Appendix

Bed Types and Occupancy

Definitions

Regions Hospital uses the following bed definitions, from the Agency for Healthcare Research & Quality (AHRQ), and we refer to these throughout the application:

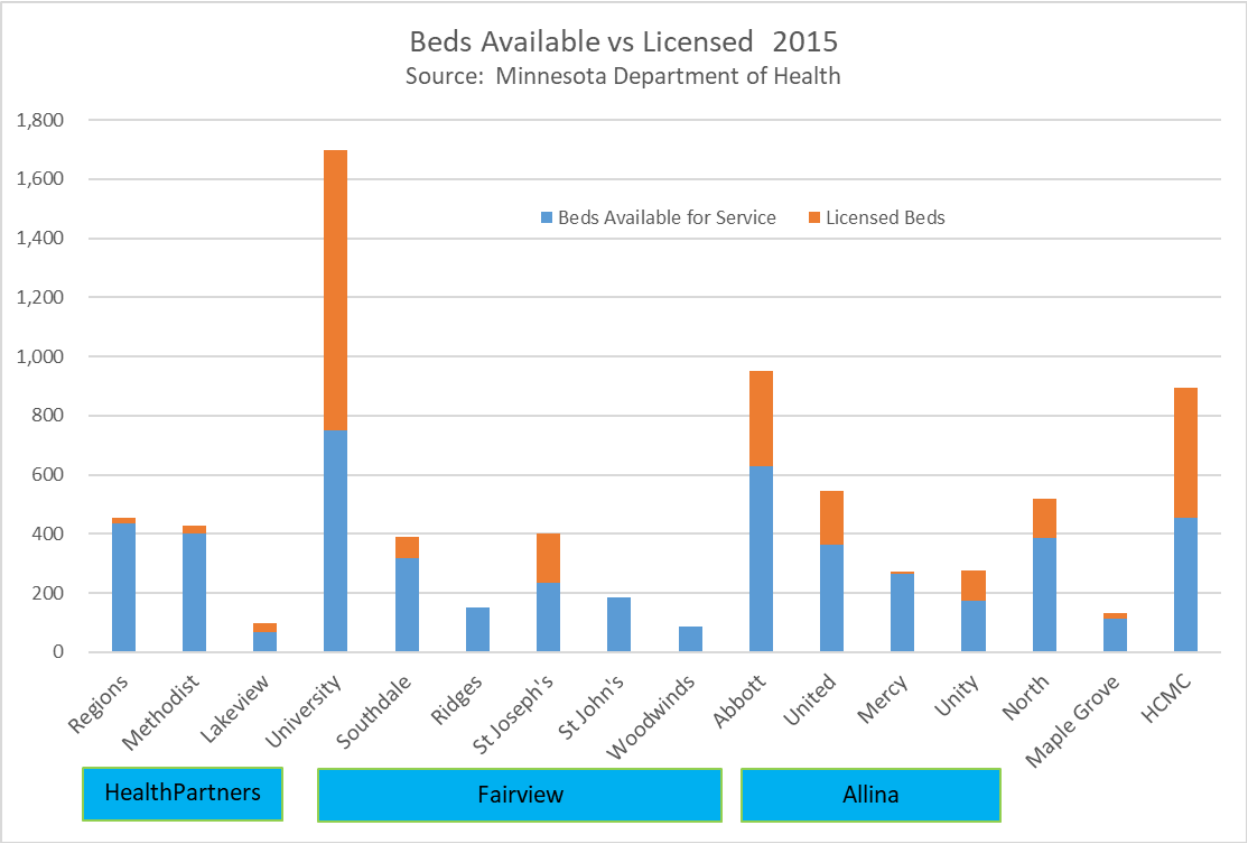
- **Licensed Beds:** The maximum number of beds for which a hospital holds a license to operate. Many hospitals do not operate all the beds for which they are licensed.
- **Physically Available Beds:** Beds that are licensed, physically set up, and available for use. These are beds regularly maintained in the hospital for the use of patients, which furnish accommodations with supporting services (such as food, laundry, and housekeeping). These beds may or may not be staffed but are physically available.
- **Staffed Beds:** Beds that are licensed and physically available for which staff is on hand to attend to the patient who occupies the bed. Staffed beds include those that are occupied and those that are vacant.
- **Occupied Beds/Occupancy Rate:** Beds that are licensed, physically available, staffed, and occupied by a patient

Service Line Definitions

Regions' internal data follows the Minnesota Hospital Association service line definitions with the following exceptions:

- Spine surgery is a separate service line called neuro-spine: MHA includes spine surgery in orthopedics.

