Creating an Internal Hospital Performance Dashboard

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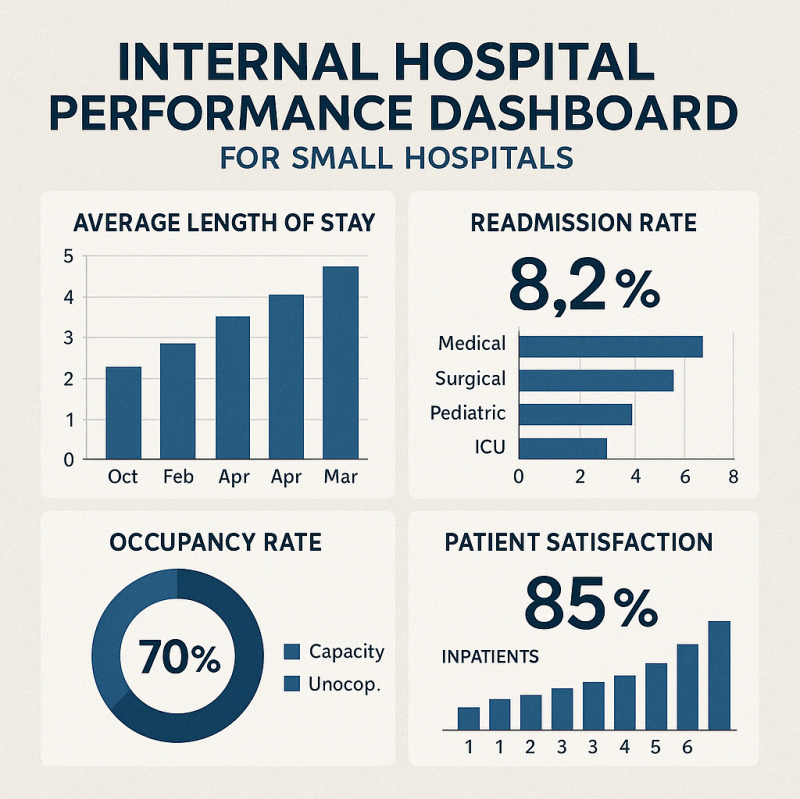

Creating an Internal Hospital Performance Dashboard for Small Hospitals

Introduction: Why Performance Dashboards Matter

Hospital performance dashboards are vital tools that transform scattered data into actionable insights. They consolidate key information in one place, enabling hospital leaders to monitor clinical outcomes, operational efficiency, and financial health at a glance. **Dashboards help hospital administrators make data-driven decisions quickly**, rather than relying on hunches or delayed reports. In fact, visualizing key performance indicators (KPIs) in a dashboard format has been shown to *decrease the time staff spend collecting data and reduce cognitive load* (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC). By presenting real-time metrics in an easy-to-read format, a well-designed dashboard ensures information is **"clear, consistent and accessible"**, even when data initially comes from multiple siloed systems (Using the Dashboard Technology Properly).

For small local hospitals — which often operate with **limited resources** and serve as lifelines to their communities — performance dashboards can be especially transformative. **Modern dashboard tools can "help make sense of all of the fragments of data" in a hospital, even when resources are tight (Using the Dashboard Technology Properly).** They enable administrators to track everything from patient safety indicators to financial metrics in one view, bridging the gap between a hospital's mission (quality care for the community) and its margin (financial viability) (Using the Dashboard Technology Properly). In short, an internal performance dashboard turns the hospital's raw data into a "nexus between raw numbers and informed decision-making," guiding leaders toward improvements in care and efficiency (Building An Executive Dashboard for A Rural Hospital: A Guide for Data-Driven Decision-Making – Newbrier) (Building An Executive Dashboard for A Rural Hospital: A Guide for Data-Driven Decision-Making – Newbrier). The result is faster, more informed decisions that can improve patient outcomes, optimize operations, and ensure sustainability.

Building a Hospital Performance Dashboard: Data and Technology

Creating an effective internal dashboard involves both **technical planning** and a clear understanding of what to measure. In a small hospital setting, the task may seem daunting, but breaking it down into components can help. The key steps include identifying data sources,

establishing data pipelines (ETL processes) for integration, and choosing the right visualization platform. Below, we discuss each component in detail.

Data Sources to Include

Small hospitals generate data from many sources, all of which can feed into a performance dashboard. Major data sources include:

- **Electronic Health Records (EHR/EMR):** Clinical data on patient diagnoses, treatments, vital signs, outcomes, etc. This is often the richest source for quality and safety KPIs. Modern BI tools can directly pull data from EHR systems (e.g. Epic, Cerner, MEDITECH) via built-in reporting databases or APIs (Power BI in Healthcare - Data Analytics For Hospitals - Multishoring).
- **Billing and Financial Systems:** Information on charges, reimbursements, accounts receivable, and costs. These systems provide data for financial KPIs like revenue, expenses, and margins. A dashboard might extract data from billing software or hospital financial databases to track metrics like cost per patient or days cash on hand.
- **Patient Administration Systems:** Admission, discharge, and transfer logs (ADT), scheduling systems, and bed management systems. These contribute to operational metrics (e.g. bed occupancy rate, emergency department throughput).
- **Human Resources Systems:** Data on staffing levels, hours worked, and HR metrics (e.g. turnover rates, staffing ratios). Small hospitals might use HR or payroll software to get figures for workforce-related KPIs.
- **Other Clinical Systems:** Depending on the hospital, there may be separate systems for laboratory results, radiology (PACS), pharmacy, etc. These can provide additional detail (for example, lab turnaround times as a KPI). Device data (like monitors or IoT devices) can also be integrated for real-time patient monitoring metrics in advanced setups (Power BI in Healthcare - Data Analytics For Hospitals - Multishoring).

It's common for **data to be spread across multiple systems in different formats** (Using the Dashboard Technology Properly). For example, a small hospital might use one vendor for EHR, a different one for billing, and spreadsheets for staffing. A crucial first step is to catalog these sources and ensure the dashboard will pull data from each so that no important information is left in a silo. The goal is a unified data view: *connecting diverse systems like EHRs, billing platforms, scheduling systems, and even medical devices into one place* (Power BI in Healthcare - Data Analytics For Hospitals - Multishoring) so the dashboard reflects the hospital's performance holistically.

Data Integration and Pipelines (ETL)

Once data sources are identified, the next challenge is **integrating the data**. This typically involves setting up a data pipeline to **Extract, Transform, and Load (ETL)** data into a central

repository (like a data warehouse or a data mart for the dashboard). In practice, small hospitals have a few options:

- **Batch ETL:** Regularly extracting data (e.g. nightly or hourly) from source systems, transforming it (cleaning, merging, standardizing formats), and loading it into a database that the dashboard tool can query. This is common for daily updated dashboards. For example, an ETL process might pull yesterday's admissions and discharges from the EHR, cleanse the data, and update a table that the dashboard uses to display current census and length of stay.
- **Real-time Integration:** For more immediate needs (e.g. an ED dashboard), streaming integration can be set up. This uses interfaces or APIs (like HL7 messages or FHIR) to send data to the dashboard database as events happen. Streaming ETL tools (e.g. Apache Kafka or real-time interface engines) allow continuously updating the dashboard in near real-time (ETL in The Healthcare Industry: Challenges & Best Practices) (ETL in The Healthcare Industry: Challenges & Best Practices). Small hospitals might not start with real-time feeds for every metric, but critical areas like emergency department wait times could benefit from this approach.
- **Integration Tools (ETL Platforms):** Instead of coding everything from scratch, hospitals can use ETL platforms or integration engines. **Extraction tools** can often interface with hospital systems: for example, Mirth Connect or Rhapsody can consume HL7 feeds from an EHR, or Microsoft SQL Server Integration Services (SSIS) can pull from a relational database. **Transformation** may involve mapping different code systems (e.g. ensuring diagnosis codes and procedure codes line up, or standardizing how departments are labeled across systems). **Loading** usually means populating a centralized **data warehouse or data mart**. Some small hospitals leverage affordable or open-source ETL solutions (Talend Open Studio, Pentaho Kettle, etc.) or cloud-based pipelines (AWS Glue, Azure Data Factory) if they have IT support for those. The integration process must also account for *data compatibility issues*, as different systems may use different terminologies or data formats (for example, one system might label a department "ER" and another "Emergency Dept") (ETL in The Healthcare Industry: Challenges & Best Practices). Part of the ETL effort is aligning these to a common definition to avoid confusion on the dashboard.
- **Data Quality Checks:** Small hospitals should build in data validation during ETL. Since manual data entry errors or missing data are common, the transformation step can include cleaning (e.g. filtering out invalid values, standardizing date formats). **Data quality is crucial** – incomplete or incorrect data will lead to misleading dashboard indicators (ETL in The Healthcare Industry: Challenges & Best Practices). For instance, if discharge times are missing for some patients, the dashboard's length of stay metric could be off; an ETL process might flag or fix such issues (perhaps by substituting discharge date with current date for patients still admitted, etc.).

