IP Resources: Too few? Too many? A discussion of strategies to calculate appropriate IP personnel resources

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Background – A little about me

- Washington University in St. Louis
  - BA Psychology, Biology Minor
  - WUSM Research Tech – Infectious Diseases
- Memorial Sloan-Kettering Cancer Center
  - Infection Control Surveillance Specialist
- Certification Board of Infection Control and Epidemiology
  - CIC®
- City University New York – Hunter College
  - MPH Community Health Education
- New York State Department of Health
  - Hospital Acquired Infection Reporting Program Regional Representative
- BJC HealthCare
  - Manager, Infection Prevention and Quality Patient Care
- Washington University in St. Louis
  - Executive MBA Candidate 2017

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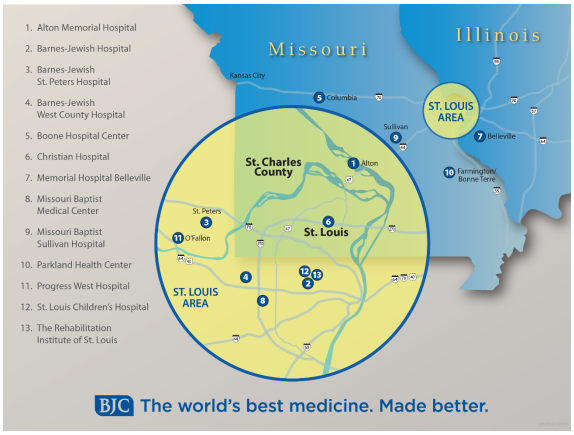
Background – BJC HealthCare

- 12 acute care facilities
  - Critical Access
  - Rural
  - Community
  - Urban
  - Specialty
  - Academic
- Inpatient Rehab
- WUSM
- Goldfarb Nursing



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Objectives

- Upon completion of this teleclass, participants will be able to:
  - Describe historical recommendations and models for IP staffing
  - Describe the strengths and weaknesses of these historical recommendations
  - Identify at least one alternative strategy for calculating ideal IP resources
- Note: Opinions expressed in this presentation are my own, and do not represent the opinion of, or endorsement by, BJC HealthCare

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The real question…

- Do you have everything you need to succeed today?
  - Right people
  - Right equipment
  - Right support
  - Evaluate regularly

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Background – IP Personnel Resources

- Study on the efficacy of nosocomial infection control (SENIC Project)
  - Mid-1980s: 1 IP professional for every 250 acute care beds
- U.S. IP Staffing recommendations (Delphi Project)
  - Published 2002: 0.8 to 1.0 IP per 100 occupied acute care beds (1 per 100 to 125 beds)
- Canada IP Staffing models (Infection Prevention and Control Alliance)
  - Published 2004: 3 IP per 500 acute care beds (1 per 167 beds); 1 IP per 150 to 250 LTC beds
- Limitations
  - Panel opinions
  - Outdated

Background – IP Personnel Resources

- The scope of IP programs have expanded since these recommendations were made
- Center for Disease Control and Prevention (CDC)
  - NNIS Participants: 1 IP for 1st 100 beds, then 1 for each additional 250 beds
  - NHSN Participants: Trained IP required to be in charge of program
- Little is known about how IP programs are staffed across the country, but they appear to differ greatly
  - Average IP resource to acute care beds ranges from 1:151 to 1:83
    - Studies limited by small samples sizes
    - Likely not representative of the >4,000 acute care hospitals in the U.S.
  - How does IP staffing influence patient outcomes?