- Neuro surgery patients are called out in Neurosurgery: MHA includes neurosurgery in neurology.
- General Medicine patients who have respiratory DRG descriptions are called out in Pulmonology while MHA calls these General Medicine.
- MHA defined Cardiology DRGs are listed as Cardiovascular for Regions.
- Regions' categories are different primarily to align the professional practice that supports that patient with their DRG.
- The above list identifies the majority of DRGS and where the Regions service line definition is different from MHA. The appendix details all DRGs where this difference exists.



Market Share for East Metro Area Based on Inpatient Discharges

Hospital Name	2010	2011	2012	2013	2014	2015	2016
REGIONS HOSPITAL	16.4%	16.9%	16.8%	16.5%	17.2%	16.9%	17.2%
UNITED HOSPITAL	18.1%	17.9%	17.9%	17.5%	16.8%	16.4%	17.1%
ST. JOHN'S HOSPITAL	11.9%	12.3%	11.9%	11.4%	10.9%	10.8%	10.6%
ST. JOSEPH'S HOSPITAL	9.9%	9.7%	9.0%	8.9%	8.7%	8.4%	8.4%
WOODWINDS HEALTH CAMPUS	6.2%	6.3%	6.5%	6.8%	6.7%	7.2%	6.9%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	6.4%	6.2%	6.6%	7.0%	7.1%	7.0%	6.8%
FAIRVIEW RIDGES HOSPITAL	6.2%	6.3%	6.4%	6.3%	6.5%	6.4%	6.2%

Notes: Shows percentage of total inpatient days for patients residing in Regions' service area, excluding Wisconsin.
Source: Minnesota Hospital Association; excludes observation patients

The table below lists Regions Hospital's highest growing patient volume by zip code. As a combination of east metro Minnesota and western Wisconsin zip codes, the data demonstrate we serve a broad market and must consider the needs of our primary, secondary and tertiary service areas.

Top 10 Growth Zip Codes in the Last Five Years

Hospital Discharges: COUNTY & ZIP	ZIP	2012	2013	2014	2015	2016	2012-2016 Annual Change	% Annual Change	2012 to 2016
WASHINGTON	55082	494	525	608	529	679	46	7.5%	37.4%
SAINT CROIX	54017	248	245	266	318	354	27	8.5%	42.7%
SAINT CROIX	54016	362	434	426	423	465	26	5.7%	28.5%
POLK	54001	136	134	157	179	215	20	11.6%	58.1%
DAKOTA	55075	420	475	485	473	498	20	3.7%	18.6%
WASHINGTON	55129	160	172	199	200	206	12	5.8%	28.8%
SAINT CROIX	54025	73	100	101	99	117	11	12.1%	60.3%
WASHINGTON	55128	497	480	520	515	539	11	1.7%	8.5%
PIERCE	54022	102	103	113	102	144	11	8.2%	41.2%
RAMSEY	55110	608	656	696	610	649	10	1.3%	6.7%

Regions Hospital's discharges from Ramsey County have declined since 2012 by 125 per year or 3.7 percent. However, Washington and Dakota County have grown, with the former adding 100 patients each year and the latter 49. Wisconsin counties (Polk and Saint Croix) have grown by more than 130 patients since 2012—6 percent annually.

Regions Hospital Discharges: COUNTY	2012	2013	2014	2015	2016	2012-2016 Annual Change	% Annual Change	%Change 2012 to 2016
RAMSEY	13,412	12,804	13,131	12,687	12,912	(125)	-0.7%	-3.7%
WASHINGTON	2,950	2,863	3,166	3,070	3,351	100	2.7%	13.6%
DAKOTA	3,149	3,029	3,266	3,262	3,345	49	1.2%	6.2%
HENNEPIN	1,943	1,994	2,114	2,102	2,045	26	1.0%	5.2%
SAINT CROIX	927	967	1,041	1,073	1,235	77	6.6%	33.2%
POLK	723	774	889	856	970	62	6.8%	34.2%
ANOKA	672	667	748	720	733	15	1.8%	9.1%
CHISAGO	336	319	306	247	308	(7)	-1.7%	-8.3%
PIERCE	221	231	237	213	246	6	2.3%	11.3%
BURNETT	102	126	146	154	161	15	11.6%	57.8%

Market Share by Service Line for Regions' Primary Service Area

BURN	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	61.7%	48.0%
HENNEPIN COUNTY MEDICAL CENTER	36.7%	43.1%

CARDIOVASCULAR	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	22.3%	20.6%
REGIONS HOSPITAL	16.8%	17.2%
ST. JOSEPH'S HOSPITAL	16.8%	16.0%
ST. JOHN'S HOSPITAL	8.5%	6.7%

CHEMICAL DEPENDENCY	2016	
	% of Discharges	% of Days
ST. JOSEPH'S HOSPITAL	23.1%	46.9%
REGIONS HOSPITAL	19.9%	14.2%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	16.4%	9.5%
UNITY HOSPITAL	11.8%	9.2%
UNITED HOSPITAL	7.2%	4.5%

