Antimicrobial Stewardship in Skilled Nursing Facilities – Challenges and Metrics

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Objectives

1. Describe the implementation process and role of key stakeholders in starting an antimicrobial stewardship collaboration between an acute care facility (ACF) and skilled nursing facilities (SNF)

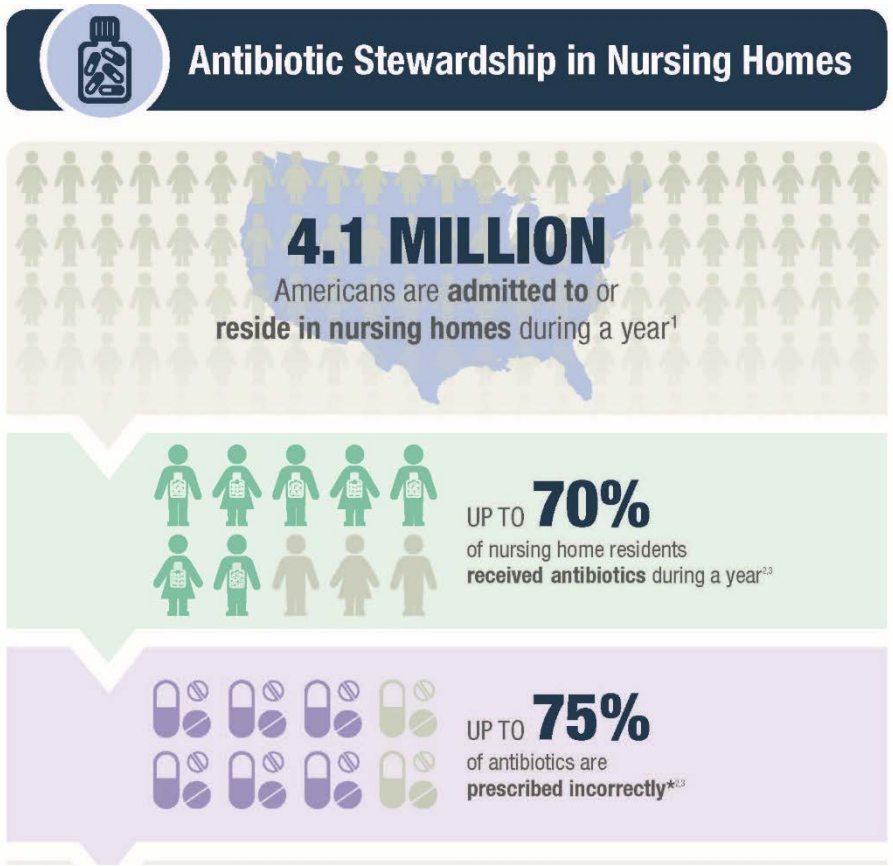
2. Discuss opportunities and challenges with implementing a large, multi-facility antimicrobial stewardship program (ASP)

3. Identify strategies for developing measurable metrics to track antibiotic prescribing and appropriate ordering of labs

4. Discuss findings of the current program and our recommendations

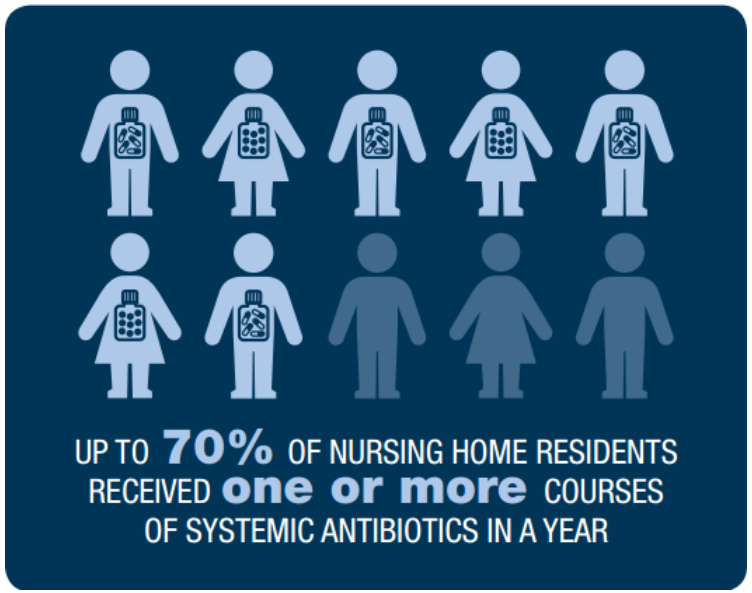
Background

- We know that ASP works in hospitals and tertiary care settings
- Literature began looking at ASP in outpatient settings and prescriber practice patterns
- ASP in nursing facilities is vital to the overall health of the community – there is opportunity!
  - Patients shared across the healthcare continuum
  - SNF patients are partly in the healthcare setting and partly in the community setting
  - Transmission of MDRO in colonized patients



http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html

Antibiotic Use in Nursing Homes a Requirement



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KAREN L. SMITH, MD, MPH
Director and State Public Health Officer

