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Taking sight of pediatric point of care – Part 1: forecasts on inpatient, outpatient and cost impact

Patient volume shifts to outpatient settings have been an ongoing trend impacting healthcare utilization for several years, driven primarily by payer pressures and policy aimed at moving care to lower cost settings. For pediatrics, this shift has been slower and is driven more so by changing patient and family preferences than costs. New preferences have led to the development of family-centered care models and redesign efforts that favor lower acuity, lower cost ambulatory care settings and more reliance on technology and innovation.

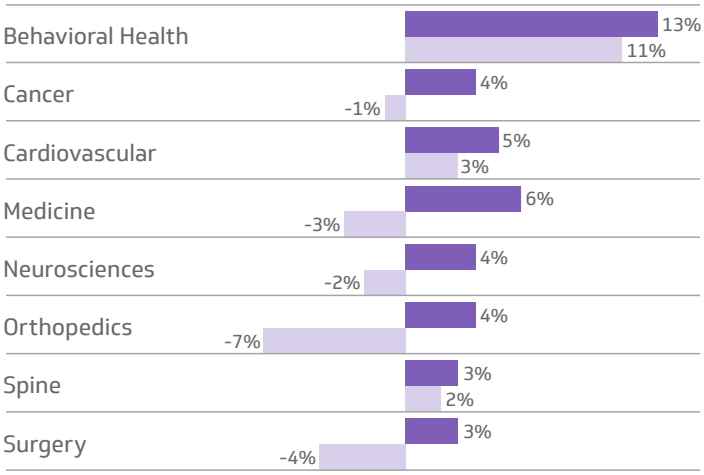
As the shift speeds up for pediatrics, changes to utilization patterns come with reduced payment rates, heightening providers' focus on the need for more operational efficiencies and cost reduction efforts to maintain margins.

Forecast: pediatric patient volume shifts from inpatient to outpatient

The outpatient shift for pediatrics has primarily been a shift in patient status rather than a true site of care shift. As of Q2 2022, pediatric inpatient utilization remains 4% below pre-pandemic rates according the Vizient® Clinical Data Base® (-4% between Q4 2019 and Q2 2022). Recent market analysis shows that pediatric inpatient utilization is expected to remain flat in the short term at -1% growth for pediatric inpatient discharges excluding births over the next five years, while utilization across all outpatient sites of care is expected to grow approximately 7% over the same time period.[1] See Figure 1.

Despite the trends showing more pediatric patient volume moving to outpatient settings, this shift will not ease current capacity constraints facing children's hospitals and community pediatric programs. While inpatient utilization remains flat, pediatric hospital utilization overall is expected to grow, especially for patient admits under the observation status and patients utilizing hospital-based outpatient departments (HOPD) for diagnostics, advanced imaging and procedures. Pediatric observation and HOPD volumes still put pressure on bed availability and the clinical workforce even while garnering lower payment rates.

Figure 1. Pediatric five-year forecast of outpatient growth with service line detail. US market 2022 - 2027



Sources: Impact of Change®, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts®, 2022; Sg2 Analysis, 2022.

There are two main categories of inpatient to outpatient shifts that are expected to drive hospital utilization:

1. The shift to observation status

Pediatric patients with medical conditions warranting short-term hospital-based care through observation stays often result in a one to two-day length of stay (LOS). While the intent of using pediatric observation status is to improve efficiency of healthcare resources, there is extreme variability across patient criteria and utilization. Despite these challenges, the percentage of pediatric pre-COVID observation stays increased from 23.6% in 2010 to 34.3% in 2019 according to a retrospective study published by the Journal of Hospital Medicine.2 Recent trends indicate a rebound in the utilization of observation status to pre-pandemic levels, representing approximately 46% of hospital-based utilization. The five-year forecast shows 4% growth between 2022 and 2027.[1] See Tables 1 and 2.

Table 1. Top volume observation conditions, 2022 - 2027

CARE family	Calendar year 2022 volume	Five-year growth (%)
Bronchitis and other upper respiratory disease	255,000	2
Epilepsy and seizure disorders	132,000	5
Fluid/electrolyte disorder	130,000	4
Asthma	126,000	1
Other infectious and parasitic diseases	123,000	3

Notes: CARE = clinical alignment and resource effectiveness; CARE family denotes a proprietary disease based utilization grouper by Sg2®, a Vizient company. Sources: Impact of Change®, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts®, 2022; Sg2 Analysis, 2022.