ENT	2016	
	% of Discharges	% of Days
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	18.2%	18.3%
UNITED HOSPITAL	15.1%	15.4%
REGIONS HOSPITAL	12.1%	12.9%
ST. JOHN'S HOSPITAL	10.6%	9.5%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	8.0%	9.8%

GASTROENTEROLOGY	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	15.9%	15.9%
REGIONS HOSPITAL	15.6%	15.1%
ST. JOHN'S HOSPITAL	14.5%	13.6%
ST. JOSEPH'S HOSPITAL	8.1%	7.8%
WOODWINDS HEALTH CAMPUS	7.8%	6.4%
FAIRVIEW RIDGES HOSPITAL	7.6%	8.7%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	7.4%	9.9%

GENERAL MEDICINE	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	19.2%	21.6%
UNITED HOSPITAL	17.0%	15.6%
ST. JOHN'S HOSPITAL	10.4%	9.0%
ST. JOSEPH'S HOSPITAL	7.5%	7.5%
FAIRVIEW RIDGES HOSPITAL	7.2%	7.6%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	5.9%	8.1%
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	5.6%	4.8%
WOODWINDS HEALTH CAMPUS	5.3%	3.7%

GENERAL SURGERY	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	18.6%	16.5%
REGIONS HOSPITAL	16.1%	17.1%
ST. JOHN'S HOSPITAL	11.2%	9.7%
ST. JOSEPH'S HOSPITAL	8.6%	6.9%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	8.0%	14.0%

GYNECOLOGY	2016	
	% of Discharges	% of Days
ST. JOHN'S HOSPITAL	17.7%	17.7%
UNITED HOSPITAL	17.6%	17.6%
REGIONS HOSPITAL	12.7%	15.4%
WOODWINDS HEALTH CAMPUS	7.0%	5.6%
ABBOTT NORTHWESTERN HOSPITAL	6.0%	6.3%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	5.6%	6.9%
PARK NICOLLET METHODIST HOSPITAL	5.4%	4.0%
FAIRVIEW RIDGES HOSPITAL	5.1%	4.3%
LAKEVIEW HOSPITAL	5.0%	3.3%

NEONATOLOGY	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	19.8%	7.2%
REGIONS HOSPITAL	13.1%	7.9%
ST. JOHN'S HOSPITAL	10.9%	8.5%
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	9.8%	28.1%
ABBOTT NORTHWESTERN HOSPITAL	8.0%	2.6%
WOODWINDS HEALTH CAMPUS	7.4%	3.7%
FAIRVIEW RIDGES HOSPITAL	6.3%	6.8%

NEURO-SPINE	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	17.6%	20.8%
ABBOTT NORTHWESTERN HOSPITAL	12.2%	11.7%
ST. JOSEPH'S HOSPITAL	11.8%	11.1%
UNITED HOSPITAL	11.1%	12.3%
ST. JOHN'S HOSPITAL	9.3%	7.1%
FAIRVIEW RIDGES HOSPITAL	6.0%	4.8%
WOODWINDS HEALTH CAMPUS	5.8%	3.7%

NEUROLOGY	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	20.6%	23.2%
REGIONS HOSPITAL	19.9%	23.1%
ST. JOSEPH'S HOSPITAL	11.6%	9.4%
ST. JOHN'S HOSPITAL	8.0%	5.4%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	6.0%	7.3%
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	5.2%	3.6%

NEUROSURGERY	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	21.1%	22.7%
UNITED HOSPITAL	17.3%	18.1%
ST. JOSEPH'S HOSPITAL	15.2%	12.7%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	9.9%	9.9%
ABBOTT NORTHWESTERN HOSPITAL	6.5%	7.5%
ST. MARYS HOSPITAL	5.0%	3.6%

NEWBORNS	2016	
	% of Discharges	% of Days
ST. JOHN'S HOSPITAL	17.0%	13.5%
UNITED HOSPITAL	16.8%	17.2%
REGIONS HOSPITAL	13.9%	15.8%
WOODWINDS HEALTH CAMPUS	12.4%	10.7%
FAIRVIEW RIDGES HOSPITAL	9.2%	11.0%

OBSTETRICS	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	20.4%	21.8%
ST. JOHN'S HOSPITAL	15.6%	14.1%
REGIONS HOSPITAL	14.3%	13.1%
WOODWINDS HEALTH CAMPUS	10.6%	10.4%
FAIRVIEW RIDGES HOSPITAL	8.2%	8.6%
ABBOTT NORTHWESTERN HOSPITAL	6.4%	7.6%