State of California—Health and Human Services Agency
California Department of Public Health

EDMUND G. BROWN JR.
Governor

December 30, 2015 AFL 15-30

TO: Skilled Nursing Facilities (SNFs)

SUBJECT: Senate Bill (SB) 361 – Antimicrobial Stewardship

AUTHORITY: Health and Safety Code (HSC) section 1275.4

All Facilities Letter (AFL) Summary

This AFL informs providers of the chaptering of SB 361, which requires all SNFs to adopt and implement an antimicrobial stewardship policy.

SB 361 (Chapter 764, Statutes of 2015) requires that each SNF adopt and implement an antimicrobial stewardship policy by January 1, 2017. The policy must be consistent with antimicrobial stewardship guidelines developed by the federal Centers for Disease Control and Prevention (CDC), the Centers for Medicare and Medicaid Services, the Society for Healthcare Epidemiology of America, or similar recognized professional organizations. The CDC has defined seven core elements of antibiotic stewardship for nursing homes; the CDC recommendations are available at the following link:

http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html

Challenges of Antibiotic Prescribing in Nursing Homes

- How do prescriber make decisions on antibiotic orders?
  - Rely on assessment made by someone else
  - 67% of orders occur over the phone
- Limited documentation of assessments
  - 43% of nursing home–initiated antibiotic courses had no documentation of infection
- Data/Labs
  - Difficulty obtaining and interpreting laboratory and diagnostic data to inform prescribing
- Other pressures
  - Influence of resident, family, other professional peers to start antibiotics

Bottom line:

Right Patient, Right Antibiotic, Right Time, Right Dose, Right Duration

Overview of SNF Antimicrobial Stewardship Program Collaborative

RC West Hollywood

Country Villa Terrace

Country Villa Pavilion

RC Beverly Hills

RC La Brea

Guardian

Sharon Care

Kennedy

- Started as the Enhanced Care Program with 8 neighboring SNF facilities, resulted in 25% reduction in 30-day readmission
- Established structure for ASP Collaborative
- Program Goals
  - Raise awareness of antimicrobial stewardship
  - Focus on UTIs
  - Implement SBAR to facilitate communication and assessment, serve as guidance for management
  - Establish monitoring process for outcome measures

SNF ASP UTI Project Goals: 2016

- Raise *awareness* regarding AS among staff and prescribers
- *Develop and utilize facility-specific nursing SBAR format* to facilitate assessment and communication of possible UTIs
- Implement *guidance* for management of ASB and UTI by appropriately using the antibiogram and antibiotic choice (provide SNF specific treatment guidelines)
- Establish and *monitor process and outcome* measures for each facility

Step by Step Guide on Implementation – It Is SLOW!

1. Foundation and Leadership Engagement

- Survey availability of current resources
- What are the gaps?
- Key stakeholders (medical directors, DON, DSD, Admin) buy-in and accountability
- Relationship with local health departments, consulting RX and Lab, clarify roles and expectations

2. Material Development, Implementation, and Education

- Develop site-specific education materials
- DON and DSD: set up in-service schedules
- Develop benchmark and metrics, keeping in mind nuances of each facility
- DOT, # of abx orders for UTI, volume of urine cultures using “reflex”, # of patients appropriately treated according to guidelines (McGeer’s criteria)

3. Sustainment and Measurement

- Monitor utility of education materials, identify barriers, address, and re-evaluate
- Adjust benchmark metrics as needed
- Anticipate staff turn-over, incorporate education into new staff orientation
- Reporting of metrics to QI committees

CDC Core Elements Checklist

http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html

Checklist for Core Elements of Antibiotic Stewardship in Nursing Homes

The following checklist is a companion to the Core Elements of Antibiotic Stewardship in Nursing Homes. The CDC recommends that all nursing homes take steps to implement antibiotic stewardship activities. Before getting started, use this checklist as a baseline assessment of policies and practices which are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually). Over time, implement activities for each element in a step-wise fashion.

