MCDH MARKET ASSESSMENT AND FACILITY PROJECTIONS

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Devenney GROUP 60 1962 2022

Mendocino Coast District Hospital

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AGENDA

- Key Findings
- Market Definition
- Current Market Dynamics
- Facility Projections
- Questions

KEY FINDINGS

- MCDH serves a unique isolated region, with an extended Primary Service Area reaching 70 miles along the coast but blocked by the coastal mountains (double the length, a third of the width)
- County market population is projected to grow by 0.1% in the next 10 years, but the elderly population is set to grow by 13% which drives the overall bed need up by **4.4%**
- This results in a potentially small net healthcare demand growth due to population (Upper Guardrail)
- This was tested to see the magnitude of impact that expected demand management scenarios might require (Lower Guardrail)
- The difference between guardrails is **2** acute beds and **2** observation beds
- The 2031 Recommendation is based on the upper guardrail
- Ancillary Projections are estimated based on utilization profile of services

2031 Recommended of Facility Resources to address the Inpatient, Emergent, and Hospital Based Ambulatory Needs:

- **16 Beds**
- **14 ED bays** (inclusive of Observation bays)
- **2 OR's**
- **Single CT** and **Ultrasound** (consider redundancy plan)
- **MRI** and **NM** via Mobile units
- **2 Rad/Fluro** rooms
- **2 Endo / GI** rooms

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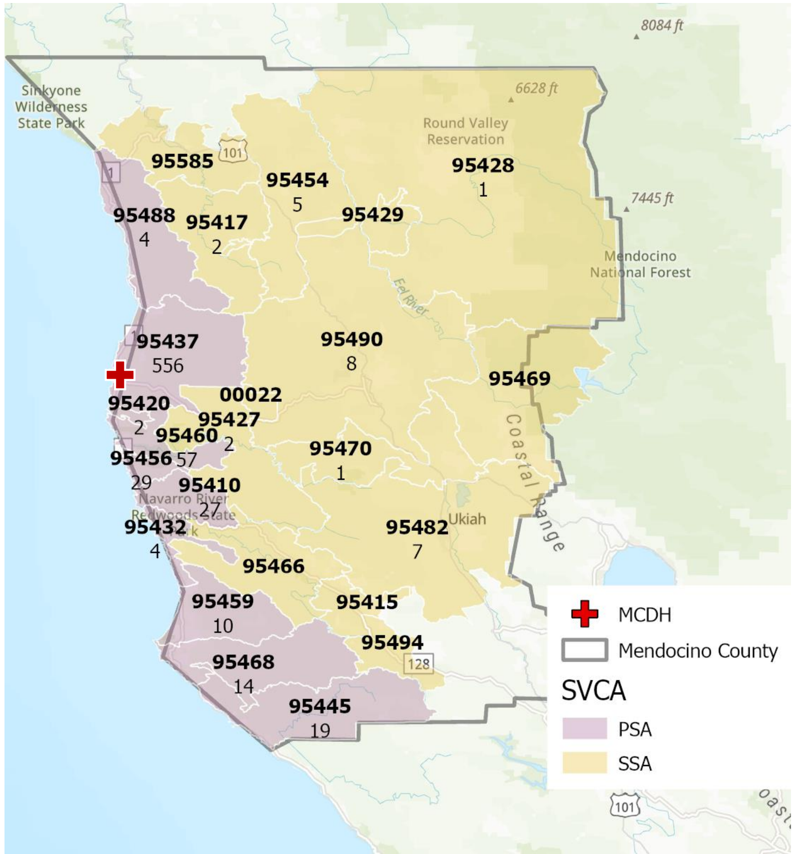
Market Definition

MCDH MARKET DEFINITION

- MCDH has a unique primary service area due to its geographic location and isolation
- Primary Service Area (PSA) extends North-South 70 miles and only 10 miles inshore
- PSA has an extended reach to the south along the coast as MCDH is still the closest hospital for patients in this area
- PSA represents 84% of ED visits and 86% of Acute visits
- Secondary Service Area (SSA) is the balance of Mendocino County

Service Area - Facility Inpatient Discharges 2020



Service Area with 60 Min Drive Time

Source: Internal Service Area Definition

MARKET DEMOGRAPHICS

Even with low-growth population the expanding senior population drives additional healthcare need

- Total Mendocino county population is projected to remain steady over the next 10 years, only growing by **0.1**% across the period – Service Area Split:
  - PSA population decrease of 0.7%
  - SSA population increase of 0.3%
- The **65+ age group** for both PSA and SSA is projected to continue increasing due to the **aging population** (12% to 14%)

	Age Group	Population by Age		10 Yr. Growth
		2022	2032	
PSA	0-14	3,139	3,047	-2.9%
	15-19	1,034	1,055	2.0%
	20-39	4,841	4,279	-11.6%
	40-64	7,752	7,381	-4.8%
	65+	6,870	7,714	12.3%
	PSA Total	**23,636**	**23,476**	**-0.7%**
SSA	0-14	11,773	11,807	0.3%
	15-19	3,722	3,718	-0.1%
	20-39	16,382	15,821	-3.4%
	40-64	20,622	19,502	-5.4%
	65+	13,718	15,592	13.7%
	SSA Total	**66,217**	**66,441**	**0.3%**
Mendocino CO Total		**89,853**	**89,917**	**0.1%**