ONCOLOGY	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	16.6%	16.4%
UNITED HOSPITAL	16.0%	15.2%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	15.3%	18.4%
ST. JOHN'S HOSPITAL	10.1%	8.1%
CHILDREN'S HOSPITALS AND CLINICS OF MN - MPLS	6.5%	8.9%
ABBOTT NORTHWESTERN HOSPITAL	5.2%	4.5%
FAIRVIEW RIDGES HOSPITAL	5.0%	4.9%

OPHTHALMOLOGY	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	26.8%	27.4%
HENNEPIN COUNTY MEDICAL CENTER	12.4%	21.2%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	8.2%	6.9%
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	7.2%	6.9%
UNITED HOSPITAL	6.2%	5.1%
ST. JOHN'S HOSPITAL	6.2%	4.0%
ABBOTT NORTHWESTERN HOSPITAL	5.2%	5.5%

ORTHOPEDICS	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	17.6%	19.4%
WOODWINDS HEALTH CAMPUS	16.1%	12.7%
UNITED HOSPITAL	12.2%	12.8%
LAKEVIEW HOSPITAL	7.9%	6.1%
ST. JOSEPH'S HOSPITAL	7.0%	7.3%
FAIRVIEW RIDGES HOSPITAL	6.9%	7.5%

PSYCHIATRY	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	30.5%	33.1%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	19.0%	17.8%
UNITED HOSPITAL	12.1%	10.6%
ST. JOSEPH'S HOSPITAL	10.1%	14.1%
ABBOTT NORTHWESTERN HOSPITAL	9.1%	7.5%

PULMONOLOGY	2016	
	% of Discharges	% of Days
REGIONS HOSPITAL	15.6%	16.9%
UNITED HOSPITAL	13.5%	12.7%
ST. JOHN'S HOSPITAL	13.1%	12.6%
CHILDREN'S HOSPITALS AND CLINICS OF MN - ST. PAUL	10.9%	9.4%
FAIRVIEW RIDGES HOSPITAL	8.6%	9.8%
ST. JOSEPH'S HOSPITAL	8.4%	8.7%
WOODWINDS HEALTH CAMPUS	6.3%	4.9%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	5.4%	7.8%

UROLOGY	2016	
	% of Discharges	% of Days
UNITED HOSPITAL	18.0%	15.5%
ST. JOHN'S HOSPITAL	15.7%	13.5%
REGIONS HOSPITAL	14.9%	18.4%
ST. JOSEPH'S HOSPITAL	8.9%	8.9%
UNIVERSITY OF MINNESOTA MEDICAL CENTER	7.0%	9.0%
FAIRVIEW RIDGES HOSPITAL	6.5%	7.7%

Source: Minnesota Hospital Association data; excludes observation patients
Notes: Shows percentage of total discharges and total days by service line for patients residing in Regions' service area excluding Wisconsin.

APPENDIX - Regions Hospital PSA &SSA Zip Codes

ZIP Code	Service Area	ZIP Code	Service Area	ZIP Code	Service Area	ZIP Code	Service Area
55075	PSA	55117	PSA	55171	PSA	55077	SSA
55090	PSA	55118	PSA	55172	PSA	55082	SSA
55100	PSA	55119	PSA	55175	PSA	55083	SSA
55101	PSA	55120	PSA	55177	PSA	55121	SSA
55102	PSA	55126	PSA	55187	PSA	55122	SSA
55103	PSA	55127	PSA	55188	PSA	55123	SSA
55104	PSA	55130	PSA	55001	SSA	55124	SSA
55105	PSA	55133	PSA	55003	SSA	55125	SSA
55106	PSA	55144	PSA	55014	SSA	55128	SSA
55107	PSA	55145	PSA	55016	SSA	55129	SSA
55108	PSA	55146	PSA	55033	SSA	55306	SSA
55109	PSA	55150	PSA	55038	SSA	55337	SSA
55110	PSA	55155	PSA	55042	SSA	55449	SSA
55112	PSA	55164	PSA	55043	SSA	54016	TSA
55113	PSA	55165	PSA	55055	SSA	54017	TSA
55114	PSA	55166	PSA	55068	SSA	54023	TSA
55115	PSA	55168	PSA	55071	SSA	54025	TSA
55116	PSA	55170	PSA	55076	SSA	54082	TSA

MSDRG LIST: Regions Service Line Category not the same as MHA Service Line Category

