

Safe Prevention of Clostridium Difficile Using Infectious Disease Guidelines at Onslow Memorial, an Urban Hospital



Davies, E., MSN-ED, FNP-C., Jolles, D., PhD, CNM, FACNM.,
Lanier, R., MAEd, CNO., Malfiano, J., DNP., Richmond, A., PharmD., Bryan, C., RN., Chambers, R., RN., Powers, G., RN.,
Valadez, D., RN.

Frontier Nursing University, Hyden, KY

Background

Literature

- Unexplained, new onset, ≥ 3 unformed stool, qualifies testing for C.diff¹
- NAAT or multistep testing for diagnosis¹
- Private patient rooms¹
- PPE use- gloves and gown¹
- Hand washing- before and after contact with soap/water or alcohol based product. CDI outbreaks- soap/water¹
- Disposable equipment recommended³
- Antibiotic Stewardship²
- Vancomycin or fidaxomicin over metronidazole for initial episode³
- 15,000-30,000 US deaths annually³
- > \$4.8 billion related to CDI³
- Hospital stay 2.8-5.5 additional days³
- \$3,000-\$15,400 inpatient cost per episode³

Local

- SIR at OMH in 2017 was 1.266 for CDI⁴
- 1/23 (4%) providers treating UTIs according to hospital protocol
- 1/9 (11%) staff/providers followed contact precaution policies at OMH

Efforts to Address Problem

- 4 PDSA cycles testing:
- Antimicrobial Stewardship & best practices chart audit
- Assess patient comprehension of D/C instructions
- Observational tool for contact precautions & handwashing
- Assess employee morale and application of knowledge

- ◆ Choose antibiotics wisely to prevent infection & resistance
- ◆ Patient comprehension is vital to prevention of infection, and a reflection of how well we are doing as providers of health care
- ◆ Contact Precautions- what message are we sending our patient if we do not follow policy
- ◆ Employee morale flows into performance and satisfaction

Aim

- Increase Clostridium Difficile prevention 25% at Onslow Memorial Hospital over 90 days

Planned Improvement

	CORE INTERVENTION
ANTIMICROBIAL STEWARDSHIP	Data transparency audit tool & feedback for utilizing best practice/protocol for treatment of Uls
PATIENT ENGAGEMENT	Post Discharge comprehension audit
CONTACT PRECAUTIONS	Observation survey checklist using environmental tool
TEAM ENGAGEMENT	Questionnaires to measure moral & application of knowledge

PREDICTIONS

- Greatest challenge will be with providers utilizing best practice
- Increase CDI prevention by 25% over 90 days by promoting use of antibiotic stewardship protocol by physicians, correct use of contact precautions by staff, and promoting patient education regarding disease treatment and prevention.

References

(1) Davis, B. M., Yin, J., Blomberg, D., & Fung, I. C. (2016). *Impact of a prevention bundle on clostridium difficile infection rates in a hospital in the southeastern united states*. doi:https://doi.org/frontier.idm.oclc.org/10.1016/j.jaic.2016.05.014

(2) Dubberke, E. R., Carling, P., Carrico, R., Donskey, C. J., Loo, V. G., McDonald, L. C., ... Gerding, D. N. (2014). *Strategies to prevent clostridium difficile infections in acute care hospitals: 2014 update. Infection Control and Hospital Epidemiology, 35 Suppl 2*, S48-S65. Retrieved from https://frontier.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cmedm&AN=25376069&site=ehost-live

(3) McDonald, L. C., Gerding, D. N., Johnson, S., Bakken, J. S., Carroll, K. C., Coffin, S. E., ... Wilcox, M. H. (2018). *Clinical practice guidelines for clostridium difficile infection in adults and children: 2017 update by the infectious diseases society of america (IDSA) and society for healthcare epidemiology of america (SHEA). Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America*, doi:10.1093/cid/cix1085