LEADERSHIP SUPPORT	ESTABLISHED AT FACILITY

1. Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions? ❑ Yes ❑ No

   If yes, indicate which of the following are in place (select all that apply)
   - ❑ Written statement of leadership support to improve antibiotic use
   - ❑ Antibiotic stewardship duties included in medical director position description
   - ❑ Antibiotic stewardship duties included in director of nursing position description
   - ❑ Leadership monitors whether antibiotic stewardship policies are followed
   - ❑ Antibiotic use and resistance data is reviewed in quality assurance meetings

ACCOUNTABILITY

2. Has your facility identified a lead(s) for antibiotic stewardship activities? ❑ Yes ❑ No

   If yes, indicate who is accountable for stewardship activities (select all that apply)
   - ❑ Medical director
   - ❑ Director or assistant director of nursing services
   - ❑ Consultant pharmacist
   - ❑ Other:_____

DRUG EXPERTISE

3. Does your facility have access to individual(s) with antibiotic stewardship expertise? ❑ Yes ❑ No

   If yes, indicate who is accountable for stewardship activities (select all that apply)
   - ❑ Consultant pharmacy has staff trained/is experienced in antibiotic stewardship
   - ❑ Partnering with stewardship team at referral hospital
   - ❑ External infectious disease/stewardship consultant
   - ❑ Other:_____

ACTIONS TO IMPROVE USE

4. Does your facility have policies to improve antibiotic prescribing/use? ❑ Yes ❑ No

   If yes, indicate which policies are in place (select all that apply)
   - ❑ Requires prescribers to document a dose, duration, and indication for all antibiotic prescriptions
   - ❑ Developed facility-specific algorithm for assessing residents
   - ❑ Developed facility-specific algorithms for appropriate diagnostic testing (e.g., obtaining cultures) for specific infections
   - ❑ Developed facility-specific treatment recommendations for infections
   - ❑ Reviews antibiotic agents listed on the medication formulary
   - ❑ Other:_____

AHRQ Resources for Starting a Program

What Is the Start an Antimicrobial Stewardship Program Toolkit?

This toolkit is designed to help a nursing home select, plan for, introduce, and implement an antimicrobial stewardship program. The toolkit includes the following tools:

- Suggestions for how to **Gather a Team** to oversee the antimicrobial stewardship program (tool 1) (PDF | Word)
- **Roles and Responsibilities** to track team membership, roles, and responsibilities (tool 2) (PDF | Word)
- A **Readiness Assessment** to help determine what the nursing home is prepared to undertake (tool 3) (PDF | Word)
- An **Implementation Planning Sample Agenda** for the team to plan for the program (tool 4) (PDF | Word)
- **Draft Policies and Procedures for the Antimicrobial Stewardship Program,** including a sample policy letter and sample procedure letter (tool 5) (PDF | Word)

https://www.ahrq.gov/nhguide/index.html

AHRQ Readiness Assessment – What is the status quo?

- Can use for internal assessment vs sharing with ACF
- Resource oriented
- Identify gaps where ACF staff may assist
- What is the anticipated time commitment
- If SNF is involved in a regional/corporate company, can assistance be provided for headquarters?

