Use Data to Predict ED Staffing Needs

Create staffing efficiency with data, role clarification and flexibility.

To help hospitals uncover trends in data, CHA's PROSPECT program captures a vast library of operational metrics. To see how Children's Hospital of Philadelphia (CHOP) performed, CHA analysts compared four staffing criteria from PROSPECT to identify high-performing pediatric EDs, and CHOP emerged as one of the top four hospitals.
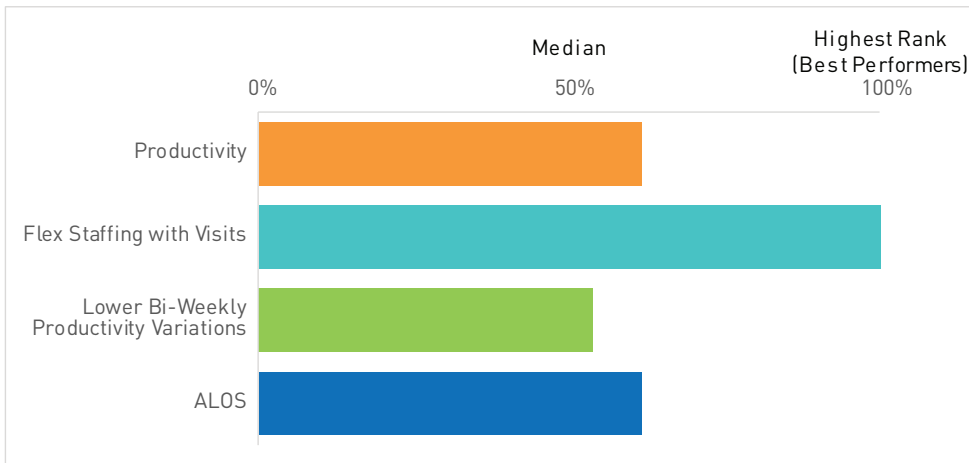
At CHOP, ED managers use data to uncover trends in care, predict when to expect variation in volume and determine how to staff for volume change. The team can see how patient volume may rise and fall months at a time or on a seasonal basis. Volume on each day of the week can have a pattern too.

Successful Staffing Strategies

CHOP begins the staffing planning process by establishing a budget that matches projected volumes. The planners consider what is needed for the coming year based on data that reveals three variable seasons and the days of the week that influence volumes.

"Managers pay close attention to nursing productivity so they can schedule the right type of care based on patients' needs," says Jackie Noll, RN, senior director of Emergency Nursing at CHOP. "Deciding on staffing levels is a collaborative process that includes nursing, medicine and finance."

Using Data to Get Results

The hospital celebrated a record high volume in fiscal year 2019 with over 100,000 visits. Even with higher volume, full-time equivalents came in under budget.

PROSPECT helped CHOP's leaders find trends to support the need for variances in staffing throughout the year. Staff and providers receive a data report to stay up to date on census

ED Structure

Staff cover a range of 88 to 120 beds based on the season with an additional three rooms reserved for resuscitation. The ED at CHOP is structured for the eight focused teams. Here's how the teams are assigned.

TEAMS 1 AND 2

32 beds
Available 24 hours a day

TEAMS 3 AND 4

27 beds
Open 16 hours
During low season, team 4 is used for fast tracking low acuity patients.

TEAM 5

14 beds,
including four safe rooms
Observation and extended care

TEAM 6

Up to 24 beds,
borrowing space from the cardiology clinic
Activated during moderate to high census season

TEAM 7

Six rooms
Provider supports fast care or starts care

TEAM 8

Four beds
Behavioral health patients

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trends. If events, such as the flu, produce a volume spike, leaders develop strategies to prepare to treat more patients.

> "We staff to the volume, which really reflects the true measure of value as far as cost and trying to make things as productive as possible," says Stewart. "The ED fiscal year 19 volume was an all-time record high. Our worked hour per unit of service was favorable by 3.7% over the prior year."

As part of a quality improvement (QI) project exploring how to better match physician schedules with ED schedules, CHOP added Kronos data to its analysis process to manage shift structure and staff to volume. The hospital offers seven different 12-hour shifts and eight-hour shifts

The staffing model is flexible to respond to increases or decreases in volumes daily. Charge nurses huddle with the physician leaders to make decisions. "It's a true partnership," says Jane Lavelle, M.D., associate director of the Emergency Department. "To add a physician to the mix without adding a nurse partner doesn't help."

Teams open based on volume, so during the summer low census period, staff can volunteer to fill needs in other areas. Nurses select areas where they can gain new skills and experience. "We ensure nurses are practicing at the highest scope," says Lavelle. "We support a culture of lifelong learning, and it's important nurses embrace the opportunity. I rely on their knowledge because every day they direct me to the patient I need to see next."

Continue Progress in Behavioral Health Care and Discharge

The closure of a local pediatric crisis center created additional need for urgent mental health care at CHOP. Beds or areas for treatment in CHOPS's ED are limited and don't support the long-term stay usually necessary for these patients.

To address the challenge of more children seeking mental health care, CHOP assigned social workers and the psychiatry team to manage length of stay (LOS) in the ED. The hospital also added electronic tools to reduce the duplication of documentation. While the volume doubled, the teams reduced LOS.

The QI team addressed the need for efficiency in ED discharge time with a QI project to streamline the process for lower acuity cases. The strategy encourages ED physicians and advance practice providers treat and discharge Emergency Severity Index (ESI) 4 and 5 patients more quickly, which creates more room for the higher acuity ESI 1 and 2 patients.

"The collaborative effort between the physician group and the nursing group is so strong," says Debra Potts, RN, nurse manager, ED. "That's what really makes the operation of our ED a grand slam."

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Adapting to Census

CHOP maximizes efficiency by clarifying roles and giving staff flexibility. These are a few tools CHOP uses to meet ED patient needs and monitor population change.

CLARIFY ROLES

The hospital merged two ED tech roles into one ED LPN to eliminate confusion about what skills they could perform.

ROLE VARIATION

Charge nurses, team leaders and patient flow coordinators have additional roles, which vary based on time of day and season.

SHARE FINANCIAL INFORMATION

Knowledge about unit productivity and staffing helps everyone be on the same page to deliver financial savings and ensure the hospital can offer competitive pay.

STAFFING PIPELINE

The ED team builds a staffing pipeline for stability. Experience showed a team not fully hired can produce more turnover because it's hard for those delivering pediatric care to maintain resilience over time.