Setting up these pipelines may require technical expertise that small hospitals sometimes lack in-house. In those cases, **partnering with external experts or vendors** can help. For example,

some hospitals outsource the building of their data warehouse and ETL to specialized healthcare IT firms, or use pre-built integration solutions offered by EHR vendors. The **key is to automate** the data flow as much as possible – *instead of staff spending hours manually exporting and merging spreadsheets, automated pipelines should handle the heavy lifting* (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US). This ensures the dashboard data is up-to-date and reliable with minimal manual intervention.

Dashboard Visualization Tools and Platforms

With integrated data in place, the next step is choosing a platform to **visualize the KPIs and build the dashboard interface**. There are several popular options suitable for small hospitals:

- **Business Intelligence (BI) Tools:** Mainstream BI and visualization tools like **Microsoft Power BI, Tableau, or Qlik** are widely used in healthcare. These tools provide drag-and-drop interfaces to create charts, graphs, and interactive dashboards. They can connect to a variety of data sources (databases, Excel, cloud services) with relative ease. For instance, Power BI can natively connect to SQL databases or even directly to certain EHR backends, and then present interactive charts of e.g. readmission rates by month (Power BI in Healthcare - Data Analytics For Hospitals - Multishoring). These platforms also handle user access control (important for HIPAA compliance – ensuring only authorized staff can see patient-sensitive data). *Power BI in particular is often favored by resource-strapped organizations due to its lower cost and integration with Microsoft Office tools* (many hospitals already have Microsoft 365 subscriptions, which can reduce incremental costs for Power BI). Tableau is known for rich visualizations and is used in many larger systems; for a small hospital it can be effective but licensing costs may be higher. **Open-source BI tools** (like Metabase or Apache Superset) could be an alternative if budget is extremely constrained, though they may require more IT expertise to set up.
- **Built-in EHR Dashboards:** Some EHR systems offer their own dashboard or reporting modules. For example, smaller hospitals on **MEDITECH** or **Cerner** might use the vendor's built-in reporting solutions (MEDITECH's Data Repository with third-party tools, or Cerner's PowerInsight). These can be quicker to deploy for basic metrics, though they might be less flexible than standalone BI tools. It's worth checking if the hospital's existing systems have any **pre-configured dashboard templates** that can be leveraged.
- **Web-Based Dashboards and Templates:** There are also healthcare-specific analytics platforms (like Health Catalyst or Dimensional Insight) that provide pre-built healthcare data models and dashboards, though these are often geared toward larger institutions. That said, some companies or communities provide **free templates** for healthcare dashboards. For example, ClearPoint Strategy and other healthcare tech blogs share examples of KPI dashboards for hospitals (Top 30 Healthcare KPIs & Metrics to Track for Success) (Top 30 Healthcare KPIs & Metrics to Track for Success). A small hospital could start with such templates as a baseline – e.g. a template that already has visuals for readmission rates, occupancy, etc. – and then customize it to their data.

- **Excel or Lightweight Tools (for Starter Dashboards):** In very low-resource settings, even a well-structured Excel workbook can function as a rudimentary dashboard. For instance, an Excel-based dashboard could pull data from various sheets (or simple exports) and use pivot tables and charts to display KPIs. This is not ideal for real-time tracking, but it can be a **starting point** while building up more robust infrastructure. Many hospital administrators are comfortable with Excel, so this can also serve as a prototype to demonstrate the value of dashboards before investing in more sophisticated tools.

When choosing a platform, **consider ease of use and maintenance**. Small hospitals may not have a dedicated data analyst on staff; therefore, a tool that department managers or administrators can use with minimal training is valuable. Also important is the ability to update or add new visuals without programming. **Interactivity** is another benefit – modern dashboards let users filter by date range, by department, etc., which helps administrators drill down (for example, looking at length of stay by service line, or filtering quality metrics by physician).

Security and privacy must be kept in mind: any platform used should allow compliance with HIPAA. Typically, this means hosting the dashboard on a secure server (on-premises or HIPAA-compliant cloud) and controlling access. Many BI tools have row-level security features so that, say, patient-identifiable information is protected or only aggregate data is shown.

Finally, small hospitals should remember that a dashboard is *not just technology* – it's also about the design and content. The best platform will still require thoughtful configuration. Keeping the interface **simple and intuitive** is crucial: use clear charts, avoid overly cluttered screens (too many KPIs can overwhelm the viewer), and use consistent color-coding or symbols (e.g. red/yellow/green indicators) to draw attention to areas meeting or missing targets (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC) (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC). In the next section, we discuss which KPIs to include – the content that populates these dashboard tools.

Key Performance Indicators (KPIs) for Small Hospital Dashboards

Choosing the right **Key Performance Indicators (KPIs)** is arguably the most important part of building a performance dashboard. For a small local hospital, the dashboard should focus on a balanced mix of **clinical quality, operational efficiency, patient experience, financial performance, and workforce metrics**. Including too many indicators can cause information overload, so it's wise to start with a core set that aligns with the hospital's strategic goals and regulatory requirements (Fairview Southdale Hospital: Efficiency Through Quality and Innovation). Below is an overview of key KPIs that small hospitals should monitor. For each, we provide a definition, explain why it matters, describe how it's measured, and note any common benchmarks or target ranges.

Average Length of Stay (ALOS)

- **Definition:** Average Length of Stay is the average duration (in days) that patients spend in the hospital from admission to discharge. Typically, this is calculated by dividing the total inpatient days by the number of discharges in a given period. It can be measured for the hospital overall or by unit/service (e.g. surgical vs. medical wards). **In practical terms**, if a hospital had 300 inpatient days in a month and 100 patient discharges that month, the ALOS would be 3.0 days.
- **Why it Matters:** ALOS is a key indicator of **efficiency and care coordination**. Longer-than-necessary stays can signal inefficiencies in discharge planning or care processes, and they tie up beds that could be used for other patients. Moreover, *longer patient stays are associated with a greater risk of hospital-acquired infections and other complications, as well as higher patient mortality rates* (Top Hospital Performance Metrics You Need to Know). Reducing ALOS (without increasing readmissions) can improve patient outcomes since patients return home sooner and face less risk of inpatient complications. Financially, a shorter ALOS can reduce costs for both the hospital and payers; **Medicare and other payers often incentivize shorter stays** by bundling payments for episodes of care (Top Hospital Performance Metrics You Need to Know). However, ALOS must be balanced with readmission rates – discharging patients too quickly can lead to bounce-backs.
- **How it's Measured:** The primary data source is the **hospital's admission-discharge records**, usually from the EHR or admission/discharge/transfer (ADT) system. Most hospitals compute ALOS on a monthly or quarterly basis (though it can be tracked in real-time on the dashboard as well). One common formula is: *ALOS = (Sum of inpatient days for discharges in period) / (Number of discharges in period)*. It's important to ensure the calculation excludes outpatient cases and perhaps certain categories (newborns may be counted separately, for instance). Many dashboards will display ALOS trends over time, and possibly drill down by department.
- **Benchmarks/Goals:** ALOS can vary by hospital type and patient case mix. **Nationally, the average length of stay for short-term acute care hospitals in the U.S. was about 4.9 days in 2023** (Top Hospital Performance Metrics You Need to Know). Small rural hospitals and critical access hospitals often have lower acuity patients and might see a shorter ALOS (sometimes 3–4 days on average). Each hospital should also benchmark against itself (e.g. last year's ALOS) and set targets. A common goal is to reduce ALOS without increasing readmissions – for example, aiming for a 0.1 or 0.2 day reduction year-over-year if improvement is needed. Hospitals also compare against peer groups: a critical access hospital might compare to other CAHs of similar size. If ALOS is significantly above benchmarks, it flags an opportunity to investigate causes (such as delays in consultations, waiting for test results, or placement issues for discharge).