(4) U.S. Centers for Medicare & Medicaid Services. *Hospital Compare* (2017). Retrieved from https://www.medicare.gov/hospitalcompare/profile.html#wgvrph=1&profTab=3&ID=340042&loc=JACKSONVILLE%2C%20NC&lat=34.7540524&lng=-77.4302414&name=ONSL0W%20MEMORIAL%20HOSPITAL&Distn=3.4

Results

ANTIBIOTIC CHART AUDITING FOR BEST PRACTICE IN TREATMENT OF UTIs

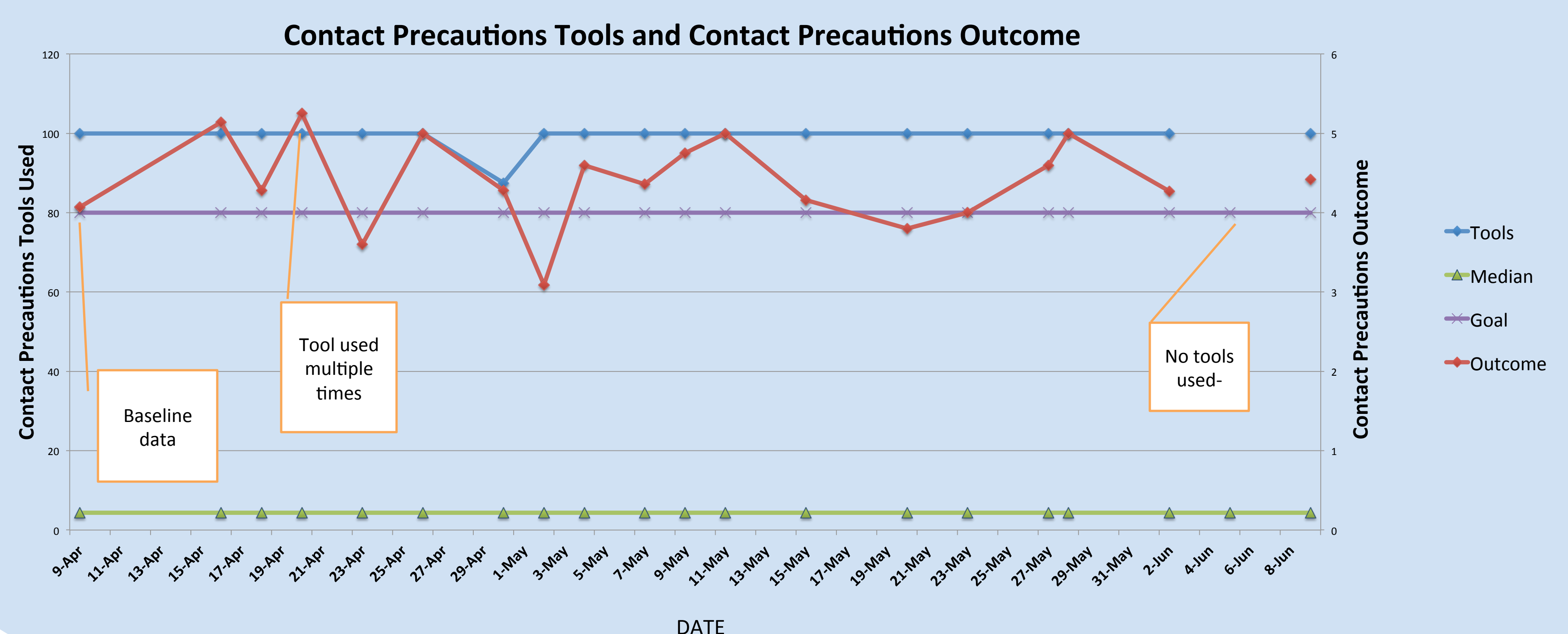
BEST PRACTICE ANTIBIOTIC CHART AUDIT		
	TOTAL	TOTAL %
TOTAL CHARTS REVIEWED	43	
SYMPTOMATIC	40	93 %
UNCOMPLICATED	15	34.8 %
APPROVED MED	33	76.7 %
TIME OUT AT 48 HRS	24	55.8 %
URINE CULTURE ORDERED	38	88.3 %
Consultation with ID- Brody Hospital	4	9.3 %