For consideration…

- How much is enough?
  - How many IPs do I need for a comprehensive and effective infection prevention and control program?
    - Must define "comprehensive" and "effective"
    - Deliverables of the program
    - Prospective prevention or retrospective insight

How we're using our time…

- Surveillance
- Prevention activities
- Education
- Committees
- Professional development
- Face time
- Emerging diseases/issues

Surveillance

- The data on how we manage data varies
  - "Generally low" vs. over 5 hours per day
  - Manual vs. electronic-assisted vs. fully automated vs. outsourced
  - Required only vs. risk assessment
- Quantify locally how much time
  - Denominator collection
  - Numerator investigation
  - Data entry
  - Data validation

Prevention activities

- Development
- Implementation
- Measurement
- Detail current state
- Gap analysis
- Identify ideal state

Education

- New employee
- Annual competencies
- Collaborative efforts

Committees

- Meetings, meetings, and more meetings
- Be as specific as possible
  - Include preparation time required, not just the meeting time

Professional development

- What's that?
- How do you maintain your knowledge and skills?

Face time

- Don't forget the importance of being present
  - Inpatient floors
  - ICU
  - OR
  - ER
  - Clinics
  - CSPD
  - So many others…
- Current state vs. Ideal state

Emerging diseases/issues

- Ebola anyone?
- Zika?

What does it all add up to?

- IP Risk Assessment and Plan!!
  - Serves as the basis for developing goals and measurable outcomes
    - Prioritize risks
    - Assess resources
  - Use local data and facts
    - Population served, services provided, regulatory requirements
    - Program purpose, goals, objectives
      - SMART
  - Vision statement: what your organization believes in the ideal
    - IP Mission Statement: Describe how your program will help achieve the vision
      - Concise, outcome-oriented, inclusive

What does it all add up to?

- IP Risk Assessment and Plan!!
  - Make the case
    - Cost savings
    - Cost avoidance
    - Reputation
    - Data-driven evaluations
  - Recommend changes
    - Be smart
    - Be brief
    - Be gone

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Bottom line

- Ongoing investment in infection prevention programs is a cost-effective strategy
  - Approach to making the case for resources is much less important than the strength of the facts presented

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One approach to consider

- Developed by NYSDOH

Table 1: Acute Care (AC) Bed Equivalents[5] Used to Calculate IP Staffing Ratios	
Variable	AC Bed Equivalent
Acute care bed	1
Intensive care bed	2
Long term care bed	½
Dialysis facility	50
Ambulatory surgery center	50
Outpatient clinic	10
Private physician office	5

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One approach to consider

Table 2: Demographics Example for Facility C	
Variable	Number
Acute care bed	1315
Intensive care bed	173
Long term care bed	120
Dialysis facility	2
Ambulatory surgery center	1
Outpatient clinic	107
Private physician office	0

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One approach to consider

Aggregate Calculation Using Acute Care Bed Equivalents Example: Facility C			
Variable	**Number**	**Acute Care Bed Equivalent**	**Aggregate Total**
Acute care beds	1315	1	1315
Intensive care beds	173	2	346
Long term care beds	120	½	60
Dialysis facilities	2	50	100
Ambulatory surgery centers	1	50	50
Outpatient clinics	107	10	1070
Private physician offices	0	5	0
Total Acute Care Beds = 1315		Total Aggregate Beds = 2941	

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One approach to consider

- Facility C has 9 IP resources, so…
  - Acute care bed ratio = 1:146
  - Aggregate acute care bed ration = 1:327
- Reminder: recommendations range from 1:100 to 1:167 to 1:250

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One approach to consider

Table 3: Infection Prevention Staffing Results

Facility	IP Resources	Acute Care Beds	IP Staffing Ratio	Adjusted Acute Care Beds	Adjusted IP Staffing Ratio
A	½	206	1:412	237.5	1:475
B	1.5	360	1:240	510	1:340
C	9	1315	1:146	2941	1:327
D	1	127	1:127	211	1:211
E	1	113	1:113	179	1:179
F	2	485	1:243	657	1:329
G	2.5	489	1:196	599	1:240
H	½	35	1:70	93	1:186
I	1	133	1:133	185	1:185
J	1	72	1:72	84	1:84
K	2	264	1:132	588	1:294
Total	22	3599	1:164	6284.5	1:286

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Contact Information

Questions?

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