Case Study: The Rostering Dilemma at Meridian Health Group

By Akhil Bhaskar and Keith B. Carter with Emeritus for the Genpact Aspire Program 2025

Synopsis

Meridian Health Group operates five hospitals across the region, serving over 1.2 million patients annually. Each hospital has unique service lines (Emergency, ICU, Pediatrics, Oncology, General Surgery), but all face the same challenge: balancing efficient labor management with strict compliance rules.

By law, each ward must have a minimum number of nurses per shift, and certain specialties (e.g., ICU-certified, pediatric-trained) are mandatory. Failing compliance risks fines and patient safety; overstaffing inflates labor costs in a system already running thin margins.

In the last quarter, Meridian's nurse roster system has drawn fire from both sides: frontline nurses complain of inconsistent shifts and burnout, while finance flags a 14% YoY rise in overtime costs. Meanwhile, regulators fined one hospital $250,000 for repeated non-compliance in ICU staffing.

This case study explores how fragmented rostering systems, lack of real-time visibility, and manual scheduling lead to both compliance risk and operational inefficiency.

Meridian Health's Code Blue: A Crisis of Compliance, Cost, and Morale

Dr. Anya Sharma, three months into her role as COO of Meridian Health Group, stared at the quarterly labor report. The numbers seemed to get worse every time she looked at them. A 14% year-over-year surge in overtime costs. Nurse satisfaction scores in a freefall, down 11 points. And the most glaring failure: a $250,000 fine for repeated non-compliance in the ICU at Meridian's Hospital 3. The group, which served over a million patients a year, was bleeding from a thousand paper cuts, and Anya knew the source was the very heart of their operations: scheduling.

Her train of thought was broken by a sharp ring from her direct line. It was the administrator from Hospital 3. His voice was strained. "Anya, we have another problem. A big one. The regulators just flagged us for another ICU staffing breach from Saturday night. They're talking about doubling the fine and a public notice this time."

The chronic illness had just become an acute emergency. The abstract data on her screen now had a focal point: the H3 ICU, a critical ward that was becoming a critical liability.

Anya cleared her schedule. Her first call was to Maria Flores, the ICU Nurse Manager at H3. Anya could hear the exhaustion in her voice. "Dr. Sharma, it's a nightmare," Maria confessed. "We have the Excel sheet, but by noon every day, it's useless. Someone calls in sick, a patient needs one-on-one care, and the whole thing collapses. I spend my evenings on my phone, texting, calling, begging nurses to take extra shifts. We need ICU-certified nurses, but I have no way of knowing who's available at our other hospitals, so we call an agency. It costs a fortune, and the new faces don't know our protocols."

Her next meeting was with David Chen, the CFO. He had a different, colder perspective. "This is a labor cost issue, plain and simple," he said, pointing to a chart showing agency nurse expenditures. "H3 is our biggest problem. Their managers are too reliant on overtime and premium agency staff. We need to enforce discipline. I'm proposing an immediate cap on overtime hours and a freeze on all non-emergency agency hiring. We'll force them to manage their budgets."

Anya left the meeting with a growing sense of dread. David saw a nail, and his only tool was a hammer. Maria was living the consequences of a system that forced her to choose between burning out her staff and failing her patients. Both were right, but both were wrong because they were looking at different parts of the same broken process. The root cause wasn't poor management or excessive spending; it was a fundamental lack of visibility and intelligence. Each of the five hospitals was an island, running on its own spreadsheet, blind to the resources and needs of the others.

With the board meeting looming in 48 hours, Anya knew she had to present a decisive path forward. David’s cost-cutting proposal was simple, easy to communicate, and would likely be well-received by a board fixated on the bottom line. But Anya knew it was a Band-Aid on a hemorrhaging wound. It would increase pressure on nurses like Maria, likely leading to more compliance breaches and resignations, a death spiral of cost and risk.

Her alternative was far more radical: a major investment in an AI-driven "Workforce Optimizer". A system that could forecast demand, see the entire group's nurse pool in real-time, and recommend optimal staffing solutions that balanced compliance, cost, and even nurse fatigue. It was the right answer, the only sustainable one. But it meant asking for millions of dollars in capital expenditure when the board was expecting cuts. It was a complex, long-term vision in a room that demanded immediate results.

As she sat in her office, the two paths diverged before her. One was easy, popular, and wrong. The other was hard, expensive, and right. Her recommendation to the board wouldn't just decide the fate of a line item on a budget; it would define the future of patient care and staff well-being at Meridian Health.

How should Dr. Sharma frame her recommendation to the board?

The Challenge

On February 10, 2025, the COO reviewed the group's latest labor metrics:

- Average roster fill rate: 82% (target ≥95%).
- Overtime costs: +14% YoY.
- Compliance breaches: 7 incidents across 3 hospitals (all ICU-related).
- Nurse satisfaction (internal survey): down 11 points vs. prior year.