30-Day Readmission Rate

- **Definition:** Readmission rate is the percentage of patients who are readmitted to a hospital within a specified time period after discharge, typically **30 days**. This often focuses on unplanned readmissions to any acute care hospital (not just the same hospital) for the same or related condition. For example, if 100 patients were discharged in a month and 15 of them had an unplanned readmission within 30 days, the 30-day readmission rate is 15%. This KPI is often calculated for certain conditions (like heart failure, pneumonia, heart attack) as well as an all-cause aggregate.
- **Why it Matters:** Readmissions are seen as an indicator of **quality of care and care coordination**. High readmission rates may suggest that patients weren't fully stabilized, didn't receive adequate discharge planning or follow-up, or had issues in post-hospital care. As such, *a high readmission rate indicates that patients may not have received proper care or follow-up, whereas lower readmission rates indicate stronger quality of care* (Top Hospital Performance Metrics You Need to Know). Importantly for small hospitals, readmissions also have financial implications: Medicare penalizes hospitals with excessive readmissions for certain conditions (through the Hospital Readmissions Reduction Program). Thus, reducing avoidable readmissions can avoid penalties and improve patient satisfaction. It also frees up capacity — fewer readmissions mean beds can be available for new patients.
- **How it's Measured:** The hospital needs to track discharged patients and determine if they were readmitted within 30 days. This can be tricky for a single hospital because patients might be readmitted elsewhere. Small hospitals often rely on **coding and billing data** to flag if a patient returned, or use state/regional health information exchanges if available to catch external readmissions. The calculation is: *(Number of index discharges who had a readmission within 30 days) / (Number of index discharges)*, expressed as a percentage. Many dashboards will show readmission rates for key diagnostic categories (heart failure, COPD, pneumonia, etc.) as well as the overall rate. Data usually come from the EHR (for internal readmits) and potentially payer data or regional data for external ones. **Risk-adjustment** is sometimes applied in benchmarks (to account for patient acuity differences), but for internal tracking, raw percentages are typically used.
- **Benchmarks/Goals:** Readmission benchmarks vary by hospital and condition. **The average all-cause 30-day hospital readmission rate in the U.S. was about 14.6% in 2023** (Top Hospital Performance Metrics You Need to Know). Small hospitals might have different rates depending on their case mix; critical access hospitals often pride themselves on care transitions that keep readmissions low, but if they stabilize and transfer out many complex cases, their readmission rate might look lower by nature of patient mix. Generally, hospitals aim to keep the all-cause readmission rate around or below 10-12% if possible, and for specific conditions like heart failure, below ~20% (national average for heart failure often ranges 20-25%). Regulatory programs often set targets; for example, Medicare's penalties kick in for certain rates above expected. A small hospital should set a goal to continuously reduce readmissions or stay below national averages. **Excessive readmissions (in the high teens or above)** would be a red flag, since *hospitals with the highest readmission rates may*

face financial penalties and quality issues (Top Hospital Performance Metrics You Need to Know).

Bed Occupancy Rate (Bed Utilization)

- **Definition:** Bed Occupancy Rate is the percentage of available inpatient beds that are occupied by patients at a given time or over a period. It is often measured as an average over a day, month, or year. The formula is typically: *(Total inpatient days in period) / (Total bed days available in period) × 100%*. For example, if a 50-bed hospital has 1,200 patient-days in a month (i.e. on average 40 patients per day in the hospital) and there were 50 beds * 30 days = 1,500 bed-days available, the occupancy rate = 1,200/1,500 = 80%. Occupancy can also be measured in real-time (e.g. "current occupancy is 90%" means 45 of those 50 beds are filled right now).
- **Why it Matters:** Occupancy rate reflects **capacity utilization and operational efficiency**. For a small hospital, an occupancy that is too low could indicate under-utilization of resources or low patient volumes (which can hurt financial performance). On the other hand, extremely high occupancy can strain staff and resources, leading to longer wait times for admissions and potentially lower quality of care if the hospital is overcrowded. *Occupancy rates that are too high tend to negatively impact patient care* because staff may be overworked and there's little room for new emergencies (5 Essential Hospital Performance Metrics in 2025). There is an optimal zone: enough patients to efficiently use resources, but not so many that it exceeds capacity. Occupancy is also important for **financial viability** – small hospitals often need a certain occupancy level to cover fixed costs. However, unlike large hospitals that might aim for ~85% occupancy (a commonly cited optimal rate for efficiency), smaller hospitals often operate at lower occupancy. They need some buffer for fluctuations and often have fewer total patients. **Patient safety** can be impacted by occupancy too; for instance, high occupancy has been linked with higher infection rates and stress on staff.
- **How it's Measured:** Data come from the **census reports** in the hospital's admission/discharge system. Most hospitals track daily midnight census (how many patients at midnight each day) to calculate occupancy over time. The number of staffed beds is used as the denominator (important: "staffed" beds may be fewer than "licensed" beds if some beds are closed due to staffing). The dashboard can display current occupancy (e.g. updated every hour from the ADT system) as well as average occupancy over the past month or year. Many small hospitals also break this down by unit – e.g. Medical/Surgical unit occupancy, ICU occupancy (if they have an ICU), etc., since one unit might be full while another is half empty.
- **Benchmarks/Goals:** For large hospitals, ~85% occupancy is often cited as ideal for balancing efficiency and flexibility. **For smaller hospitals, one source suggests an optimal occupancy around 45%** on average (5 Essential Hospital Performance Metrics in 2025). This lower number might seem counterintuitive, but small hospitals (especially critical

access hospitals) have fewer beds and often see fluctuating demand, so they may operate safely at lower average occupancy. In fact, data shows that *in 2023 the average bed utilization rate across U.S. hospitals was about 50.9%, with urban hospitals higher and rural hospitals lower* (Top Hospital Performance Metrics You Need to Know). Many critical access hospitals (CAHs) often have occupancy well below 50%. The goal for a small hospital might be to **increase occupancy if it's very low** (to improve financial sustainability), or to manage processes when occupancy spikes. If a small hospital regularly hits 80-90% occupancy, that could signal a need for expansion or better throughput (or it might reflect a small number of beds where a difference of a few patients swings the percentage). Administrators often watch this KPI to make staffing decisions too – for example, not overstaffing when occupancy is low, and ensuring staffing levels rise when occupancy rises.