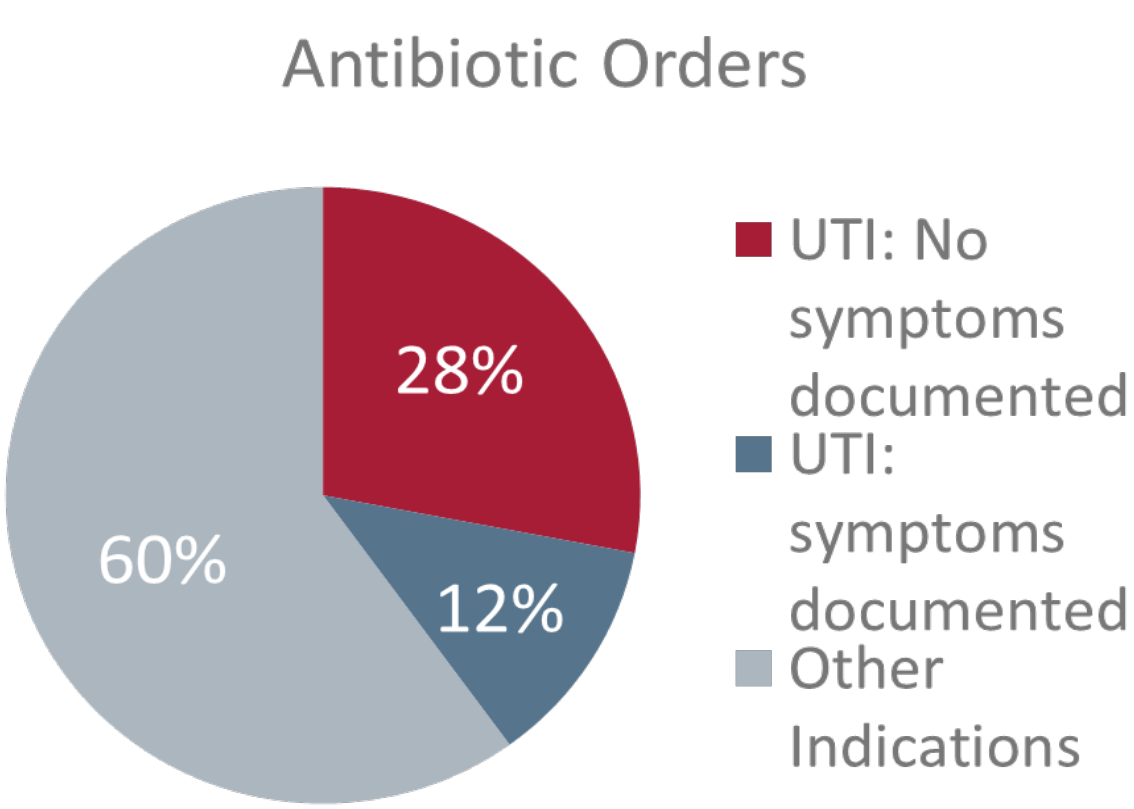
Is the Nursing Home Ready?	Yes	No
Is key leadership supportive of this effort? Support by leadership (i.e., the board and/or administrator, director of nursing, or medical director) is critical to change.		
Is the medical director actively involved in quality improvement and/or infection control?		
Is the nursing home financially stable?		
Is the nursing home's ownership and/or management stable (i.e., no changes anticipated over the next six months)?		
Is the nursing home in good standing with the State Survey Agency (e.g., not identified as a Special Focus Facility, not under State receivership, has not had admissions frozen)?		
Are there at least two staff who can serve as program champions and commit to leading the activity? Program champions could include (but are not limited to) the director of nursing, assistant director of nursing, charge nurse(s), infection prevention consultant/practitioner, and the medical director or other prescribing clinician. It is critical that at least two, if not more, staff are willing to lead the effort and champion it.		
Is there time to train staff? Implementation will require training for nursing staff and possibly prescribing clinicians, depending on the toolkit. Initial training for nurses and prescribing clinicians may take approximately 30 minutes to 2 hours. Are there sufficient resources (e.g., time, funds) to cover such training?		
Are there sufficient funds to make copies of materials for nurses, prescribing clinicians, and, as appropriate, residents and family members?		
Are there resources for implementing mechanisms to sustain the effort (e.g., staff who can train new nurses as they are hired and include the topic in the annual education program)? The key to sustaining any new activity is ensuring everyone is knowledgeable about it.		

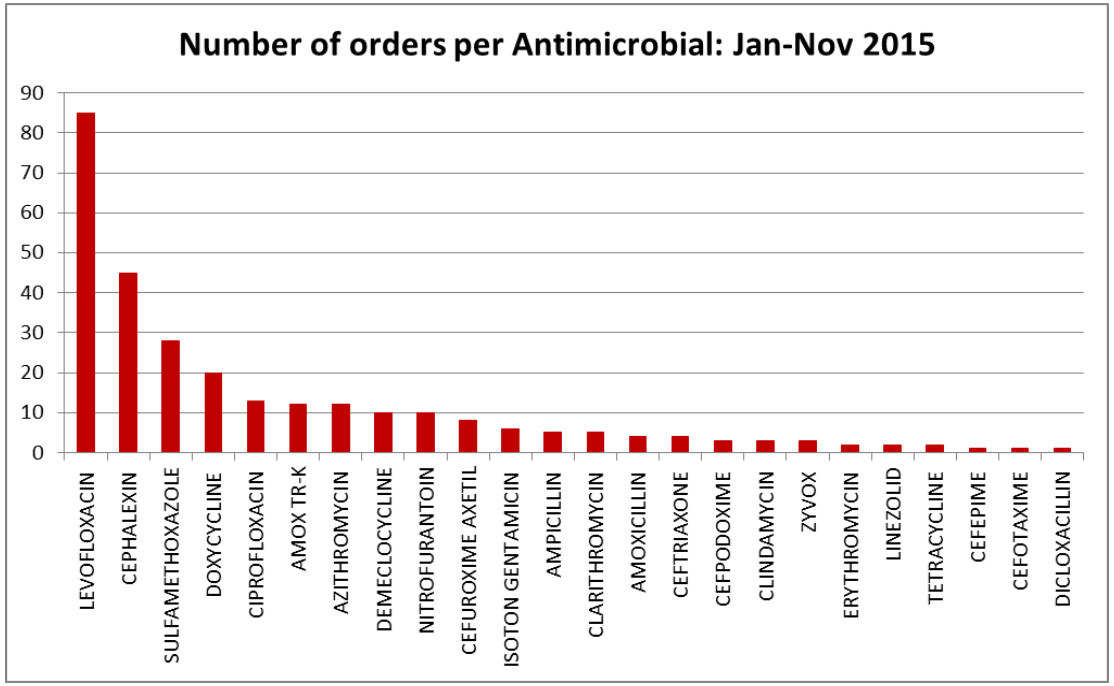
Survey Conducted Based on Core Elements and Identified Opportunities