Behind the numbers:

- Fragmented Scheduling: Each hospital uses separate Excel-based tools with no group-wide visibility.
- Specialty Blind Spots: Rostering doesn't flag when specialist nurses (e.g., oncology-certified) are missing from critical shifts.
- Manual Workarounds: Managers spend hours swapping shifts by phone/text, with little audit trail.
- Financial Impact: Overreliance on agency nurses at premium rates.

The COO's mandate: deliver a plan for a group-wide intelligent rostering system that ensures compliance, optimizes costs, and improves nurse work-life balance.

Data Appendices

Table 1 — Shift Rosters

- Captures actual staffing vs. required staffing per shift.
- Highlights compliance gaps and overtime reliance.

Table 2 — Labor Costs

- Shows how rostering impacts cost and utilization at hospital level.

Table 3 — Nurse Pool

- Tracks available nurses, specialties, and current workload.

Instructions for Case Study Analysis: The Meridian Health Rostering Dilemma

Objective

To analyze Meridian Health's rostering and labor management challenges and propose a technology-driven solution that ensures compliance, optimizes costs, and improves nurse satisfaction across the hospital group.

Step 1: Deconstruct the Case Narrative

- **Identify Key Actors:** COO, hospital administrators, nurse managers, frontline nurses, finance, regulators. What does each group care about (compliance, cost, safety, work-life balance)?
- **Map the Process Flow:** How are rosters created today? Where are the breakdowns — missing specialties, overuse of overtime, manual last-minute swaps?
- **Define the Core Failure:** In one sentence, pinpoint the root issue. Is it lack of visibility, fragmented tools, or absence of predictive rostering?

Step 2: Synthesize the Data Story

You have three datasets the COO never sees together. Your job: connect them into one clear narrative.

- **Roster Analysis (Table 1):** Which hospitals and wards most frequently fail compliance? How does specialty coverage affect this?

- **Cost Analysis (Table 2):** How do fill rates, overtime, and agency reliance connect to labor cost inflation and compliance incidents?
- **Nurse Pool (Table 3):** Which specialties and hospitals are under the most strain? How is nurse satisfaction tied to overtime and workload?
- **Integration:** Show the link: inefficient rostering → higher costs + compliance failures → lower nurse satisfaction → patient safety + financial risk.

Step 3: Design an Automated Rostering Solution

Consider two tiers of technology:

A) RPA "Roster Assistant"

- Automates basic scheduling: fills shifts, checks headcount, ensures specialty coverage.
- Flags compliance gaps automatically.
- *Benefit:* Cuts manual admin time.
- *Limitation:* Doesn't optimize across hospitals or balance workload/fatigue.

B) AI "Workforce Optimizer"

- Uses demand forecasts + nurse pool data to recommend staffing across hospitals.
- Balances compliance, cost, and staff wellbeing.
- Simulates options: e.g., agency vs. overtime trade-offs.
- Provides actionable recommendations ("Shift 3 ICU coverage: reassign 2 nurses from H2, projected cost $12,000 vs. $18,000 agency").

Step 4: Propose the AI-Enhanced "Compliance & Care Engine"

1. **Workflow:** Describe how a nurse manager's job changes. Instead of spreadsheets and calls, they see a dashboard with real-time compliance flags, costs, and projected burnout risks.
2. **AI Decision Memo (sample):**
    - **Summary:** "ICU at H3 has 3 uncovered night shifts next week. Compliance risk = $100k fine potential."
    - **Constraints:** Specialty coverage unavailable locally; ICU nurse pool satisfaction <60.

- **Options:**
  - Option 1: Reassign 2 ICU nurses from H2. Cost $12,000 overtime.
  - Option 2: Hire 3 agency ICU nurses. Cost $18,000, avoids compliance risk.
- **Recommendation:** Option 1, unless H2 emergencies spike. Confidence 92%.

3. **Quantifiable Benefits:**
   - Reduce compliance incidents by X%.
   - Cut agency hours by Y%, overtime by Z%.
   - Improve nurse satisfaction scores (measured in Table 2 & 3).

Rubric for Evaluation (20 Points Total)

Step 1 — Deconstruct the Case Narrative (4 pts)

- 1 pt: Mentions actors but shallow understanding.
- 2–3 pts: Maps process, identifies gaps.
- 4 pts: Concise, root-cause statement linking people, process, and compliance.

Step 2 — Synthesize the Data Story (6 pts)

- 1–2 pts: Looks at tables in isolation.
- 3–4 pts: References all three tables, shows some connections.
- 5 pts: Builds cause-effect chain (compliance gaps → cost → satisfaction).
- 6 pts: Integrates data into a coherent, quantified story with hospital comparisons (e.g., H3 as outlier).

Step 3 — Design Automated Solution (5 pts)

- 1–2 pts: Mentions RPA/AI vaguely.
- 3 pts: Provides concrete steps for either RPA or AI.
- 4 pts: Differentiates clearly between RPA vs. AI roles.
- 5 pts: Proposes realistic, balanced design considering compliance, costs, and wellbeing.