Patient Satisfaction (HCAHPS Scores)

- **Definition:** Patient satisfaction in U.S. hospitals is commonly measured by the **HCAHPS survey** (Hospital Consumer Assessment of Healthcare Providers and Systems). HCAHPS is a standardized survey of patients' perspectives on care, covering topics like communication with doctors and nurses, responsiveness of staff, cleanliness, pain management, and discharge information. Results are often summarized as star ratings (1 to 5 stars) or top-box scores (percentage of responses that were "Always" for the best possible answers). A hospital's "HCAHPS score" can refer to its overall star rating or scores on specific domains. Internally, hospitals may also use other patient satisfaction measures (like Press Ganey survey scores) with more detail, but HCAHPS provides a comparable benchmark across all hospitals.
- **Why it Matters:** Patient satisfaction is both a **quality measure and a competitive factor**. Satisfied patients are more likely to trust and return to the facility and to adhere to medical advice, which can influence outcomes. From a community reputation standpoint, small hospitals live and die by their standing in the community – poor patient experience can quickly erode community trust. HCAHPS is also tied into federal value-based purchasing; Medicare's reimbursement to hospitals is affected in part by HCAHPS scores. Thus, improving patient experience can have direct financial benefits (or avoiding penalties). More importantly, *HCAHPS provides actionable data on how hospitals can improve patient care and services* (Top Hospital Performance Metrics You Need to Know). For example, if a small hospital sees low scores on "communication about medications," it can target that area for quality improvement. In a small hospital, word-of-mouth is powerful; high satisfaction can bolster the hospital's utilization by encouraging patients to choose it over distant competitors for elective services.
- **How it's Measured:** HCAHPS surveys are administered to a random sample of adult inpatients after discharge (typically by mail or phone via a third-party vendor). Results are usually aggregated quarterly. The dashboard might not display "real-time" HCAHPS since surveys come in after the fact, but it can display the latest scores by domain. A typical dashboard might show the hospital's HCAHPS star rating (overall), and scores for key

domains (like % of patients who rated the hospital 9 or 10 on a 0-10 scale, communication composite score, etc.). Data sources are the survey results (from vendors or CMS reports). Internally, some hospitals supplement HCAHPS with their own shorter in-house surveys for more immediate feedback; those could also be included as KPIs (for instance, a monthly outpatient satisfaction score).

- **Benchmarks/Goals:** HCAHPS is reported publicly, so national and state benchmarks are available. Typically, about 72% of patients nationally might rate their hospital a 9 or 10, and about 68% might say "Definitely Yes" they would recommend the hospital (these are ballpark figures; it varies) (Top Hospital Performance Metrics You Need to Know). The star rating system condenses all the measures: in 2023, **only about 4.6% of hospitals achieved a 5-star HCAHPS rating, and ~29% achieved 4-star** (Top Hospital Performance Metrics You Need to Know) (Top Hospital Performance Metrics You Need to Know). Many small hospitals strive to reach 4 or 5 stars, using that as a marketing point ("Our community hospital is a 5-star hospital in patient experience"). At minimum, the goal is to meet or exceed national average on each domain. If the hospital is below average on any dimension (say cleanliness or quietness at night), that becomes a focus area. Because patient experience has subjective elements, improvement can be gradual; even a 1-2% increase in top-box scores year over year is seen as significant. Ultimately, **maintaining high patient satisfaction is crucial for community trust** and is often a board-level metric in small hospitals.

Hospital-Acquired Infection (HAI) Rate

- **Definition:** This KPI tracks the rate of infections that patients acquire during their hospital stay that were not present on admission. It can be expressed in various ways: overall percentage of patients who develop any hospital-acquired infection, or more specific measures like infection rates per device days (e.g. central line-associated bloodstream infection per 1,000 central line days, catheter-associated UTI per 1,000 catheter days) or surgical site infection rates for certain procedures. As a simpler dashboard metric, small hospitals might use "number of HAI cases this month" and an infection rate per 100 admissions. Another approach is the *NHSN Standardized Infection Ratio (SIR)* which compares observed infections to a national benchmark expected number (but that might be too granular for a high-level dashboard). For simplicity, an **overall HAI rate** could be defined as: (Number of patients who developed an HAI / total number of patients) × 100%.
- **Why it Matters:** Hospital-acquired infections are a **patient safety and quality** indicator. Every infection acquired in the hospital represents potential harm to a patient that was possibly preventable. HAIs lead to prolonged hospital stays, higher treatment costs, and even mortality. They also now affect reimbursement because certain HAIs (like central line infections or some surgical site infections) can cause Medicare to not pay for the additional costs. For a small hospital, a cluster of infections can be devastating not only to patients but also to the hospital's reputation in the community. Therefore, tracking and reducing HAIs is paramount. *Dashboards that highlight infection counts and rates help alert decision-makers*

to potential infection control issues and prevent harm (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC). For example, if the dashboard shows an uptick in C. diff infections, the infection control team can intervene quickly. Lowering HAI rates improves overall outcomes and reduces length of stay (since infections often extend a patient's hospitalization). It's also a key part of accreditation and quality programs (The Joint Commission and CMS monitor these closely).

- **How it's Measured:** Infection data is typically collected by the **infection control department**. They use criteria (often defined by CDC's NHSN) to identify which infections count as hospital-acquired. Data sources include lab results (positive cultures), patient records (symptoms, physician diagnoses), and device utilization data. On a dashboard, the measure might be "HAI cases this month" with a trend line, or "HAI rate per 100 patients" with comparison to last quarter. Specific metrics often tracked include: **CLABSI rate**, **CAUTI rate**, **Surgical Site Infection rate**, **C. difficile infection rate**, etc. For a small hospital, numbers might be small (e.g. 2 infections can already be a high rate if the volume is low), so usually both count and rate are considered. Data is often reported to CDC's NHSN, so that same data can feed an internal dashboard.
- **Benchmarks/Goals:** The ultimate goal is **zero preventable infections**. Nationally, on any given day around 3-4% of hospitalized patients have at least one HAI (CDC program reports decline in hospital infections - AHA News), which gives a rough point-prevalence. Over a year, some studies found around *3.2% of patients develop an HAI during their hospitalization* (CDC program reports decline in hospital infections - AHA News). A small hospital might aim to be below that (i.e. <3% of patients developing an infection). Many hospitals set specific numeric goals like "0 CLABSI this year" or "50% reduction in C. diff cases compared to last year." Benchmarks are often provided in terms of SIR = 1.0 as the national average. If a hospital's SIR is 0.5, they are at half the national average (better); if 1.5, they are worse. The dashboard might show progress toward zero harm. **Continuous monitoring is key**, because even one infection can prompt reviews. Success is measured by stretches of time with zero infections and meeting any national targets (e.g. some national programs have goals like 20% reduction in certain HAIs year-over-year).

Mortality Rate

- **Definition:** In a hospital performance context, this usually refers to the inpatient mortality rate – the percentage of patients who die during hospitalization. It can be measured overall or for specific conditions (e.g. STEMI mortality rate, pneumonia mortality rate). Often it's given as a rate per 100 admissions (e.g. 2 deaths per 1000 patients = 0.2% mortality). Risk-adjusted mortality indexes (like observed/expected ratios) are also used in larger systems, but a small hospital might focus on raw mortality numbers given relatively low volumes.
- **Why it Matters:** Mortality is the most direct outcome measure of hospital care. While not all deaths are preventable (many very ill patients will succumb despite best care), *a higher-than-expected mortality rate can indicate issues in care quality or patient safety* (for

instance, failure to rescue, or not recognizing deteriorating patients in time). Tracking mortality helps a hospital ensure that its care practices are effective in stabilizing and treating patients. Small hospitals often transfer their sickest patients to tertiary centers, which can complicate how mortality is interpreted (if they transfer early, their inpatient mortality might be low, but the measure of success is appropriate transfers and care up to transfer). Nonetheless, any unexpected inpatient death will trigger review. On a dashboard, mortality rates keep the focus on **clinical outcomes** at the highest level. Improvement efforts such as rapid response systems, sepsis protocols, etc., are aimed at reducing preventable deaths. Publicly, some mortality metrics (like heart attack 30-day mortality) are reported by CMS, affecting reputation.

