Abstract 315

A Qualitative Study of Infection Prevention Perceptions, Beliefs, and Practices in the Emergency Department

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INTRODUCTION

- Over 136 million pt visits are made to U.S. emergency departments (ED) annually, of which 16.2 million result in hospital admission [1]
- EDs present unique challenges to infection prevention
- Hand hygiene rates among ED healthcare providers (HCP) range anywhere from 10-90% [2]
- Adherence to universal barrier precautions (protective gowns, gloves & eyeware) during trauma & medical resuscitations range anywhere from 38-89% [2]
- Pts colonized or infected with MDROs commonly utilize the ED, posing a risk for MDRO transmission to ED HCPs & other pts alike
- Hand hygiene & contact precautions are important measures to reduce MDRO transmission & prevent hospital-acquired infections (HAI)
- While barriers to ED infection prevention have been examined in limited survey-based studies, little qualitative data exists to guide development of infection prevention strategies tailored to the unique environment of emergency care, particularly with relation to hand hygiene & contact precaution use

STUDY POPULATION & SETTING

- 54 subjects participated in 11 focus groups from April through July 2015 **(Table 1)**
- Focus groups were conducted in a large urban, academic ED averaging over 90,000 patient visits annually and a small community ED averaging 10,000 patient visits annually.

TABLE 1. Respondent Demographics

	n (%) (n=54)
Employment type	
Attending physician (Attg)	13 (24.1)
Mid-level provider (NP/PA)	1 (1.9)
Resident (Res)	12 (22.2)
Nurse (RN)	11 (20.4)
Patient care technician (PCT)	4 (7.4)
Environmental services (ES)	13 (24.1)
Years of Experience	Mean (y) (range)
Attending physician (Attg)	11.9 (1-35)
Mid-level provider (NP/PA)	10
Resident (Res)	2.6 (1-4)
Nurse (RN)	3.8 (1-14)
Patient care technician (PCT)	6 (1-17)
Environmental services (ES)	5.5 (0.25-21)

METHODS

- Focus groups were stratified by job role
- HCPs (attending physicians, nurse practitioners, physician assistants, emergency medicine residents, nurses, patient care technicians) & environmental services staff employed by Barnes-Jewish Hospital (BJH) ED & Barnes-Jewish West County Hospital ED (both located in St. Louis, Missouri, USA) were recruited to participate in focus groups
- Question development centered around: awareness & perception of MDROs in the ED, barriers to hand hygiene & contact precaution adherence, and solutions to improve ED infection prevention practices
- To minimize bias, a professional moderator unaffiliated w/ either ED led each 45-60 minute focus group
- Participants received a gift card in return for their time & input
- All interactions were tape-recorded & transcribed verbatim
- An inductive open-coding approach was used to identify major themes.
- Focus group transcripts were coded using NVivo (QSR International, v.10) & qualitative thematic analysis was conducted using a grounded theory approach with constant comparison
- Emerging themes were compared by HCP type