LEGEND
7 occurrences not documented specifically but indicated in narrative by provider
7 occurrences less than 48 hours for Time Out indicator

POST DISCHARGE PATIENT COMPREHENSION GAPS SUMMARIZED

POST DISCHARGE PATIENT COMPREHENSION	4/16/18-6/2/18	POINTS	TOTAL %
TOTAL TOOLS USED			
What is your primary language? If other than English, were your D/C instructions interpreted? If interpreted, by whom?	14	93%	
Do you have any difficulty with reading or understanding the instructions you have been provided?	13	86.6%	
What will you use to clean your home surroundings with? Why has this been recommended? (C. diff) OR -What precautions will you take to prevent spread of infection? OR - What will you do to prevent worsening of your condition?	11	73%	
Do you understand what C. Difficile is (or your infection or condition) and what can cause this?	10	66%	
Tell me what you have been told about hand cleaning and what to use to wash your hands with? OR- What is the best way to prevent the spread of infection?	13	86.6%	
What is one symptom that the infection (or condition) you have been treated for may be returning? What do you do if this happens?	12	80%	
If patient with dementia, then caregiver was asked. One patient w/ dementia but caregiver was 6/6 One patient w/dementia but caregiver was 4/6			
LEGEND- 1 point for comprehension / 6 questions total			

CONTACT PRECAUTIONS & HANDWASHING TOOL OUTCOME



Measures

	TOC/CORE INTERVENTION	MEASURE	OPERATIONAL DEFINITION	BASELINE %	OUTCOME %
Antimicrobial Stewardship	Data transparency audit tool and feedback for utilizing best practice/protocol for UTI treatment	Process	# of charts audited/ # of patients with UTIs weekly	4%	80.5%
		Outcome	Mean score of best practice		40.4%
Patient	Post Discharge Comprehension Audit	Process	# of completed surveys / # of patients discharged with C. diff	0%	100%
		Outcome	Mean score of comprehension		26%
Environmental Safety	Observation Survey Checklist using Environmental Tool	Process	# of times tool was used / # of encounters	35%	100%
		Outcome	Mean score of environmental safety		44%
Balancing Measures	Actual time collecting & implementing data				456 hours

Conclusions

- Improvement of all safety measures evaluated was (13.97%)
- Out of 43 charts reviewed, (76.74%) of providers prescribed protocol medications when treating UTIs
- Patient comprehension gaps were identified: infection prevention at home (21%), understanding diagnosis (29%), and return precautions to emergency room (14%)
- Fifty percent (50%) of patients interviewed did not have a clear understanding about contact precautions
- Out of 124 completed tools, (44%) demonstrated adherence to recommended guidelines and hospital policy for contact precautions and hand washing
- 177 employee responses, 112 employees indicated support
- QI specialist on the unit influenced participation by staff
- Total staff available to participate was estimated at baseline
- UTIs identified by admitting diagnosis only
- Significance for spread to other areas of hospital for patient comprehension and contact precaution monitoring
- Sustainability requires multidisciplinary approach supported by Administration

Lessons Learned

- QI expert imperative to success of data collection
- Providers unaware of hospital's UTI protocol – imperative to evaluate systems for effectiveness
- Ensuring patients comprehend the basis of their diagnosis and how to prevent infection and illness after discharge
- Adjusting processes on a deeper level may be key to patient satisfaction and improvement.
- Quality improvement requires a team effort

Acknowledgements

- Onslow Memorial Hospital
- All staff on IMCU 3rd floor
- Cindy DeGraaff, Copy Editor