Step 4 — Propose the “Compliance & Care Engine” (5 pts)

- 1–2 pts: Suggests dashboard idea, little detail.
- 3 pts: Provides workflow or sample memo with benefits.
- 4 pts: Links solution to measurable metrics (compliance fines avoided, cost saved).
- 5 pts: Full vision: workflow + AI memo + quantified ROI, grounded in dataset.

Scoring Sheet (for evaluators)

Step	Criteria	1 Point	2–3 Points	4–5 Points	Score
Step 1: Narrative (max 4)	Actors, flow, root cause	Actors listed only	Flow mapped, some gaps identified	Concise root cause linking actors, process, compliance	/4
Step 2: Data Story (max 6)	Integration of tables	One table only	References all, partial connections	Full integration, quantified insights, highlights outliers (e.g., H3 ICU)	/6
Step 3: Solution(max 5)	RPA vs AI design	Vague mention	Concrete steps, partial distinction	Clear differentiation, realistic design	/5
Step 4: Proposal(max 5)	Workflow, AI memo, benefits	Generic idea	Workflow or memo with some benefits	Full proposal: workflow + memo + quantified ROI	/5

Case FAQ

The Healthcare Context: Mandated Ratios and Acuity

- **Nurse-to-Patient Ratios:** The "minimum number of nurses" is a legal requirement, not just a guideline. These are mandated nurse-to-patient ratios that change based on the severity of patient illness (acuity). For example, a hospital might be legally required to have **one ICU nurse for every two**

patients (1:2), but only **one nurse for every five patients (1:5)** in a less critical general surgery ward. A compliance breach means failing to meet these legally required ratios.

- **Specialty Certifications are Non-Negotiable:** A "specialty" is not just a preference; it's a formal qualification. An ICU-certified nurse has undergone extensive additional training to manage life-support systems and critical care pharmacology. A nurse without this certification cannot legally or safely be assigned to an ICU shift, even if they are available. This is the crux of the "specialty blind spots" problem.

2. Operational Realities of Rostering

- **The Daily Scheduling Puzzle:** Nurse manager face significant complexity. They are trying to solve a multi-variable problem using a simple spreadsheet:
  - **Fixed Constraints:** Legal nurse-to-patient ratios, mandatory specialty coverage.
  - **Variable Constraints:** Union rules (e.g., max consecutive shifts), nurse availability (sick leave, vacation), balancing shift equity (fairly distributing night/weekend shifts), and last-minute patient census changes.
  - This makes the manual process of swapping shifts by phone and text a near-impossible task to do optimally.
- **The True Cost of Nurse Burnout:** There are consequences of "inconsistent shifts and burnout". High burnout leads to higher staff turnover. The cost to replace a single registered nurse can be tens of thousands of dollars in recruitment, hiring, and training costs, which severely impacts a hospital's "thin margins". Poor satisfaction also correlates with an increase in medical errors, creating further patient safety risks.

3. The Financial and Systems Context

- **"Agency" vs. "Overtime":** Two primary ways of filling roster gaps.
  - **Overtime:** Paying a current staff nurse a premium rate (e.g., 1.5x their salary) to work an extra shift. This directly contributes to burnout and lower satisfaction.
  - **Agency Nurse:** Hiring a temporary nurse from an external staffing agency. This is a flexible but highly expensive option, as the agency takes a large fee. Agency nurses can cost

1.5x to 2x the hourly rate of a full-time employee, explaining the "premium rates" and cost inflation.

- **Why Excel Persists:** Modern hospital groups still use "fragmented Excel-based tools". Hospital groups like Meridian often grow by acquiring other hospitals, each with its own incompatible legacy HR and payroll system. In the absence of a costly, group-wide integrated system, individual department managers create their own Excel-based workarounds out of necessity. This is a classic example of technical debt leading to operational failure.

Frequently Asked Questions (FAQ) for Students

Q1: What is a "roster fill rate," and why is 82% a major problem?

- The fill rate is the percentage of required nursing shifts that are properly staffed in the initial schedule. An 82% rate means that nearly one in five shifts (18%) is left vacant by the primary rostering process. These gaps must then be filled with expensive last-minute solutions like overtime or agency nurses, which inflates costs. If they can't be filled, it leads directly to non-compliance, regulatory fines, and unsafe conditions for patients.

Q2: The case mentions a $250,000 fine for one hospital. Is that a one-time cost?

- No, regulatory fines for staffing violations are often recurring and can escalate. The $250,000 fine was for "repeated non-compliance" in the ICU. This indicates a systemic problem, not a single mistake. Continued failures could lead to even larger fines, loss of accreditation, or even forced suspension of services in that ward, which would be financially catastrophic.

Q3: Why can't Meridian just hire more nurses to solve the problem?

- Hiring more nurses is a slow and expensive process, and it doesn't solve the core issue of inefficient allocation. The problem isn't just a lack of nurses, but a lack of *visibility* to deploy the *right specialty nurses* to the *right hospital* at the *right time*. The current fragmented system means one hospital's ICU

could be critically understaffed while another hospital 10 miles away has ICU nurses in a less critical ward—but the system has no way of seeing this to propose a smart, inter-hospital transfer.