Source: ca.gov

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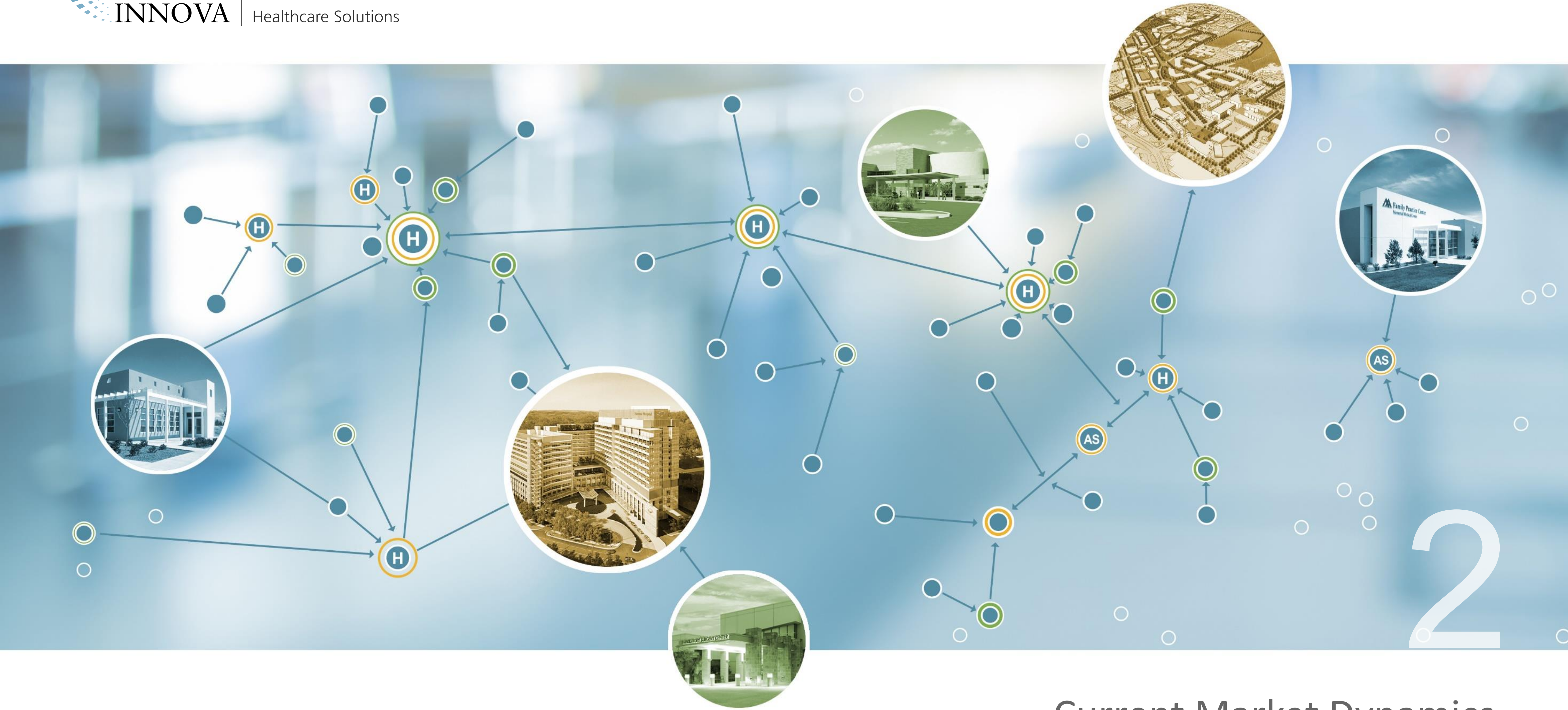

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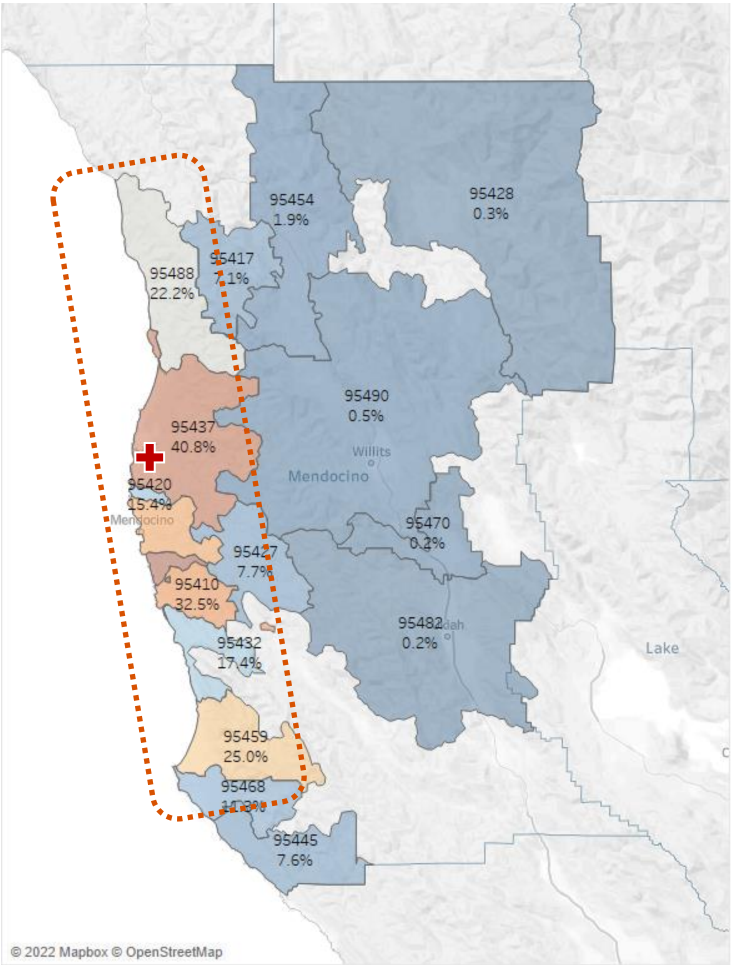
Current Market Dynamics

