Acuity Based Staffing: Balancing Cost, Satisfaction, Quality and Outcomes

Nancy S. Barton, MSN, RN
Northeast Georgia Medical Center
Northeast Georgia Medical Center

- 657 Inpatient beds
- Two campuses
- 13 county service area
- 750,000+ population
- 120,000 ER visits
- 2800 Deliveries
- Level II trauma center
- #1 Heart facility in Ga.
- #1 hospital in GA and #2 hospital in the nation by CareChex
Driving forces

- Acuity adjusted budgeting and staffing
- Use of current systems
- Need for overall education of leadership staff—significant changes in 2 years
- Use of incentives and contract labor
- Need for systems approach to staffing
- New campus with need for staffing oversight
- Ever changing IT world
- Financial Freedom via accountability
Facts about our processes

- Began Acuity based budgeting and staffing in FY 08
- Met weekly with the TEAM for the first 3 months and then went to monthly
- Interfaced our scheduler, Open shift system, Acuity and documentation systems to the highest level possible
- Finance is our largest supporter of our processes
- Position control runs on what the Acuity system recommends, not what we have budgeted
- Large Regional Resource pool and “sitter” pool
- Central staffing office to keep the 40,000 foot view related to use of resources looking a both campuses.
The TEAM Approach

T  Trust

E  Energize and Ease

A  Accurate and Accountable

M  Measurable and Meaningful
Staffing is a Balance

Productivity

Cost

Satisfaction

Quality
The five rights of staffing

- The right number of staff
- The right skills
- The right location
- The right time—workload related
- The right assignment
Peeling the layers of an Onion

It is not about volume and HPPD

It is about drilling down to the layers of staffing
Example of Premier Data on a medical unit

Staffing to Volume

The two elements on the graph should move up and down together, which reflects staffing is being flexed to volume.

Volume and Staffing Correlation: 15 Periods (10/10/2011 - 05/06/2012)

Correlation 0.95 Indicates staffing was flexed as changes in volume occurred.
Average Daily Bed turnover %

- Ortho/Neuro: 40.8%
- Surg/Bari: 37.0%
- PCCU: 36.9%
- Surgical: 36.0%
- PCU: 33.2%
- Med/Surg 2: 32.8%
- CVICU: 32.7%
- ICU: 30.2%
- Medical: 29.3%
- Oncology: 26.2%
- Med/Surg 1: 26.1%
- HFU: 19.6%
Patient Activity by Hour of Day

Average Daily Volume

Hour of Day

Total In  Total Out
### Workload Vs. Actual staffing--Total Inpatient

<table>
<thead>
<tr>
<th>Days of week</th>
<th>WI Index ranking</th>
<th>Actual Staffing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>5</td>
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<tr>
<td>Tuesday</td>
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<td>Sunday</td>
<td>7</td>
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</tbody>
</table>

### Med/surg  WI vs Actual Staffing Med/surg units

- **Workload Index**
- **Actual Staffing**
## Typical Staffing Plan -- NGMC

### Unit Information
- **Unit:** 364 S3E
- **Target Acuity:** 1.50
- **Direct Care Positions (Target):** 20.87
- **Operational Beds:** 46
- **Avg. Daily WI:** 38.9
- **Direct Care Positions (Plan):** 20.87
- **Budgeted ADC:** 25.9
- **Target Hours per WI:** 6.446
- **Direct Patient Care % RN:** 72%

### Staffing Plan

#### Weekday

<table>
<thead>
<tr>
<th>Time</th>
<th>Positions</th>
</tr>
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<tbody>
<tr>
<td>7A-7P</td>
<td>7.5</td>
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<tr>
<td>7P-7A</td>
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<td>11P-7A</td>
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#### Weekend

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
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<td>11P-7A</td>
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### Indirect Patient Care

<table>
<thead>
<tr>
<th>Role</th>
<th>Positions</th>
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<tbody>
<tr>
<td>Manager *</td>
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<tr>
<td>Nurse Clinician *</td>
<td>0.7</td>
</tr>
<tr>
<td>Unit Educator *</td>
<td>0.7</td>
</tr>
<tr>
<td>Unit Secretary</td>
<td>2.0</td>
</tr>
<tr>
<td>Tech/Aide *</td>
<td>0.7</td>
</tr>
<tr>
<td>Student *</td>
<td>4.0</td>
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<tr>
<td>Other</td>
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### Subtotal

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<td>FTEs</td>
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### Ratios (Excludes Charge)

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<tr>
<th>Time</th>
<th>Nurse</th>
<th>UA</th>
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### Notes
1. Tech used as transporter, and reflected in the staffing plan above
2. Do not budget a new department for the additional beds

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Confidential & Proprietary
Staffing to Workload Demand

- **Before**

- **After**

 Scheduled Staff

```
0 5 10 15 20 25 30
7 8 9 10 11 12 1 2 3 4 5 6
Hour of Day
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```
0 5 10 15 20 25 30
7 8 9 10 11 12 1 2 3 4 5 6
Hour of Day
```

```
Scheduled Staff
```

EXAMPLE

EXAMPLE
Example of winter core numbers plan

Unit: 364 S3E       Target Acuity: 1.50       Direct Care Positions (Target): 20.87

Operational Beds: 46       Avg. Daily WI: 38.9       Direct Care Positions (Plan): 20.87