DRG	DRG Not Coded	Regions Service Line	MHA Service Line
1	CRANIOTOMY AGE >17 W CC	Neurosurgery	Neurology
2	CRANIOTOMY AGE >17 W/O CC	Neurosurgery	Neurology
3	CRANIOTOMY AGE 0-17	Neurosurgery	Neurology
4	NO LONGER VALID	Not Assigned	Neurology
5	NO LONGER VALID	Not Assigned	Neurology
7	PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W CC	Neurosurgery	Neurology
8	PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W/O CC	Neurosurgery	Neurology
9	SPINAL DISORDERS & INJURIES	Neuro-Spine	Neurology
78	PULMONARY EMBOLISM	Pulmonology	General Medicine
79	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE >17 W CC	Pulmonology	General Medicine
80	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE >17 W/O CC	Pulmonology	General Medicine
81	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE 0-17	Pulmonology	General Medicine
85	PLEURAL EFFUSION W CC	Pulmonology	General Medicine
86	PLEURAL EFFUSION W/O CC	Pulmonology	General Medicine
87	PULMONARY EDEMA & RESPIRATORY FAILURE	Pulmonology	General Medicine
88	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	Pulmonology	General Medicine
89	SIMPLE PNEUMONIA & PLEURISY AGE >17 W CC	Pulmonology	General Medicine
90	SIMPLE PNEUMONIA & PLEURISY AGE >17 W/O CC	Pulmonology	General Medicine
91	SIMPLE PNEUMONIA & PLEURISY AGE 0-17	Pulmonology	General Medicine
92	INTERSTITIAL LUNG DISEASE W CC	Pulmonology	General Medicine
93	INTERSTITIAL LUNG DISEASE W/O CC	Pulmonology	General Medicine
94	PNEUMOTHORAX W CC	Pulmonology	General Medicine
95	PNEUMOTHORAX W/O CC	Pulmonology	General Medicine
96	BRONCHITIS & ASTHMA AGE >17 W CC	Pulmonology	General Medicine
97	BRONCHITIS & ASTHMA AGE >17 W/O CC	Pulmonology	General Medicine
98	BRONCHITIS & ASTHMA AGE 0-17	Pulmonology	General Medicine
99	RESPIRATORY SIGNS & SYMPTOMS W CC	Pulmonology	General Medicine
100	RESPIRATORY SIGNS & SYMPTOMS W/O CC	Pulmonology	General Medicine
101	OTHER RESPIRATORY SYSTEM DIAGNOSES W CC	Pulmonology	General Medicine
102	OTHER RESPIRATORY SYSTEM DIAGNOSES W/O CC	Pulmonology	General Medicine
103	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	Cardiovascular	Cardiology
104	CARDIAC VALVE & OTH MAJOR CARDIOTHORACIC PROC W CARD C	Cardiovascular	Cardiology
105	CARDIAC VALVE & OTH MAJOR CARDIOTHORACIC PROC W/O CARI	Cardiovascular	Cardiology
106	CORONARY BYPASS W PTCA	Cardiovascular	Cardiology
107	NO LONGER VALID	Cardiovascular	Cardiology
108	OTHER CARDIOTHORACIC PROCEDURES	Cardiovascular	Cardiology
109	NO LONGER VALID	Cardiovascular	Cardiology
110	MAJOR CARDIOVASCULAR PROCEDURES W CC	Cardiovascular	Cardiology
111	MAJOR CARDIOVASCULAR PROCEDURES W/O CC	Cardiovascular	Cardiology