MCDH MARKET SHARE

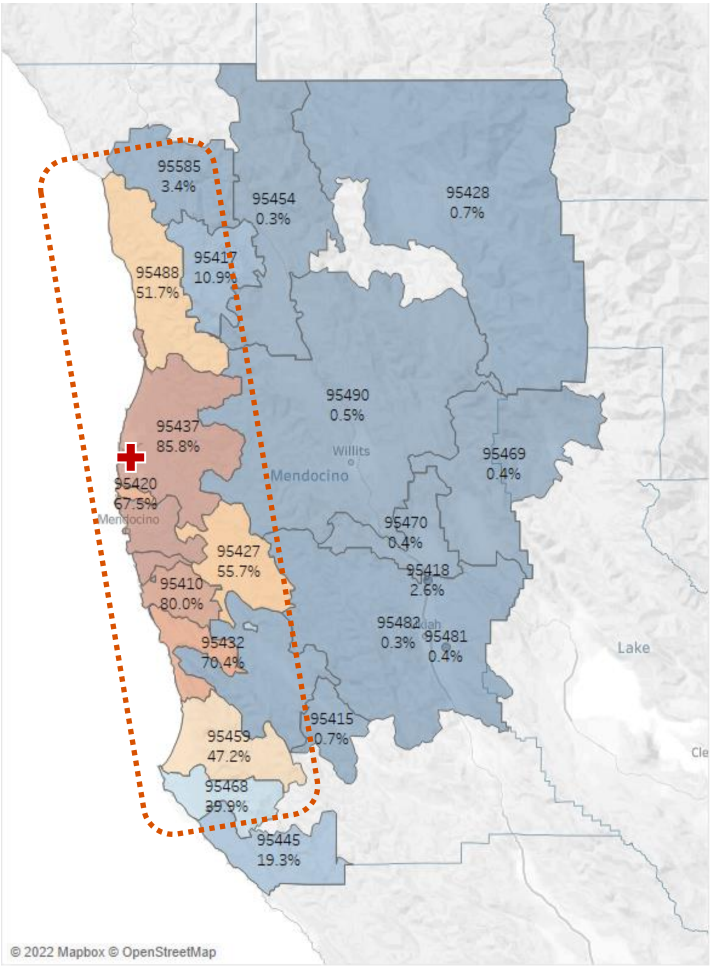
- Inpatient market share is localized and focused
- Emergency Visits in the PSA have a high market share also due to the geographical isolation
- SSA market share is minimal because of geographic barriers

Patient Type	PSA Mk Sh.	SSA Mk Sh.
Inpatient Discharge	**33.3%**	0.4%
Emergent Visit (IP + OP)	**78.9%**	0.6%