- **How it's Measured:** Using discharge data – every discharge has an outcome (alive, died, or sometimes hospice disposition). The basic metric is: *(Number of inpatient deaths / Number of inpatient discharges) × 100%*. This can be done monthly or quarterly. Many dashboards break it down by category: for example, **surgical mortality rate**, **medical mortality rate**, or specific diagnoses (CMS tracks 30-day mortality for conditions like myocardial infarction, heart failure, pneumonia – these can be on the dashboard if data is available, though those are 30-day post-discharge measures and may require linking to external data). Small hospitals might just track raw counts given the low numbers (e.g. "3 deaths in Q1, 2 in Q2"). If doing risk adjustment, the hospital might use a service or benchmark that provides an expected mortality; then a ratio can be shown (O/E ratio). But for simplicity, many will just show the percent or number and perhaps compare it to national benchmarks for key conditions.
- **Benchmarks/Goals:** Overall hospital mortality rates vary by case mix. A hospital mostly doing routine surgeries and low-acuity medicine might have an inpatient mortality well under 1%. A hospital with an ICU and sicker patients might see 2-4%. **National data for specific conditions**: for example, *heart attack (AMI) 30-day mortality average ~12.6%* and *stroke ~13.7%* in recent data (Top Hospital Performance Metrics You Need to Know). Those include deaths after discharge too. For inpatient-only, it's lower. A small hospital might target **zero preventable deaths**, meaning any mortality triggers a review to see if it could have been avoided. They might track *"unexpected mortality"* separately (excluding hospice/palliative cases). Benchmarking can be done against national averages or state averages, but due to small numbers, caution is needed (one or two cases can swing percentages in a small facility). **Trending over time** is often more meaningful than comparing to a large hospital. Achieving a sustained low mortality or improving from, say, 2% to 1.5% can be significant.

Emergency Department (ED) Wait Time

- **Definition:** ED Wait Time typically refers to how long patients wait in the emergency department before being seen by a healthcare provider (a doctor, PA, or NP). A common measure is the **median time from arrival to initial physician evaluation**. Another related metric is **Length of stay in ED** (total time in ED), but the initial wait is a critical subset of that. ED throughput can be broken into: door-to-triage time, door-to-doc time, and door-to-

disposition time. For a small hospital dashboard, a key focus is often *the average or median wait time for ED patients*. For example, "Median ED wait time this month was 30 minutes."

- **Why it Matters:** ED wait time is a major driver of patient satisfaction and quality, particularly in urgent or emergent situations. Long waits can lead to patients leaving without being seen (LWBS) or delays in treatment for serious conditions. In a community setting, if word gets around that the local hospital's ER has very long waits, people may bypass it for other facilities. Conversely, a reputation for quick, attentive emergency care is a competitive advantage. Clinically, reducing wait time can improve outcomes for time-sensitive conditions (like strokes, heart attacks, sepsis). ED wait is also a proxy for **hospital flow** – if inpatients aren't moving (high occupancy) or processes are inefficient, the ED backs up. So it ties back to bed occupancy and staffing adequacy. Many health systems use ED wait time as a key operational metric to determine if they need more staff on duty or better triage processes. For small hospitals, even with lower volume, a single critical case can monopolize staff and increase waits for others, so tracking the average wait helps manage staffing flexibility.
- **How it's Measured:** Data is captured in the **ED information system** (or EHR) with timestamps: when a patient arrives (check-in time) and when they are first seen by a provider. The dashboard can compute the median or average of these differences for a given period (daily, monthly). Often the median is used because wait times can be skewed by outliers. The measure reported by CMS (for example in Hospital Compare) is usually the median ED wait time for various categories (urgent vs non-urgent). A small hospital might simply show: "Current average wait: X minutes" updated in real time, and maybe "Today's peak wait: Y minutes." For retrospective analysis, a monthly average or 90th percentile can be displayed. Data source is the **ED log**; even a manual log can be digitized.
- **Benchmarks/Goals:** According to national statistics, **the average ED wait time to see a provider in the U.S. was about 35-40 minutes in recent years** (Average wait time in ED to see a physician in the U.S. 2017-2022). However, this varies widely by hospital; large urban ERs often have longer waits, while small rural hospitals can often boast shorter waits. A small hospital might set a goal like "average ED door-to-provider time under 20 minutes." Indeed, many critical access hospitals market that their ER wait times are just a few minutes. If current performance is, say, 30 minutes, the hospital might aim to cut it to 15 minutes by adding a triage protocol or on-call provider. Another benchmark: The median **total time in ED** nationwide is around 2.5 to 3 hours (Mapped: Emergency Room Visit Times by State - Visual Capitalist) (from arrival to discharge or admission), but small hospitals would aim for less since they have lower volume. Regulators and quality orgs sometimes have recommended thresholds for wait by triage level (for emergent cases, essentially 0–5 minutes, for urgent maybe <15, etc.). For the dashboard, having a *real-time gauge* (green if under target, red if exceeding) can spur action – e.g., if wait time is creeping up, call in an extra nurse or physician if possible. Ultimately, maintaining a low ED wait time improves patient experience and safety, so it should be closely watched against internal targets.

Operating Margin

- **Definition:** Operating Margin is a financial KPI that measures the percentage of revenue that remains as profit after covering operating expenses. It is calculated as: *(Operating Income / Operating Revenue) × 100%*. Operating income is essentially patient revenue plus other operating revenue minus all operating expenses (staff salaries, supplies, utilities, etc.). For example, if a hospital's operating revenue in a quarter is $5 million and operating expenses are $4.8 million, the operating income is $0.2 million and the operating margin is 4%. This indicator focuses on the hospital's core operations, excluding non-operating items like investments or donations.
- **Why it Matters:** Operating margin is a primary indicator of **financial health and sustainability**. Small hospitals often operate on very thin margins due to lower patient volumes and high fixed costs. A positive margin means the hospital can reinvest in services, pay staff, maintain equipment, and remain open to serve the community. A negative margin, sustained over time, signals financial trouble that could lead to service cuts or even closure. Many rural and community hospitals have struggled with negative margins; in fact, over half of rural hospitals have had negative margins in recent years (Rural Hospital Performance in Guideline-Recommended Ischemic ...). Monitoring the margin on a dashboard keeps the leadership and board aware of financial performance in near real-time. It can prompt cost-control efforts or revenue cycle improvements if the margin is deteriorating. It also ties together many factors: volumes (if patient volume drops, revenue drops), length of stay, payer mix, and cost management. Essentially, it's the bottom-line outcome of all operational decisions. A dashboard might show operating margin by month and a year-to-date figure, possibly alongside budget targets.
- **How it's Measured:** Data comes from the **hospital's financial reporting system or general ledger**. Typically, the finance department prepares an income statement monthly. For the dashboard, those figures can be loaded so that after the month closes, the margin is updated. Some hospitals with advanced analytics may even estimate it more frequently (weekly or daily flash reports), but generally it's a monthly KPI. The calculation is straightforward, but ensuring accurate and timely financial data is the challenge. The dashboard might also break it down further: e.g., show revenue, expense, and margin in absolute dollars and percentage. For context, sub-indicators like **cost per adjusted discharge** or **revenue per patient day** can be included to diagnose why margin is moving.
- **Benchmarks/Goals:** A typical **operating margin for U.S. hospitals in recent years hovered around 2-3% on average**, though it fluctuated (especially during COVID-19 times) (Hospital Margins Rebounded in 2023, But Rural Hospitals and ... - KFF). For small hospitals, margins are often tighter; many strive just to break even (0% margin) or slightly positive. A common goal might be something like 1-5% positive margin annually. Non-profit hospitals generally target a modest margin (enough to fund capital improvements). If a small hospital can consistently achieve, say, 3%, it's doing reasonably well. However, one must consider that **many small rural hospitals have negative margins** – e.g., one analysis found average operating margins of +2.6% for independent CAHs and higher (7%) if part of a system (Critical Access Hospitals Feel Unique Financial Strain), but many had negative margins. The

dashboard should flag if margin drops below 0% or below budget expectations. Some hospitals also track **EBITDA margin** or **total margin**, but operating margin is more directly controllable by management. The board of a small hospital will definitely keep an eye on this KPI as an overall performance indicator. Achieving any positive margin could be considered success in a tough environment, but the long-term goal is to stabilize and improve it so the hospital can invest in quality improvements and new services.