Budgeted ADC: 25.9       Target Hours per WI: 6.446       Direct Patient Care % RN: 72%

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<table>
<thead>
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<th>Ratios (Excludes Charge)</th>
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<tbody>
<tr>
<td>Nurse</td>
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<td>4.0</td>
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</table>

NOTES:
1 Tech used as transporter, and reflected in the staffing plan above for 8 hr/8 hours during weekdays only
2 Do not budget a new department for the additional beds
Nurse to patient ratio by hour of day for Medical unit
3/06/15
Assignment module

Patient assignment 2

Total Workload 7.5

Patient A  Patient B  Patient C  Patient D  Patient E

Acuity  Complexity  WI
New Assignment module

Patient Assignment 2

13.9 hours  2.4 Wkld  13.0 complexity units

Patient A  Patient B  Patient C  Patient D  Patient E

WKLD  Complexity units
RN/LPN Assignments in Time

<table>
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<tr>
<th></th>
<th>Recom Hrs</th>
<th>Caregiver Hrs</th>
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<td>LPN 1</td>
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<td>LPN 2</td>
<td>9.7</td>
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Outcomes measures

- More difficult to correlate any one staffing indicator to outcomes. Staffing and outcomes is more complex than comparing one to one.
- Pressure ulcer – overall the PU rates over the last 6 years have decreased significantly.
- Falls process has changed house wide with a 30—40% reduction.
- All infection rates (CLBSI, CAUTI, and VAP) have reduced significantly over the last 3 years.
- Outcomes study participation has shown a need to focus on staffing to workload recommendations instead of HPPD.
Outcomes module report

Var (% RN) vs. Medication Error
1/1/2013 to 3/31/2013
Transparent IN PT methodology units (U)

Correlation Coefficient = 0.03; Not significant at 0.10 level
FY 15 cumulative Fall rate

- FY 15 cumulative Fall rate values:
  - October: 2.09
  - November: 2.52
  - December: 2.64
  - January: 2.65
  - February: 2.59

- Color codes:
  - YTD Falls rate: Black
  - Threshold: Orange
  - Target: Green
  - Max: Red
Challenges still ahead

- Continued pushing of data to the bedside nurse—nurse staffing committee
- Value based purchasing/shrinking reimbursement
- Bringing up new campus—loss of experienced staff from main campus
- Increases in volumes
- Challenges of recruiting experienced RNs vs. new grads
- Preparation of new grads—length of orientation
- Rising acuity and complexity of patients
- Focus on retention as well as recruitment
- Staying ahead of turnover
- Entirely new computer platform
LOS Adjusted Census compared to Budgeted census
FY 10--FY 15 thru April 15

<table>
<thead>
<tr>
<th>Year</th>
<th>LOS adj census</th>
<th>Bud cen.</th>
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<tbody>
<tr>
<td>FY 10</td>
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<td>298</td>
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<td>FY 11</td>
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<td>FY 14</td>
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<tr>
<td>FY 15 thru April</td>
<td>385.22</td>
<td>344.6</td>
</tr>
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</table>
What does this mean in staff?

This is what at minimum it means on only an inpatient perspective on average:

- 40.62 more patients ADC then budgeted
- 11-12 extra nurses needed/shift
- 54+ additional RN FTEs just to meet the increased ADC above budget
- 5.0 extra Techs needed/shift
- 22.5 additional Tech FTEs above budget
- This on top of staying current with replacement, FMLAs, call outs and increased sitter needs
Other opportunities

- Nurse staffing committee
- HR huddles with Workforce planning—balancing needs on both campuses/right-sizing to workload
- Continual education of finance and HR on needs
- Keeping data accurate—New EMR
- Balancing the cost aspect with the demand
- Challenges of requesting additional positions
- Thinking outside the box for resource utilization
What we have learned
Key components of effective model for NGHS

- Incorporation of data into one system
- Review of data at the 40,000 foot view and at the dept level
- Central staffing approach to resource utilization
- Currency of the data—daily productivity
- Adaptability of the system to our needs—Transparent classification
- Consistency with data across systems
- Large Regional resource pool
Using a balanced approach to Staffing

- Volume and HPPD alone will not give you what you need to balance the quadrants of an effective staffing model
- Focus on workload to adjust staffing
- Utilize as much shift level staffing data and patient specific data as possible
- Review “patient churn” and incorporate into staffing plans
- Track use of incentives, agency, float, overtime—Use the smallest time frame for data as possible
- Look at outcomes by assignments (acuity and complexity)
Using a balanced approach for Staffing

- Transparent classification opportunities to capture workload via exploding indicators
- Engage front line staff in processes
- Be open to staffing differently
- Use 40,000 foot data to set core staffing numbers for your resource pool schedule
- Clearly differentiate system performance from resource availability
Conclusions

- Acuity based staffing leads to so much more than daily staffing.

- Taking a system wide approach to staffing can yield significant results in resource utilization.

- Return on investment for systems should be looked at in the broad context of cost savings: Time, dollars and people.

- The human connection factor in a partnership is very powerful and should not be ignored.

- TEAM partnership can yield big results in financial, outcomes, and people satisfaction.
Conclusions

- The ability to have real time staffing data to identify opportunities for improvement and to measure results continues to be invaluable in our overall never ending journey to calm waters.

- It takes a concerted effort from everyone to be successful
Crew all working in sync
Questions and Answers
Contact information

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