Inpatient 2020 Market Share



Emergency Visit 2020 Market Share



Source: CA OSPHD

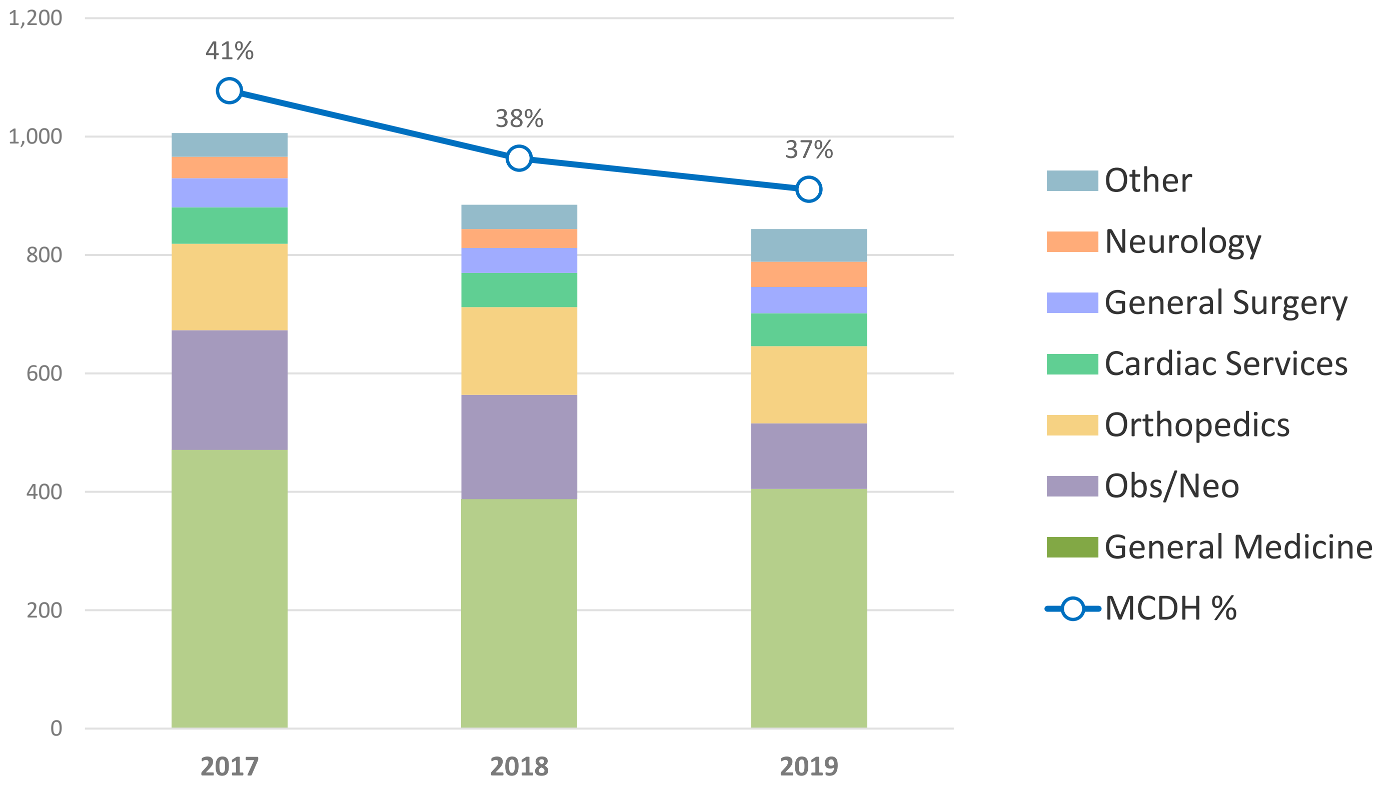
MARKET SHARE TRENDS – KEY SERVICE LINE

MCDH's PSA market share decreased from 41% in 2017 to 37% in 2019

- **Key Service Lines**:
  - General Medicine
  - Orthopedics
  - Obstetrics/Neonatology
  - Cardiac
  - Neurology
  - General Surgery

- Downward trend in PSA market share for almost all service lines – only exception is Neurology

MCDH PSA Market Share by Service Line



Source: CA OSPHD

MARKET OUTMIGRATION AND OPPORTUNITY

Service Line Distribution to Other facilities from PSA

- **63% overall outmigration from PSA**
- **Majority of all outmigration is to four facilities**:
  - Sutter Santa Rosa Regional Hospital (100 mi)
  - Ukiah Valley Medical Center (50 mi)
  - Medical Center at the USFC (beyond 100 mi)
  - Frank R. Howard Memorial Hospital (50 mi)
- MDCH has highest **General Medicine** market share, but 20% of patients are driving > 100 miles for specialty services

2019 IP From PSA									
	MCDH		Within 50 Miles		Within 100 Miles		Outside 100 Miles		Total
Service Line	Visits	% Mk Sh	Visits	% Mk Sh	Visits	% Mk Sh	Visits	% Mk Sh	Visits
Cardiac Services	56	20.0%	12	4.3%	157	56.1%	55	19.6%	280
ENT	5	26.3%	1	5.3%	4	21.1%	9	47.4%	19
General Medicine	405	49.7%	62	7.6%	179	22.0%	169	20.7%	815
General Surgery	44	23.7%	23	12.4%	59	31.7%	60	32.3%	186
Gynecology	4	19.0%	1	4.8%	2	9.5%	14	66.7%	21
Neonatology	53	36.1%	44	29.9%	25	17.0%	25	17.0%	147
Neurology	43	37.1%	12	10.3%	29	25.0%	32	27.6%	116
Neurosurgery	-	0.0%	-	0.0%	3	20.0%	12	80.0%	15
Obstetrics	58	38.2%	44	28.9%	24	15.8%	26	17.1%	152
Oncology/Hematology	26	39.4%	6	9.1%	14	21.2%	20	30.3%	66
Ophthalmology	1	50.0%	-	0.0%	1	50.0%	-	0.0%	2
Orthopedics	130	37.4%	86	24.7%	78	22.4%	54	15.5%	348
Other Trauma	5	20.8%	2	8.3%	13	54.2%	4	16.7%	24
Spine	5	10.2%	1	2.0%	23	46.9%	20	40.8%	49
Thoracic Surgery	-	0.0%	-	0.0%	3	60.0%	2	40.0%	5
Urology	1	3.8%	2	7.7%	14	53.8%	9	34.6%	26
Vascular Services	8	21.6%	1	2.7%	15	40.5%	13	35.1%	37
Total	**844**	**36.6%**	**297**	**12.9%**	**643**	**27.9%**	**524**	**22.7%**	**2,308**