Staff Turnover Rate

- **Definition:** Staff Turnover Rate is the percentage of employees who leave the hospital (voluntarily or involuntarily) over a period, typically one year. It is often calculated as: *(Number of staff who left during period) / (Average total staff)* × 100%. This can be computed for all staff or by category (e.g. nursing turnover, physician turnover). For example, if a hospital has on average 200 employees and 30 left over the year, the turnover rate is 15%. Small hospitals might focus on nursing turnover specifically, since nursing shortages are critical, or overall hospital turnover.
- **Why it Matters: High turnover can significantly impact hospital performance**. When experienced staff leave, the hospital incurs costs to recruit and train new staff, and in the interim may have to use temporary/agency staff or operate understaffed, which can affect patient care quality. Continuity of care and institutional knowledge suffer with high turnover. In small hospitals, where teams are tight-knit and each person often wears multiple hats, losing an employee can have outsized effects. Turnover is often linked to staff satisfaction and burnout. Monitoring it on the dashboard signals to leadership to pay attention to workforce issues. A rising turnover rate may indicate poor morale, leadership issues, or uncompetitive salaries, prompting intervention. Conversely, reducing turnover can improve patient care (because a stable, experienced workforce is generally more effective) and reduce costs. It's said that replacing a single nurse can cost tens of thousands of dollars in recruitment and onboarding expenses. Thus, turnover is not only a HR metric but a financial and quality one. Many small hospitals also serve as community employers, so keeping turnover low is a point of pride and stability.
- **How it's Measured:** The HR department typically tracks hires and separations. The dashboard can be fed by HR data (either through the HR information system or manually updated monthly figures). Usually turnover is measured annually, but it can be reported on a rolling 12-month basis each month (to see trends). For example, "12-month RN turnover rate as of June" and see how it's moving. Small hospitals might also track **vacancy rates** (positions unfilled) as a related metric. Data segmentation can help: e.g., is most turnover in a specific department? Are many retirements causing it or is it people quitting early in their tenure? Such breakdowns might be more detailed analysis behind the scenes, while the dashboard shows the high-level percentage.
- **Benchmarks/Goals:** Turnover rates in healthcare have been high in recent years. **In 2023, the average hospital staff turnover rate in the U.S. was around 20%** (Hospital staff

turnover rate U.S. 2023 - Statista), a slight improvement from even higher rates in 2021. Nursing turnover often exceeds 15% nationally, and entry-level roles like nursing assistants can be 30%+. For small hospitals, a reasonable target might be to stay below the national average – for example, aim for <15% overall turnover. Many high-performing hospitals try to keep nursing turnover under 10-12%. Critical access hospitals sometimes have lower turnover if they are one of the main employers in the community and staff tend to stay long-term; others struggle if younger clinicians leave for urban centers. The dashboard might set a goal line (e.g. 15%) and show current rate relative to it. If the turnover rate is high, initiatives like retention bonuses, workplace improvements, or mentorship programs might be triggered and then hopefully reflected in improving turnover metrics over time. Also, **tracking turnover by quarter** can show if interventions are making a difference (e.g., "Our turnover dropped from 5% a quarter to 3% after we gave across-the-board raises or improved staffing ratios."). In summary, the goal is to minimize turnover and retain talent, as that underpins all other performance areas.

Note: The above KPIs are among the most common and impactful for small hospitals. Each hospital may include additional ones pertinent to its situation – for example, **"Time to Transfer"** (if the hospital frequently transfers patients out, how quick is the process), **Outpatient metrics** (like clinic no-show rates or referral conversion rates, if they have associated clinics), or **Community health metrics** (for a hospital focusing on population health). However, the KPIs listed (length of stay, readmissions, occupancy, satisfaction, infection, mortality, ED wait, financial margin, and staff turnover) provide a well-rounded picture covering quality, experience, efficiency, and sustainability. Importantly, **each KPI on the dashboard should be tied to a goal or benchmark**, so viewers know what success looks like and can spot when metrics are out of range.

Challenges in Building Dashboards for Small Hospitals (and Solutions)

Implementing a performance dashboard is a multi-faceted project, and small hospitals face unique **challenges** in this endeavor. Limited budgets, fewer IT staff, and fragmented systems can make it difficult to create and maintain an effective dashboard. Here we highlight common challenges and discuss potential solutions or workarounds:

- **Limited IT Resources and Expertise:** Small hospitals often have very small IT teams (if any dedicated data analysts at all). Staff may be juggling multiple roles and **have little time for complex data analysis and reporting tasks** (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US). This makes it hard to set up data integrations or custom dashboards. **Workarounds:** Consider leveraging **external resources** and modern cloud technology. Some hospitals opt for **outsourced or managed reporting services**, which provide expertise on demand (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US). For example, engaging a consulting service or a vendor to set up the dashboard infrastructure can jump-start the project. Additionally, cloud-based BI tools can reduce the maintenance burden (no on-prem server to manage). **Training existing staff** is critical too – pairing technology investments with staff development ensures the team can eventually manage the dashboard (Link). Free or low-cost training resources for tools like Power BI or Tableau can empower a motivated staff member to become the local "data champion." Finally, prioritize ease-of-use solutions: choose tools that non-IT people can learn. An executive or nurse manager with some training might then take ownership of updating or using the dashboard, distributing the workload.

- **Fragmented Data and Siloed Systems:** As discussed, small hospitals frequently use multiple disparate systems that don't talk to each other natively. **Data is often "spread across multiple systems, stored in different formats"**, and not automatically aggregated (Using the Dashboard Technology Properly). Additionally, some data might still be on paper or in Excel files. **Workarounds:** A phased integration approach can help. Rather than attempting a massive data warehouse integration of all systems at once, identify a *few key sources to integrate first*. For instance, start by linking the EHR and the billing system data for core clinical and financial metrics. Use simple tools for initial integration – even exporting CSV files from one system and importing to another can be a start if live interfacing is too complex initially. Over time, implement interface engines or ETL scripts for automation. **Data standardization** is crucial: adopt common codes and definitions hospital-wide (for example, ensure that department names or physician identifiers are consistent across systems) so that merging data is easier and reduces errors (ETL in The Healthcare Industry: Challenges & Best Practices). Another solution is to *use the EHR as a central source whenever possible* – many EHRs allow custom data fields, so you could enter key HR or operational data there to have one source. If fragmentation is a major hurdle, consider **joining a larger health information exchange (HIE)** or network. Sometimes state HIEs aggregate data which can then be used for your analytics. Moreover, as a longer-term strategy, some small hospitals convert to integrated IT systems (like a single vendor for both clinical and financial systems, e.g. CPSI or Epic Community Connect) – this greatly simplifies future dashboard efforts.

- **Budget Constraints:** Small hospitals operate on thin margins (as noted above) and may not have capital to invest in fancy analytics software or additional staff. Custom enterprise solutions might be cost-prohibitive. **Workarounds:** Take advantage of **cost-effective or free tools and resources**. There are free versions of BI tools (Power BI Desktop is free for local use, and some open-source dashboard platforms have no license cost). Leveraging existing software can save money – for example, if the hospital already has Microsoft Excel or a basic SQL server as part of operations, these can be used initially. Also, **seek grants or programs for rural health IT**: organizations like the USDA, HRSA, or state health departments sometimes offer grants for technology improvements. The **Flex Program** for critical access hospitals is one such resource, and it often supports quality reporting improvements (Link). Another approach is **collaboration**: partner with other hospitals in your network or region to share a dashboard solution. If your hospital is part of a health system or alliance, a centralized dashboard that all members use can distribute costs. Cloud services also turn capital expenses into operating expenses – instead of buying servers, you pay a monthly fee for a hosted database or software, smoothing out costs. Finally, emphasize the ROI of the dashboard: a well-implemented dashboard can identify inefficiencies and save money (e.g. reducing readmissions or length of stay saves costs). Making that case to the board might unlock some funding by treating the dashboard as an investment in cost reduction and quality improvement.