RESULTS

- ED HCPs cared for ≥1 pt w/ MDRO per clinical shift; multiple providers noted "several" or 3-4 pts per shift
- 3 primary domains of awareness were identified by ED HCPs: lack of pre-notification about MDRO status, inadequate time to personally review pt records for history of MDRO prior to contact, and inaccuracy of existing MDRO flags in the electronic medical record **(Table 2)**
- 2 primary domains of perception were identified by ED HCPs: a culture that deemphasizes MDRO risk & prioritization of competing issues over MDRO risk **(Table 2)**
  - Many said contact precaution strategies were not realistic due to high pt turnaround & fast pace of ED
- At least 2 new primary domains of barriers were identified by ED HCPs: inadequate access to contact precaution equipment & shared pt spaces. Challenges posed previously as domains of awareness & perception were also identified as barriers (*e.g.*, inaccurate and/or late data on MDRO status, peer pressure, and lack of time, energy, support) **(Table 2)**
  - While physicians did not feel that pts on contact precautions received different care, nurses did
  - Some felt HCPs avoid rooms of pts on contact precautions & do not check on them unless requested
- Potential solutions identified by ED HCPs included: improved MDRO notification, uniform MDRO data across electronic medical records, shared responsibility among HCPs & ancillary staff for identifying & highlighting pt MDRO status, increased access to contact precaution equipment outside pt rooms, reduced nurse-pt ratios, not evaluating or boarding MDRO pts in the hallway or other shared pt spaces, and cohorting similar MDRO pts together
  - HCPs felt more training & enforcement was needed & that a complete mindset change was necessary
- Environmental services (ES) staff, by virtue of their role in cleaning & infection prevention, were considered as a separate group when performing thematic analysis:
  - 2 primary domains of awareness were identified: inconsistent pre-notification & inadequate time to respond to pre-notification
  - 2 primary domains of perception were identified: inaccurate/unrealistic expectation that ES is responsible for cleaning everything in the ED & prioritization of room turn-around time over cleaning
  - 2 primary domains of barriers to proper environmental cleaning were identified: feeling rushed to complete cleaning of rooms & not having enough time to appropriately disinfect surfaces in the ED
  - Potential solutions identified included: improved collaboration between HCPs & ES to expedite the cleaning process (*e.g.*, proper disposal of unwanted biospecimens & medical waste by HCPs, stronger efforts by HCPs to maintain a clean workspace), clearly identifying who is responsible for cleaning certain equipment in the pt space, and stronger/faster-acting cleaning agents

TABLE 2. ED HCP Domains & Responses

Awareness	
Lack of pre-notification	Attg: *I almost have no data w/ regard to their colonization status* Res: *We don't have a lot up front that triggers us on an MDRO pt*
Inadequate time to review pt record	RN: *A lot of times you won't know until… after you've already introduced yourself & met them & already been in their room & you go to look at their history, then you'll find it* PCT: *A lot of times you haven't even looked at their chart so you've already had interaction & contact with the pt*
Inaccurate MDRO flag	RN: *Sometimes the icon's from like 10 yrs ago… & they have had no symptoms… like if you're not having diarrhea & it's been 10 yrs, you don't have C. diff*
Perception	
ED culture	Res: *Going along with the culture, by the time you realize that the individual is supposed to be on contact… well I have been in that room multiple times… probably why it's not enforced & people don't react* RN: *Things like MRSA & VRE, people are like, "well, I already have that anyway"* RN: *Because the workload is so much more taxing, the culture changes. There is a culture associated with the fact that there are less resources*
Competing issues	RN: *It's not terribly feasible to follow all these like precautions. We're not staffed well enough… I feel like people are less likely to check on those people, go into the room and ask them the little stuff*
Barriers	
Inadequate supplies	RN: *If you want us to put gowns on, gowns should be placed in every single room. I am not going to walk 40 ft to go get a gown; even though I care a lot, I'm just not going to do it*
Shared pt spaces	Attg: *It's really difficult to put those pts that we know are VRE or MRSA in a segregated area population in a very busy place* Res: *They are mingling, the people with infectious diseases, immunocompromised, sitting in the chairs, in the same room, touching the same things & I have no idea how often the waiting room is cleaned*

CONCLUSIONS

- Incomplete awareness of pt MDRO status, HCP-specific perceptions de-emphasizing MDRO risk, prioritization of pt clinical priorities over MDRO risk, high pt acuity, and lack of time, resources & support all present challenges to contact precaution adherence in the ED
- Inadequate access to supplies & shared pt spaces (waiting room, hallway, treatment rooms) are physical barriers to contact precaution adherence
- The role of environmental services in preventing MDRO transmission may be an overlooked component of ED infection prevention
- Successful ED-specific infection prevention initiatives are greatly needed & will require a multidisciplinary systems-based approach

REFERENCES

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