Source: CA OSPHD

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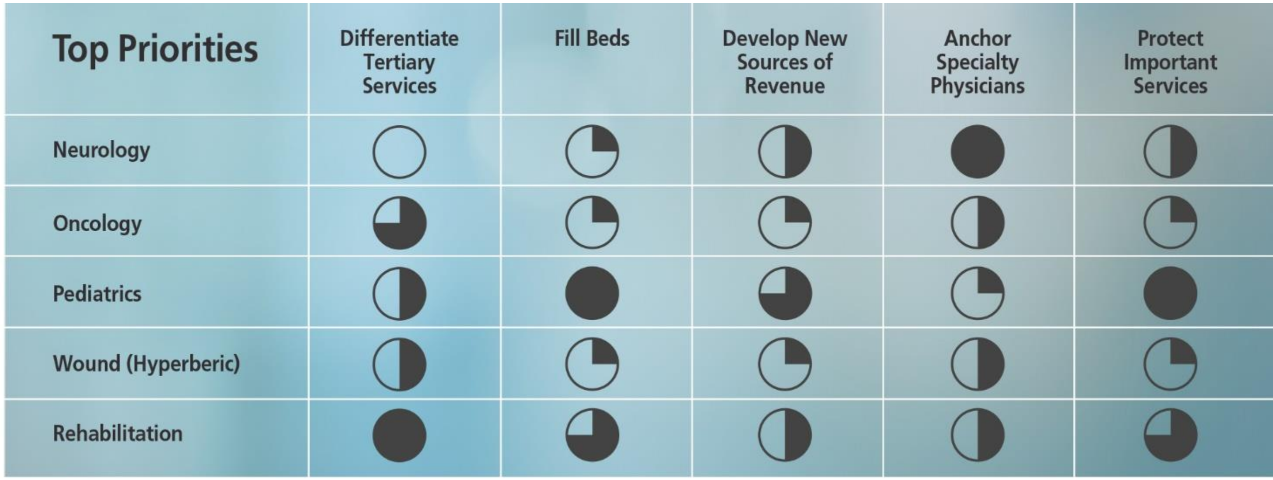
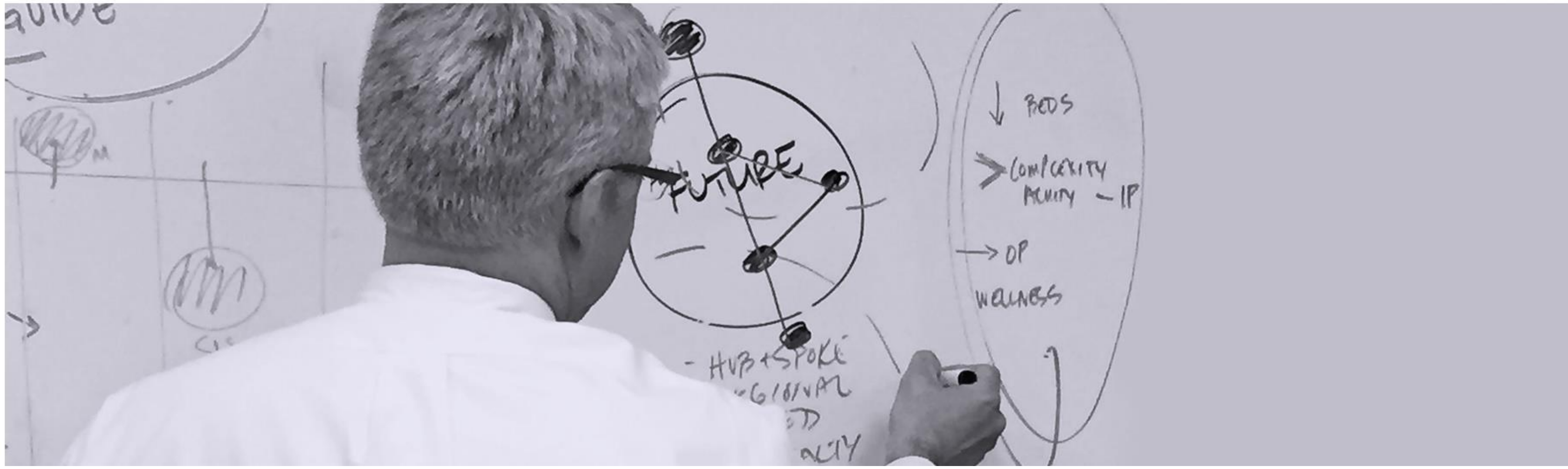
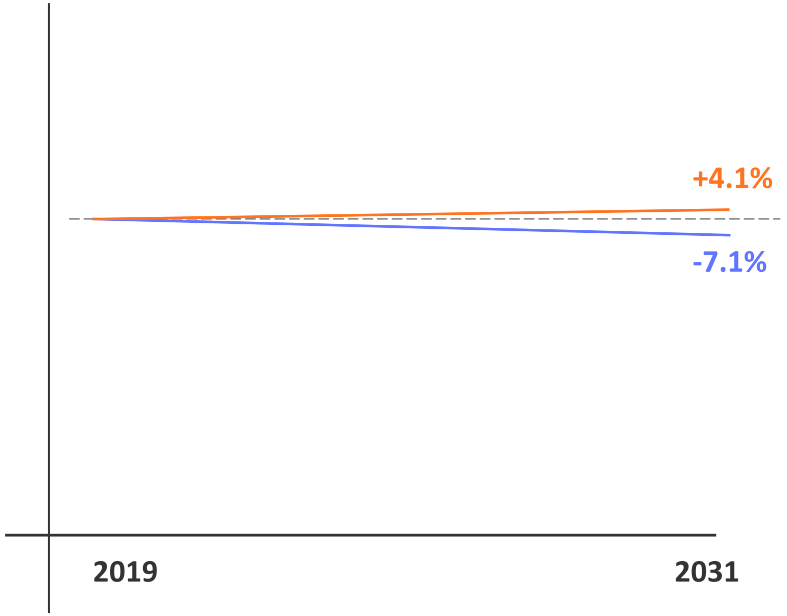




Facility Projections

PROJECTION OVERVIEW

- **Two key projection model guardrails for projections to 2031**
  1. **Upper Guardrail** – Demographically Driven Model
     - Projections based on localized demographic growth and aging only
     - Holds both facility market share and utilization rates by age constant
     - Results in net **+4.1%** change in total patients from 2019
  2. **Lower Guardrail** – Demographics + Use Rate Reduction Model
     - Projections based on demographic change – and –
     - Additionally reduces inpatient utilization rates to reflect predicted demand management (National averages – Mid-level scenario)
     - Net result – lowers utilization by managing patients out of the facility via a broader ambulatory network and enhanced case management
     - Results in a net **-7.1%** change in total patients from 2019
- **No Outmigration recapture factored into either projection model**
- **Ancillary projection estimates based on DRG ratios of resource volume utilization from Innova analysis** (No baseline data received on current volumes for calibration)