- **Manual Processes and Data Accuracy:** Many small hospitals rely on manual data entry and spreadsheets for reporting. This is time-consuming and prone to errors. A dashboard built on faulty data will be mistrusted. **Workarounds:** Move toward **automation in steps**. For instance, if census data is manually written down daily, switch to pulling it automatically from the EHR's census report. If staff are manually calculating metrics, see if the EHR or financial system can produce those calculations. Even intermediate solutions like macro-enabled spreadsheets or simple databases can enforce consistency. It's also wise to implement **data validation checks** – e.g., the dashboard can highlight if a value seems abnormally high or low (which might indicate a data entry error). Creating a *"single source of truth"* for each data element is important: decide which system is the authoritative source for each KPI and always pull from there. This reduces discrepancies. Moreover, involve department heads in reviewing the dashboard data for reasonableness, especially in early stages. They can often catch errors (like "that number doesn't look right") and trace it back to a data issue to fix. By gradually building trust in the data, the hospital staff will come to rely on the dashboard rather than separate siloed reports. **Automating data refresh** (even if just nightly) will also free staff from the drudgery of compiling reports, allowing them to focus on analysis and action.

- **Change Management and User Adoption:** Introducing a new dashboard system means changing how people access and use information. Some staff might be accustomed to lengthy printed reports or ad-hoc queries. There can be resistance to using the dashboard, or misunderstandings of the data. Additionally, if the dashboard isn't designed with the end-user in mind, it might go unused. **Workarounds:** It's crucial to involve end users (nurses, managers, physicians, executives) in the **design and rollout** of the dashboard. Solicit their input on which metrics matter most to them and how they would like to see them. This not only ensures the dashboard meets their needs, but also increases buy-in. Provide training sessions and make the introduction exciting – show the benefits (e.g., how in two clicks they can get the info that used to take hours in Excel). Address concerns about data transparency – sometimes people fear being judged by numbers. Emphasize that the dashboard is a tool for improvement, not punishment. Also, **avoid information overload**: don't launch with 100 metrics that overwhelm users (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC). Start with a concise set of KPIs (the ones truly critical) so the dashboard is digestible. You can always expand later. Ensure that each KPI has clear definitions available, so users know exactly what the metric means (for example, what's included in "readmissions" or how "turnover" is calculated). This clarity prevents misinterpretation and builds trust. Celebrating early "wins" can also help – for instance, if the dashboard helped identify a problem (like a rise in infections) and the hospital fixed it, share that story so staff see the tangible value of using data. In summary, treat the dashboard implementation as a change management project: communicate, train, gather feedback, and iterate.

- **Integrating Benchmark and External Data:** Another challenge is putting your hospital's performance in context. Small hospitals might wonder, "Is our 10% turnover good or bad compared to others?" Without benchmarks, it's hard to tell. However, getting external data into the dashboard (from national databases or peer groups) can be challenging. **Workarounds:** Many KPIs have public benchmarks (as we cited throughout). The hospital can manually update a few benchmark figures periodically on the dashboard for reference. For example, update the national average values every year when new reports come out (like average HCAHPS or national readmission average). Some organizations provide **benchmarking services for rural hospitals** – e.g., the National Rural Health Association or state hospital associations might distribute comparison data. These could be loaded into the dashboard as a separate dataset for comparison. Another solution is **peer group collaboration**: if you have a network of similar hospitals, agree to share some anonymized metrics with each other for mutual benchmarking. Technically this could even be a simple shared Google Sheet that the dashboard also pulls data from. The key is to provide context on the dashboard: perhaps a small indicator or second bar showing the benchmark next to your hospital's value. This helps interpret performance at a glance (like, "Our hand hygiene compliance is 85% vs the benchmark of 90% – below target, needs improvement"). In terms of tools, some dashboard platforms allow direct connection to public datasets or APIs (for instance, pulling data from CMS's API for Hospital Compare). If the expertise is available, integrating those can automate benchmark updates. Otherwise, manual periodic updates of benchmark values is an acceptable workaround given that benchmarks don't change as frequently as your own data.

Despite these challenges, many small hospitals have found ways to succeed in building useful dashboards. It often requires creativity, persistence, and sometimes external help, but the payoff is significant. By addressing technical hurdles incrementally and fostering a data-driven culture, even a resource-limited hospital can enjoy the benefits of a modern performance dashboard. As one rural health resource put it, *"Technology to support using data for business intelligence is*

increasingly available at reasonable cost" – meaning the gap between big and small facilities in analytics is closing (Link). The next section highlights some real-world examples and tools that small hospitals have used to overcome these challenges.

Examples and Tools Tailored for Smaller Hospitals

Building an internal dashboard is not a theoretical exercise – many small and community hospitals have done it successfully. Learning from their experiences, as well as utilizing tools designed for smaller-scale operations, can guide your implementation. Here are a few illustrative examples and resources:

- **Use of Balanced Scorecard Framework:** Small hospitals often tie their dashboard metrics to a broader performance framework like the *Balanced Scorecard*. For instance, the National Rural Health Resource Center suggests using a Balanced Scorecard with measures in finance, quality, workforce, and operations, and notes that *plans typically include dashboards with a mix of external measures (e.g. CMS quality metrics) and internal measures (finance, workforce, etc.)* (Link). One critical access hospital reported developing **department-level dashboards** that show each unit's performance on key metrics alongside goals (Fairview Southdale Hospital: Efficiency Through Quality and Innovation). For example, Fairview Southdale Hospital (a community hospital) required each department to monitor a formal dashboard of efficiency and quality indicators (covering everything from patient satisfaction to length of stay to cost per case) to promote accountability (Fairview Southdale Hospital: Efficiency Through Quality and Innovation). This real-world case demonstrated that even at a smaller scale, having department-specific dashboards with targets fosters a culture of continuous improvement. Administrators met regularly to review these metrics, and any metric not meeting target was flagged for action (Fairview Southdale Hospital: Efficiency Through Quality and Innovation). The lesson: **link the dashboard to your strategic goals and accountability structure.** It helps to start with a framework (like Balanced Scorecard or a specific quality improvement initiative) so that the dashboard isn't just a random collection of numbers, but a tool aligned with your hospital's mission and improvement projects.

- **Templates and Pre-Built Dashboard Solutions:** Recognizing the need, some organizations have produced **dashboard templates and tools geared towards small hospitals**. For example, Stratis Health and the Flex Monitoring Team have tools like the *MBQIP (Medicare Beneficiary Quality Improvement Project) Data Reports* for critical access hospitals, which essentially function as dashboards for key quality measures (e.g., ED transfer communication, outpatient quality measures). These are often provided in user-friendly formats (like Excel-based dashboards) and can be a starting point. Additionally, companies like **Chartis** (through the iVantage platform) created the *Rural Hospital Performance Index*, allowing hospitals to see how they rank on various metrics. While that's an external benchmarking tool, it provides data that can be plugged into internal dashboards. On the technology side, **Microsoft has published Power BI dashboard examples for healthcare** that are free to adapt – for example, a Power BI template might include visuals for readmissions, occupancy, etc., where you just connect your data. The same goes for Tableau: they have a public gallery of healthcare dashboards. A small hospital can accelerate development by taking such a template and customizing the data source. *ClearPoint Strategy*, as noted earlier, shared a list of 30 healthcare KPIs and even provides **dashboard examples**; these can serve as a visual guide for how to layout information for quick understanding (Top 30 Healthcare KPIs & Metrics to Track for Success) (Top 30 Healthcare KPIs & Metrics to Track for Success). The advantage of templates is they embed industry best practices (like which graphs to use for trends vs. targets) so you don't have to design from scratch.

- **Collaborative Data Networks:** Some small and rural hospitals have joined forces in data collaboratives to share analytic capabilities. For example, a group of rural hospitals in one state might jointly invest in a data analyst or a cloud BI tool, which then sets up dashboards for all participants. Each hospital gets their own dashboard, but at a fraction of the cost and effort if they had done it alone. One case is the **Illinois Rural Community Care Organization (IRCCO)** which is an ACO of rural hospitals and clinics – they built a combined dashboard to track quality metrics across members, and individual hospitals could use that for their internal improvements. Another example: a hospital might piggyback on a larger health system's analytics platform through an affiliation. If your hospital is able to partner with a larger system (like being a clinical affiliate or part of a management network), ask if they have a **"Community Connect"** analytics offering. Some large systems extend their Epic EHR and analytics to smaller affiliates – for instance, they might host a dashboard for you showing your metrics benchmarked against their system averages. This can be a win-win; the small hospital gets sophisticated analytics and the big system gets improvement in the referral network.