DRG	DRG Not Coded	Regions Service Line	MHA Service Line
112	NO LONGER VALID	Cardiovascular	Cardiology
113	AMPUTATION FOR CIRC SYSTEM DISORDERS EXCEPT UPPER LIMB &	Cardiovascular	Cardiology
114	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	Cardiovascular	Cardiology
115	NO LONGER VALID	Cardiovascular	Cardiology
116	NO LONGER VALID	Cardiovascular	Cardiology
117	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	Cardiovascular	Cardiology
118	CARDIAC PACEMAKER DEVICE REPLACEMENT	Cardiovascular	Cardiology
119	VEIN LIGATION & STRIPPING	Cardiovascular	Cardiology
120	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	Cardiovascular	Cardiology
121	CIRCULATORY DISORDERS W AMI & MAJOR COMP, DISCHARGED AI	Cardiovascular	Cardiology
122	CIRCULATORY DISORDERS W AMI W/O MAJOR COMP, DISCHARGEI	Cardiovascular	Cardiology
123	CIRCULATORY DISORDERS W AMI, EXPIRED	Cardiovascular	Cardiology
124	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH & COMPLEX	Cardiovascular	Cardiology
125	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH W/O COMPI	Cardiovascular	Cardiology
126	ACUTE & SUBACUTE ENDOCARDITIS	Cardiovascular	Cardiology
127	HEART FAILURE & SHOCK	Cardiovascular	Cardiology
128	DEEP VEIN THROMBOPHLEBITIS	Cardiovascular	Cardiology
129	CARDIAC ARREST, UNEXPLAINED	Cardiovascular	Cardiology
130	PERIPHERAL VASCULAR DISORDERS W CC	Cardiovascular	Cardiology
131	PERIPHERAL VASCULAR DISORDERS W/O CC	Cardiovascular	Cardiology
132	ATHEROSCLEROSIS W CC	Cardiovascular	Cardiology
133	ATHEROSCLEROSIS W/O CC	Cardiovascular	Cardiology
134	HYPERTENSION	Cardiovascular	Cardiology
135	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE >17 W CC	Cardiovascular	Cardiology
136	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE >17 W/O CC	Cardiovascular	Cardiology
137	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE 0-17	Cardiovascular	Cardiology
138	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W CC	Cardiovascular	Cardiology
139	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W/O CC	Cardiovascular	Cardiology
140	ANGINA PECTORIS	Cardiovascular	Cardiology
141	SYNCOPE & COLLAPSE W CC	Cardiovascular	Cardiology
142	SYNCOPE & COLLAPSE W/O CC	Cardiovascular	Cardiology
143	CHEST PAIN	Cardiovascular	Cardiology
144	OTHER CIRCULATORY SYSTEM DIAGNOSES W CC	Cardiovascular	Cardiology
145	OTHER CIRCULATORY SYSTEM DIAGNOSES W/O CC	Cardiovascular	Cardiology
199	HEPATOBILIARY DIAGNOSTIC PROCEDURE FOR MALIGNANCY	General Surgery	Oncology
209	NO LONGER VALID	Orthopaedics	Orthopedics
210	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE >17 W CC	Orthopaedics	Orthopedics
211	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE >17 W/O CC	Orthopaedics	Orthopedics
212	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE 0-17	Orthopaedics	Orthopedics

DRG	DRG Not Coded	Regions Service Line	MHA Service Line
213	AMPUTATION FOR MUSCULOSKELETAL SYSTEM & CONN TISSUE DIS	Orthopaedics	Orthopedics
214	NO LONGER VALID		Orthopedics
215	NO LONGER VALID		Orthopedics
216	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	Orthopaedics	Orthopedics
217	WND DEBRID & SKN GRFT EXCEPT HAND,FOR MUSCSKELET & CONN	Orthopaedics	Orthopedics
218	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR AGE >17	Orthopaedics	Orthopedics
219	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR AGE >17	Orthopaedics	Orthopedics
220	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR AGE 0-1	Orthopaedics	Orthopedics
221	NO LONGER VALID		Orthopedics
222	NO LONGER VALID		Orthopedics
223	MAJOR SHOULDER/ELBOW PROC, OR OTHER UPPER EXTREMITY PR	Orthopaedics	Orthopedics
224	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC, W	Orthopaedics	Orthopedics
225	FOOT PROCEDURES	Orthopaedics	Orthopedics
226	SOFT TISSUE PROCEDURES W CC	Orthopaedics	Orthopedics
227	SOFT TISSUE PROCEDURES W/O CC	Orthopaedics	Orthopedics
228	MAJOR THUMB OR JOINT PROC,OR OTH HAND OR WRIST PROC W (	Orthopaedics	Orthopedics
229	HAND OR WRIST PROC, EXCEPT MAJOR JOINT PROC, W/O CC	Orthopaedics	Orthopedics
230	LOCAL EXCISION & REMOVAL OF INT FIX DEVICES OF HIP & FEMUR	Orthopaedics	Orthopedics
231	NO LONGER VALID	Orthopaedics	Orthopedics
232	ARTHROSCOPY	Orthopaedics	Orthopedics
233	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W CC	Orthopaedics	Orthopedics
234	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W/O CC	Orthopaedics	Orthopedics
235	FRACTURES OF FEMUR	Orthopaedics	Orthopedics
236	FRACTURES OF HIP & PELVIS	Orthopaedics	Orthopedics
237	SPRAINS, STRAINS, & DISLOCATIONS OF HIP, PELVIS & THIGH	Orthopaedics	Orthopedics
238	OSTEOMYELITIS	Orthopaedics	Orthopedics
240	CONNECTIVE TISSUE DISORDERS W CC	Orthopaedics	Orthopedics
241	CONNECTIVE TISSUE DISORDERS W/O CC	Orthopaedics	Orthopedics
242	SEPTIC ARTHRITIS	Orthopaedics	Orthopedics
243	MEDICAL BACK PROBLEMS	Neuro-Spine	Orthopedics
244	BONE DISEASES & SPECIFIC ARTHROPATHIES W CC	Orthopaedics	Orthopedics
245	BONE DISEASES & SPECIFIC ARTHROPATHIES W/O CC	Orthopaedics	Orthopedics
246	NON-SPECIFIC ARTHROPATHIES	Orthopaedics	Orthopedics
247	SIGNS & SYMPTOMS OF MUSCULOSKELETAL SYSTEM & CONN TISSU	Orthopaedics	Orthopedics
248	TENDONITIS, MYOSITIS & BURSITIS	Orthopaedics	Orthopedics
249	AFTERCARE, MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	Orthopaedics	Orthopedics
250	FX, SPRN, STRN & DISL OF FOREARM, HAND, FOOT AGE >17 W CC	Orthopaedics	Orthopedics
251	FX, SPRN, STRN & DISL OF FOREARM, HAND, FOOT AGE >17 W/O C	Orthopaedics	Orthopedics
252	FX, SPRN, STRN & DISL OF FOREARM, HAND, FOOT AGE 0-17	Orthopaedics	Orthopedics