MCDH PATIENT PROJECTIONS

- Scale of change from 2019 to 2031 is relatively small in either scenario:
  - Inpatient driven bed need is **14** in 2019
  - Future inpatient bed need ranges from **13** to **15**
- ALOS is modeled to increase slightly in acuity due to older patient profile *(raises from 3.77 to 3.79 - 3.88)*
- Obstetrics continues to decline in both models with neonates balancing

Source: Innova Projection Models

Inpatient and ED Projections by Service Line								
	2019		2031					
	Historical		Demographic Model			Demographic + Utiliz. Management		
Service Line	Patients	ADC	Patients	ADC	% Δ (2019 - 2031 pat.)	Patients	ADC	% Δ (2019 - 2031 pat.)
Cardiac Services	71	0.7	81	0.8	14.2%	64	0.7	-9.9%
ENT	5	0.0	5	0.0	1.1%	4	0.0	-27.5%
General Medicine	467	4.6	486	4.7	4.0%	451	4.5	-3.5%
General Surgery	49	0.6	46	0.6	-5.5%	38	0.5	-22.0%
Gynecology	4	0.0	4	0.0	-10.0%	2	0.0	-47.9%
Neonatology	55	0.3	57	0.3	3.7%	54	0.3	-1.9%
Neurology	44	0.7	47	0.8	7.9%	44	0.8	0.8%
Obstetrics	61	0.2	56	0.2	-8.2%	54	0.2	-11.2%
Oncology/Hematology	32	0.3	33	0.3	3.2%	34	0.3	5.5%
Ophthalmology	2	0.0	2	0.0	2.3%	2	0.0	1.3%
Orthopedics	141	2.3	151	2.5	6.9%	120	2.1	-14.7%
Other Trauma	5	0.0	6	0.0	15.7%	4	0.0	-12.0%
Spine	5	0.0	6	0.0	13.5%	4	0.0	-17.7%
Thoracic Surgery	-	0.0	-	0.0	0.0%	-	0.0	0.0%
Urology	1	0.0	1	0.0	-3.4%	1	0.0	-37.9%
Vascular Services	8	0.1	9	0.1	6.3%	6	0.1	-19.9%
Total	**950**	**9.8**	**989**	**10.3**	**4.1%**	**883**	**9.4**	**-7.1%**
Admitted (in above)	609	5.9	640	6.2	5.1%	568	5.7	-6.7%
Not Admitted	9,032	0.0	9,405	0.0	4.1%	8,393	0.0	-7.1%
Total ED Visits	**9,641**	**5.9**	**10,044**	**6.2**	**4.2%**	**8,961**	**5.7**	**-7.1%**

MCDH RESOURCE PROJECTIONS

- **Ancillary projection estimates** (non beds and ED) are based on ratios of resource volume utilization to DRGs from Innova analysis
- Another refinement would be to calibrate to existing usage and project via growth (requires facility data reports)
- **Resources recommended for Inpatient, Emergent, and Hospital Based Ambulatory Needs:**
  - **16 Beds**
  - **14 ED bays** (* incl. 8 beds for observation)
  - **2 ORs**
  - **Single CT** and **Ultrasound** (consider redundancy plan needs)
  - **MRI** and **NM** via Mobile units
  - **2 Rad/Fluro** rooms
  - **2 Endo / GI** rooms

Resource	2019 Calculated Rooms	2031 Calculated Rooms		Recommended Rooms
		Upper Bound *(Demographic)*	Lower Bound *(Demo + UR)*	
Beds – ICU/MOSU	1	1	1	4
Beds – Acute	13	14	12	12
Beds – Observation	7	8	6	0*
ED Bays	6	7	6	14*
Surgery – ORs	1.0	1.1	0.9	2
CT	0.6	0.6	0.5	1
MRI	0.1	0.2	0.1	Mobile
NM	0.1	0.1	0.1	Mobile
US	0.2	0.3	0.2	1
R/F	1.2	1.4	1.3	2
Endo/GI Rooms	2.2	2.6	2.0	2

Source: Innova Projection Models

QUESTIONS

Appendix

HISTORICAL VOLUME - IP

- Inpatient volumes and ADC for MCDH have shown a downward trend.
- Largest decreases came from General Medicine, Orthopedics, Obstetrics, and Neonatology.

Service Line	Patients			ADC			2017-2019 Difference	
	2017	2018	2019	2017	2018	2019	Visits	ADC
Cardiac Services	63	63	71	0.5	0.6	0.7	8	0.2
ENT	4	7	5	0	0.1	0	1	0
General Medicine	505	444	467	5.2	4.0	4.6	-38	-0.6
General Surgery	51	47	49	0.4	0.4	0.6	-2	0.2
Gynecology	4	1	4	0	0	0	0	0
Invalid	1	0	0	0	0	0	-1	0
Neonatology	100	86	55	0.6	0.4	0.3	-45	-0.3
Neurology	37	34	44	0.3	0.2	0.7	7	0.4
Neurosurgery	0	1	0	0	0	0	0	0
Obstetrics	111	101	61	0.7	0.5	0.2	-50	-0.5
Oncology/Hematology	23	25	32	0.3	0.2	0.3	9	0
Ophthalmology	0	0	2	0	0	0	2	0
Orthopedics	162	156	141	2.1	1.7	2.3	-21	0.2
Other Trauma	4	3	5	0	0	0	1	0
Spine	2	5	5	0	0.0	0	3	0
Thoracic Surgery	1	1	0	0	0	0	-1	0
Urology	0	0	1	0	0	0	1	0
Vascular Services	2	2	8	0	0	0.1	6	0.1
Total	**1,070**	**976**	**950**	**10.1**	**8.1**	**9.8**	**-120**	**-0.3**