- **Outsourced Integrated Reporting Services:** As mentioned in challenges, using a third-party service can be a game-changer. Tegria (a healthcare consulting firm) noted that *integrated reporting services* can relieve rural hospitals of the reporting burden and ensure accurate, timely dashboards without overburdening internal teams (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US) (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US). In practical terms, this could mean the hospital sends raw data (or grants access) to the service, and the service produces an online dashboard and regular reports for the hospital. The hospital of course pays for this service, but it might be cheaper than hiring full-time analysts. It's worth researching if there are state-level initiatives or academic partnerships that offer something similar. Some universities partner with rural hospitals to let graduate students or faculty help with data analysis projects (which can include building a dashboard), at low or no cost as part of research or community service. The result can be a high-quality dashboard that the hospital staff can then maintain.

- **Real-World Quality Improvement via Dashboards:** To inspire hospital teams, it helps to share success stories of how dashboards drive improvement. For instance, Piedmont Healthcare (while a larger system) used data analytics dashboards to target pneumonia care and managed to *reduce pneumonia mortality by over 50%* with interventions informed by the data (5 Essential Hospital Performance Metrics in 2025) (5 Essential Hospital Performance Metrics in 2025). This kind of result shows that tracking the right metrics and responding can save lives and money. In a small hospital context, consider a scenario: an internal dashboard shows an upward trend in fall incidents on the inpatient unit. By noticing this early, the hospital's quality team investigates and implements a new fall prevention protocol. Next quarter, the dashboard reflects a drop in fall rates. This closes the feedback loop and validates the dashboard's usefulness. Many hospitals have similar stories (e.g., reducing readmissions by focusing on a discharge follow-up call metric, or improving ED throughput by monitoring turnaround times). Sharing these narratives with your staff can build enthusiasm for the dashboard initiative. It's not just about data; it's about improvement. **When people see that "what gets measured gets managed" in action, they become more engaged** (Link).

- **Simplified Visuals for Small Audiences:** Small hospitals often don't need overly complex visuals; sometimes a simple **stoplight (red/yellow/green) indicator** dashboard works well for leadership. For example, a community hospital in the Commonwealth Fund case studies used a **stoplight-colored display** on their dashboard to quickly show which metrics were on target and which needed attention ([PDF] A Case Study from St. Joseph's Hospital Health System - CMS). Green might mean at or above goal, yellow within 5% of goal, red below goal. This simple approach can be implemented in Excel or any BI tool and is very intuitive. It allows busy executives or board members to grasp performance in seconds and focus discussion on the "reds". Many small hospitals present a one-page "dashboard report" to their board each month in this style. If you design your dashboard software output carefully, you can even print it or PDF it for meetings, which caters to those who prefer hard copies. Tools like Power BI and Tableau can generate nice summary pages, but even a manually curated slide can serve as the visual dashboard if updated with the latest data from your system. The key is consistency: pick a format and stick with it, so everyone knows how to read it.

- **Focus on Actionable Metrics:** Another lesson from the field is to ensure the dashboard prompts action, not just observation. For every KPI displayed, ask *"what will we do if this is too high or too low?"*. Some hospitals incorporate **alert thresholds**. For example, if monthly readmissions exceed a certain number, the dashboard could flag it and automatically email a notice to the quality director. While a small hospital may not have sophisticated automation, even a manual process can exist: the quality committee reviews the dashboard monthly and has a checklist of actions for any metric off target (e.g., review all readmit cases, do a staffing assessment if turnover spikes, etc.). This systematic response approach was seen at Southdale, where any department underperforming on productivity had to report and meet with leadership (Fairview Southdale Hospital: Efficiency Through Quality and Innovation). That level of accountability might be a bit heavy, but the concept can be scaled appropriately. The dashboard thus becomes part of the management process, not just a static report.

In summary, small hospitals should not be intimidated by the idea of building an internal performance dashboard. **Numerous resources and examples are available** to guide the way, from template dashboards and peer collaboration to success stories from similar institutions. The **impact of having a live window into your hospital's performance is well worth the effort**. Dashboards help small hospitals identify issues early, rally staff around common goals, and celebrate improvements with data to back them up. In today's environment, where every decision needs to be smart and every dollar well-spent, a performance dashboard is becoming an indispensable tool for even the smallest hospitals. As one healthcare leader aptly put it, *"To make good decisions with limited resources, hospitals need tools that consolidate data in meaningful ways"* (Using the Dashboard Technology Properly) – and an internal performance dashboard does exactly that, empowering hospital administrators to lead with insight and confidence.

Conclusion

Creating an internal hospital performance dashboard in a small local hospital setting is a challenging but achievable project that can yield significant benefits. By understanding the importance of dashboards, carefully selecting and defining key KPIs, and navigating technical and resource constraints with clever solutions, hospital administrators can implement a dashboard that becomes the **nerve center of decision-making**. It will align the team on what success looks like, provide early warnings for problems, and document improvements over time. In a small hospital, every patient, every staff member, and every dollar counts – and a well-crafted dashboard ensures none of these falls through the cracks of oversight. Embracing this data-driven approach will help even the most modest hospital continuously improve the care of its community and thrive in a rapidly evolving healthcare landscape.

Sources:

1. Kuznetsova, M. et al. (2021). *Dashboards in health care: facilitating decision-making. Journal of the American Medical Informatics Association*, 28(12), 2612-2623. (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient

setting - PMC) (An analysis of the structure and content of dashboards used to monitor patient safety in the inpatient setting - PMC)

2. Baskett, L. et al. (2008). *Using the Dashboard Technology Properly. Health Progress, Catholic Health Association.* (Using the Dashboard Technology Properly)
3. Definitive Healthcare. (2024). *Top 10 hospital performance metrics you need to know.* (Top Hospital Performance Metrics You Need to Know) (Top Hospital Performance Metrics You Need to Know) (Top Hospital Performance Metrics You Need to Know)
4. Aidoc. (2025). *5 Essential Hospital Performance Metrics in 2025.* (5 Essential Hospital Performance Metrics in 2025) (5 Essential Hospital Performance Metrics in 2025)
5. CHAUSA. (2008). *Using the Dashboard Technology Properly* – on data fragmentation and need for dashboards (Using the Dashboard Technology Properly) (Using the Dashboard Technology Properly).
6. National Rural Health Resource Center. (2021). *Small Rural Hospital Blueprint for Performance Excellence.* (Link) (Link)
7. Tegria. (2023). *Why Integrated Reporting is a Game-Changer for Small Hospitals.* (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US) (Why Integrated Reporting Is a Game-Changer for Small Hospitals and Rural Providers - Tegria US)
8. BMC Medical Informatics. (2022). *Requirements and challenges of hospital dashboards: a systematic review.* (Requirements and challenges of hospital dashboards: a systematic literature review - BMC Medical Informatics and Decision Making - Full Text) (Requirements and challenges of hospital dashboards: a systematic literature review - BMC Medical Informatics and Decision Making - Full Text)
9. ClearPoint Strategy. (2023). *30 Healthcare KPIs & Metrics To Start Tracking Today.* (Top 30 Healthcare KPIs & Metrics to Track for Success) (Top 30 Healthcare KPIs & Metrics to Track for Success)
10. Commonwealth Fund. (2011). *Case Study: Fairview Southdale Hospital — Efficiency Through Quality.* (Fairview Southdale Hospital: Efficiency Through Quality and Innovation) (Fairview Southdale Hospital: Efficiency Through Quality and Innovation)
11. Statista. (2023). *Average hospital staff turnover rate in the U.S.* (Hospital staff turnover rate U.S. 2023 - Statista)
12. Statista. (2022). *Average wait time in ED to see a physician (US).* (Average wait time in ED to see a physician in the U.S. 2017-2022)
13. AHA News. (2018). *CDC report: decline in hospital infections.* (CDC program reports decline in hospital infections - AHA News)

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