DRG	DRG Not Coded	Regions Service Line	MHA Service Line
253	FX, SPRN, STRN & DISL OF UPARM,LOWLEG EX FOOT AGE >17 W CC	Orthopaedics	Orthopedics
254	FX, SPRN, STRN & DISL OF UPARM,LOWLEG EX FOOT AGE >17 W/O	Orthopaedics	Orthopedics
255	FX, SPRN, STRN & DISL OF UPARM,LOWLEG EX FOOT AGE 0-17	Orthopaedics	Orthopedics
256	OTHER MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE DIAGNC	Orthopaedics	Orthopedics
286	ADRENAL & PITUITARY PROCEDURES	Neurosurgery	General Surgery
302	KIDNEY TRANSPLANT	General Surgery	Urology
395	RED BLOOD CELL DISORDERS AGE >17	Oncology	General Medicine
396	RED BLOOD CELL DISORDERS AGE 0-17	Oncology	General Medicine
397	COAGULATION DISORDERS	Oncology	General Medicine
398	RETICULOENDOTHELIAL & IMMUNITY DISORDERS W CC	Oncology	General Medicine
399	RETICULOENDOTHELIAL & IMMUNITY DISORDERS W/O CC	Oncology	General Medicine
438	NO LONGER VALID		General Surgery
441	HAND PROCEDURES FOR INJURIES	Orthopaedics	Orthopedics
456	NO LONGER VALID		General Surgery
457	NO LONGER VALID		General Surgery
458	NO LONGER VALID		General Surgery
459	NO LONGER VALID		General Surgery
460	NO LONGER VALID		General Medicine
462	REHABILITATION	Rehab	Rehabilitation
468	EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSI	General Surgery	General Medicine
469	PRINCIPAL DIAGNOSIS INVALID AS DISCHARGE DIAGNOSIS		General Medicine
470	UNGROUPABLE		General Medicine
471	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMI	Orthopaedics	Orthopedics
472	NO LONGER VALID		General Surgery
474	NO LONGER VALID		General Surgery
475	NO LONGER VALID	Pulmonology	General Medicine
478	NO LONGER VALID	Cardiovascular	Cardiology
479	OTHER VASCULAR PROCEDURES W/O CC	Cardiovascular	Cardiology
481	BONE MARROW TRANSPLANT	General Surgery	Oncology
482	TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES	General Surgery	ENT
483	NO LONGER VALID	General Surgery	General Medicine
484	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	Neurosurgery	Neurology
485	LIMB REATTACHMENT, HIP AND FEMUR PROC FOR MULTIPLE SIGNI	Orthopaedics	Orthopedics
491	MAJOR JOINT & LIMB REATTACHMENT PROCEDURES OF UPPER EXT	Orthopaedics	Orthopedics
496	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	Neuro-Spine	Orthopedics
497	SPINAL FUSION EXCEPT CERVICAL W CC	Neuro-Spine	Orthopedics
498	SPINAL FUSION EXCEPT CERVICAL W/O CC	Neuro-Spine	Orthopedics
499	BACK & NECK PROCEDURES EXCEPT SPINAL FUSION W CC	Neuro-Spine	Orthopedics
500	BACK & NECK PROCEDURES EXCEPT SPINAL FUSION W/O CC	Neuro-Spine	Orthopedics