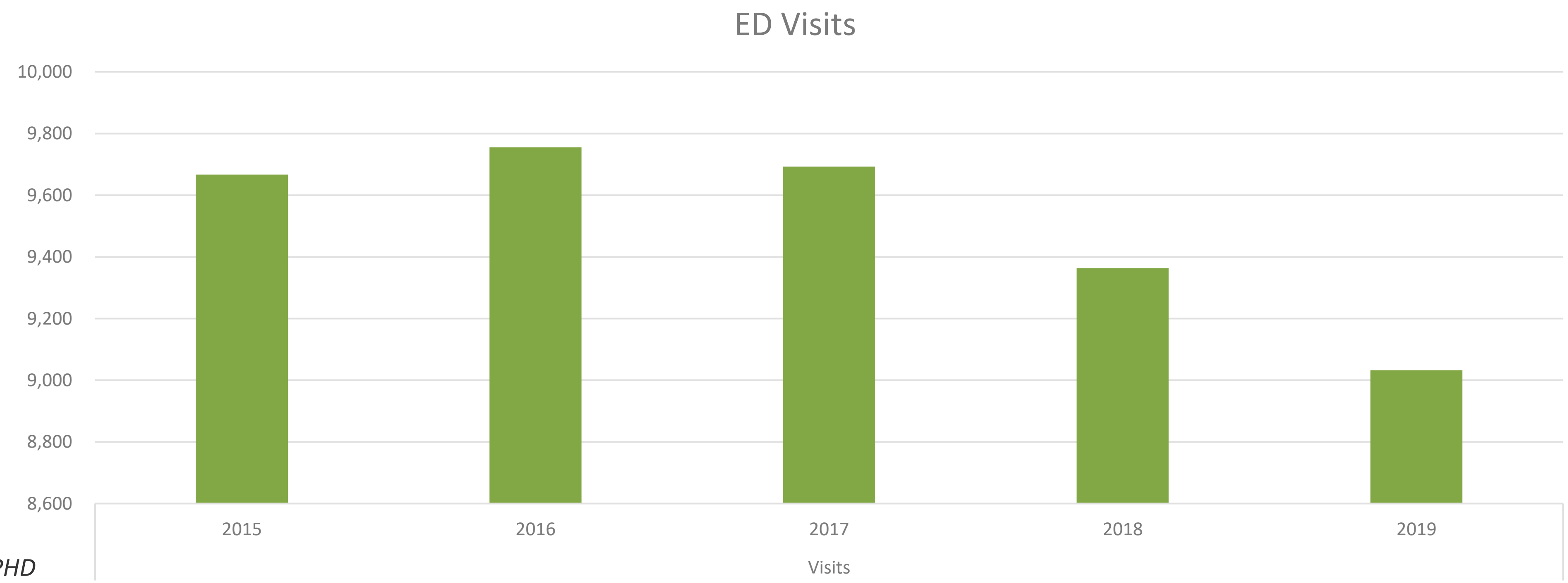
Source: CA OSPHD

HISTORICAL VOLUME - ED

Appendix

- ED volumes for MCDH have shown a downward trend.

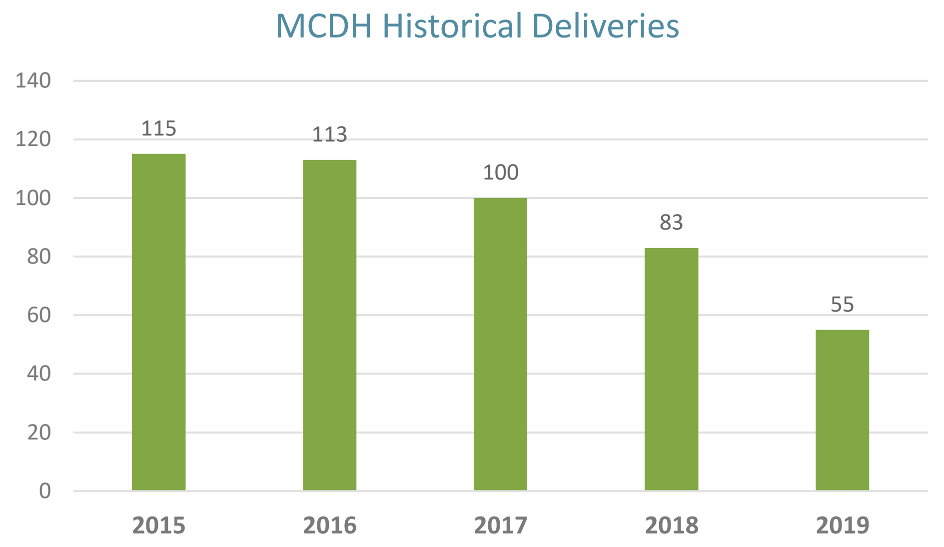
	Patients					2015-2019 Difference	
	2015	2016	2017	2018	2019	Volume	% Change
ED Vistis	9,667	9,755	9,693	9,364	9,032	-635	-7%



Source: CA OSPHD

OBSTETRICAL PATIENT DYNAMICS

- **Historical:**
  - MCDH deliveries have declined YOY from 2015 to 2019



- **Projected:**
  - Obstetrics patients in the market are projected to continue the decline
  - Primary population for low-risk birthing mothers (female 20-39), is projected to decrease by almost **12%** in the PSA and by **5%** in the SSA