Table 2. Fastest growing observation conditions, 2022 - 2027

CARE family	Calendar year 2022 volume	Five-year growth (%)
Diabetes mellitus	25,000	16
Total mood disorders	41,000	12
Other musculoskeletal injuries and conditions	7,000	12
Abuse and maltreatment	5,000	12
Other connective tissue disorders	6,000	11

Notes: CARE = clinical alignment and resource effectiveness; CARE Family denotes a proprietary disease based utilization grouper by Sg2®, a Vizient company. Sources: Impact of Change®, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts®, 2022; Sg2 Analysis, 2022.

2. The shift to HOPD status

Like the shift to observation status, the shift to HOPD reflects a status change rather than a true site of care shift since HOPD is focused on procedural/surgical volume. Unlike the shift to observation status, which is driven by utilization management efforts, the drivers in the shift of surgical volume to HOPD are innovation in surgical approaches, increased utilization of minimally invasive approaches and increased access to technological advances like hybrid operating rooms (O.R.s).3 Likewise, patient and family-centered models of care before, during and post-procedure allow for improved care coordination reducing overall LOS and clinical care required. Overall, pediatric inpatient surgical volume is expected to decline 4% by 2027 while HOPD surgeries are expected to grow 5% and will represent approximately 67% of all pediatric surgical volume by 2032. [1] See Tables 3 and 4.

Table 3. Top volume hospital-based outpatient departments procedures forecast, 2022 - 2032

Procedure	Calendar year 2022 volume	10-year growth (%)
Major procedures	638,000	6
Ear tube procedures and myringotomy	323,000	2
Tonsillectomy and/or adenoidectomy	276,000	6
Open treatment of fracture	115,000	7
Hernia repair	81,000	-1

Sources: Impact of Change®, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts®, 2022; Sg2 Analysis, 2022.

Table 4. Fastest growing hospital-based outpatient departments procedures forecast, 2022 - 2032

Procedure	Calendar year 2022 volume	10-year growth (%)
Bone marrow transplant	424	33
Transcatheter valve procedure	2,000 K	25
Neurostimulator procedure	2,000 K	16
Interventional cardiac catheterizations for congenital anomalies	5,000 K	14
Intracardiac catheter ablation	5,000 K	13

Sources: Impact of Change®, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts®, 2022; Sg2 Analysis, 2022.

Cost impact of pediatric inpatient to outpatient status shift

With shifts happening due to the increased use of observation status and HOPD, what are factors that hospital leaders should consider for controlling costs?

Financial: While the use of observation and HOPD status is intended to reduce cost for lower acuity patients, critics view these status shifts as a cost-shifting mechanism aimed at placing the financial burden and risk on the provider and the patient's family. The cost of providing care in the hospital setting often outweighs any reimbursement paid by commercial and government payers, according to findings in recent pediatrics studies[4,5] – and squeezes already thin provider margins.

Capacity: Inpatient to outpatient shift will continue to exacerbate capacity and workforce constraints in the pediatric hospital setting. The broad and varied use of status shifts, coupled with the trend toward increasing LOS for pediatric patients placed in outpatient status, will continue to increase overall patient days while rising acuity increases inpatient days as well. Further straining capacity is the increasing regionalization of pediatric acute care driving inpatient volume to larger pediatric programs and children's hospitals. With pediatric acute care beds at a premium, increased patient days, and therefore increased utilization, expect operating costs and overall spend to surge.

What can providers do to mitigate risk and optimize spend?

Laser-focused utilization management of observation and HOPD status shift will equip hospitals with the information needed to manage spend and mitigate risk.

1. Define the role of observation and HOPD status from a strategic, operational and financial perspective.
2. Develop detailed patient selection criteria for the utilization of observation and HOPD status for both medical and procedural patients. Selection criteria should focus on high-volume diagnoses/procedures with well-established, evidence-driven care.
3. For each of the selected diagnoses andprocedures, develop detailed care protocols and pathways from patient admit to their discharge that include diagnostics, testing and any procedures that might be included as part of the care plan.
4. Consider cohorting patients into specific units or areas within the hospital to facilitate care protocols and pathways.
5. Keep track of metrics that matter for these patient segments. Key metrics might include LOS, care protocol adherence, variable costs by diagnosis, resource/supply utilization, margin, clinical outcome (varying by patient diagnosis / procedure), etc.

References

1 Impact of Change, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts, 2022; Sg2 Analysis, 2022.

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- Data from the Vizient Clinical Data Base and Resource Manager. All rights reserved. Q1 2019–Q1 2022; Sg2 Analysis, 2022.
- Sg2 Impact of Change, 2022; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2019; The following 2019 CMS Limited Data Sets: carrier, denominator, home health agency, hospice, outpatient, skilled nursing facility; Claritas Pop-Facts, 2022; Sg2 Analysis, 2022.
- Sg2 National Health Care Consumerism and Insurance Coverage Survey, 2019, 2021; Sg2 Analysis, 2022

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