DRG	DRG Not Coded	Regions Service Line	MHA Service Line
501	KNEE PROCEDURES W PDX OF INFECTION W CC	Orthopaedics	Orthopedics
502	KNEE PROCEDURES W PDX OF INFECTION W/O CC	Orthopaedics	Orthopedics
503	KNEE PROCEDURES W/O PDX OF INFECTION	Orthopaedics	Orthopedics
504	EXTEN. BURNS OR FULL THICKNESS BURN W/MV 96+HRS W/SKIN G	Burn	General Surgery
505	EXTEN. BURNS OR FULL THICKNESS BURN W/MV 96+HRS W/O SKIN	Burn	General Medicine
506	FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ W CC OR SIG T	Burn	General Surgery
507	FULL THICKNESS BURN W SKIN GRFT OR INHAL INJ W/O CC OR SIG	Burn	General Surgery
508	FULL THICKNESS BURN W/O SKIN GRFT OR INHAL INJ W CC OR SIG	Burn	General Medicine
509	FULL THICKNESS BURN W/O SKIN GRFT OR INH INJ W/O CC OR SIG	Burn	General Medicine
510	NON-EXTENSIVE BURNS W CC OR SIGNIFICANT TRAUMA	Burn	General Medicine
511	NON-EXTENSIVE BURNS W/O CC OR SIGNIFICANT TRAUMA	Burn	General Medicine
514	NO LONGER VALID	Cardiovascular	Cardiology
515	CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH	Cardiovascular	Cardiology
516	NO LONGER VALID	Cardiovascular	Cardiology
517	NO LONGER VALID	Cardiovascular	Cardiology
518	PERC CARDIO PROC W/O CORONARY ARTERY STENT OR AMI	Cardiovascular	Cardiology
519	CERVICAL SPINAL FUSION W CC	Neuro-Spine	Orthopedics
520	CERVICAL SPINAL FUSION W/O CC	Neuro-Spine	Orthopedics
524	TRANSIENT ISCHEMIA	Neurosurgery	Neurology
525	OTHER HEART ASSIST SYSTEM IMPLANT	Cardiovascular	Cardiology
526	NO LONGER VALID	Cardiovascular	Cardiology
527	NO LONGER VALID	Cardiovascular	Cardiology
528	INTRACRANIAL VASCULAR PROC W PDX HEMORRHAGE	Neurosurgery	Neurology
529	VENTRICULAR SHUNT PROCEDURES W CC	Neurosurgery	Neurology
530	VENTRICULAR SHUNT PROCEDURES W/O CC	Neurosurgery	Neurology
531	SPINAL PROCEDURES W CC	Neurosurgery	Neurology
532	SPINAL PROCEDURES W/O CC	Neurosurgery	Neurology
533	EXTRACRANIAL PROCEDURES W CC	Neurosurgery	Neurology
534	EXTRACRANIAL PROCEDURES W/O CC	Neurosurgery	Neurology
535	CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK	Cardiovascular	Cardiology
536	CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK	Cardiovascular	Cardiology
537	LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W CC	Orthopaedics	Orthopedics
538	LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W/O (	Orthopaedics	Orthopedics
541	ECMO OR TRACH W MV 96+HRS OR PDX EXC FACE, MOUTH & NECK	General Surgery	General Medicine
543	CRANIOTOMY W MAJOR DEVICE IMPLANT OR ACUTE COMPLEX CN	Neurosurgery	Neurology
544	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTRI	Orthopaedics	Orthopedics
545	REVISION OF HIP OR KNEE REPLACEMENT	Orthopaedics	Orthopedics
546	SPINAL FUSION EXC CERV WITH CURVATURE OF THE SPINE OR MAL	Ortho-Spine	Orthopedics
547	CORONARY BYPASS W CARDIAC CATH W MAJOR CV DX	Cardiovascular	Cardiology
548	CORONARY BYPASS W CARDIAC CATH W/O MAJOR CV DX	Cardiovascular	Cardiology
549	CORONARY BYPASS W/O CARDIAC CATH W MAJOR CV DX	Cardiovascular	Cardiology
550	CORONARY BYPASS W/O CARDIAC CATH W/O MAJOR CV DX	Cardiovascular	Cardiology
551	PERMANENT CARDIAC PACEMAKER IMPL W MAJ CV DX OR AICD LE	Cardiovascular	Cardiology
552	OTHER PERMANENT CARDIAC PACEMAKER IMPLANT W/O MAJOR (	Cardiovascular	Cardiology
553	OTHER VASCULAR PROCEDURES W CC W MAJOR CV DX	Cardiovascular	Cardiology
554	OTHER VASCULAR PROCEDURES W CC W/O MAJOR CV DX	Cardiovascular	Cardiology
555	PERCUTANEOUS CARDIOVASCULAR PROC W MAJOR CV DX	Cardiovascular	Cardiology
556	PERCUTANEOUS CARDIOVASC PROC W NON-DRUG-ELUTING STEN	Cardiovascular	Cardiology
557	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT	Cardiovascular	Cardiology
558	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT	Cardiovascular	Cardiology
565	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT 96+	Pulmonology	General Medicine
566	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT < 9	Pulmonology	General Medicine
574	MAJOR HEMATOLOGIC/IMMUNOLOGIC DIAG EXC SICKLE CELL CRIS	Oncology	General Medicine
577	CAROTID ARTERY STENT PROCEDURE	Neurosurgery	Neurology