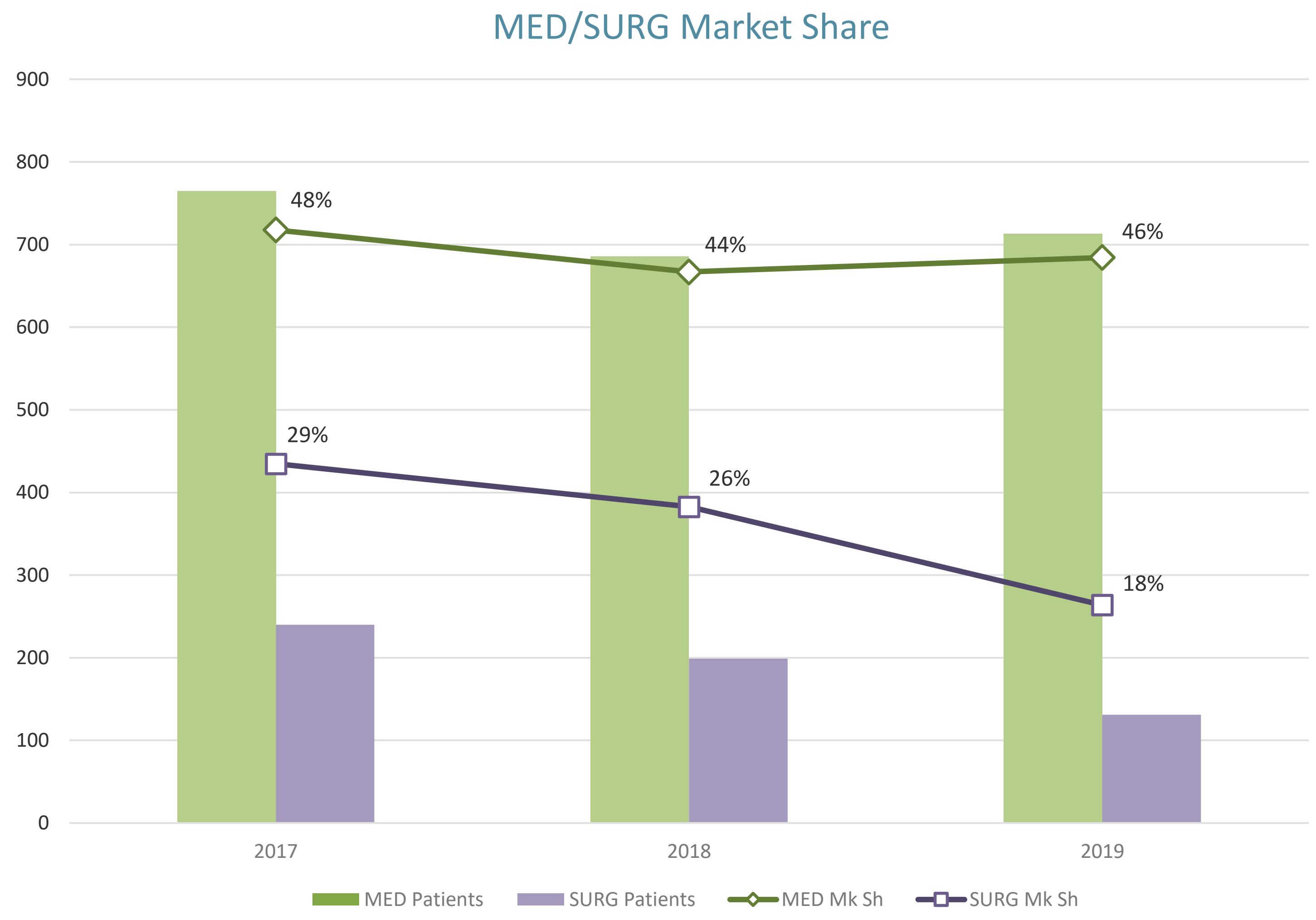
SVCA	Female 20-39 Population			10 Yr. Population Change
	2022	2027	2032	
PSA	2,307	2,078	2,036	-11.7%
SSA	7,972	7,625	7,559	-5.2%
Total	**10,279**	**9,703**	**9,595**	**-6.7%**

Source: ESRI, CA OSPHD

MARKET SHARE TRENDS – MEDICAL/SURGICAL

Inpatient Medical and Surgical Services

- Surgical services show a continual decline in both volume and market share
- Medical services show a slight downward trend in volume and market share.



Source: CA OSPHD

OUTMIGRATION AND OPPORTUNITY – PRODUCT LINE

- **Key Out-migrating Services** (driven by surgical and acuity needs):
  - Medical Cardiology
  - Gastroenterology
  - Psychiatry
  - Obstetrics - Delivery
  - Orthopedics - Joint Replacement
  - Orthopedics - Surgical Trauma
- **Outmigration targets** (performing some service today – could expand to similar patients):
  - Orthopedics
  - Gastroenterology (Medical and Surgical)
  - Low-Risk Obstetrics
- See Handout of Out-Migration by Product Line for more detail

Product Line	MCDH Patients	Local Patients (within 50 Mi)	Regional Patients (100 mi and beyond)
CV - Medical Cardiology	56	12	82
GMED - Gastroenterology	87	14	90
GMED - Psychiatry	6	1	104
OB - Delivery	53	43	45
ORTHO - Joint Replacement	47	43	73
ORTHO - Surgical Trauma	13	19	27

Source: CA OSPHD