ASP Core Element	Present (n)	Present (%)
Track rates of *C. difficile* infection	8	100
Access to Lab consultant	8	100
Access to Pharmacy consultant	8	100
Access to an antibiogram	7	87.5
Use standard infection surveillance criteria (e.g. McGeer criteria)	7	87.5
Document antibiotic usage (dose, duration, indication)	5	62.5
Provide antibiotic stewardship education to staff	4	50
Formal antibiotic stewardship policy	3	37.5
Review and feed back to prescriber of antibiotic appropriateness	1	12.5
Use standard clinical criteria (e.g. Loeb Minimum criteria)	0	0
Prescribers have access to treatment recommendations for common infections (Facility-specific)	0	0
Monitoring and reporting of inappropriate tests (e.g. urine cultures)	0	0
Programs for reducing antibiotics (e.g. asymptomatic bacteriuria)	0	0
Clinician (MD or pharmacist) oversees antibiotic use	0	0

- In addition to survey…
- Conducted SNF site visits and interviews with key leadership for assessment of infrastructure
- Provided education of new regulations to SNF leadership
- Obtain baseline data from lab and pharmacy
  - Baseline antibiotic use
  - Antibiogram
  - Urine cultures

Baseline Data Results

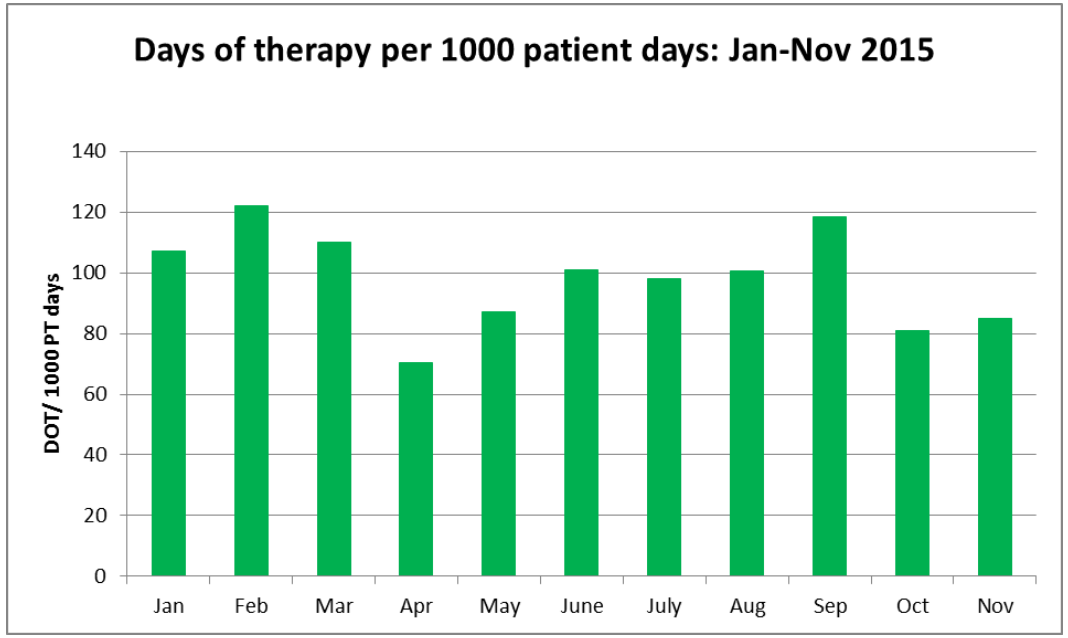


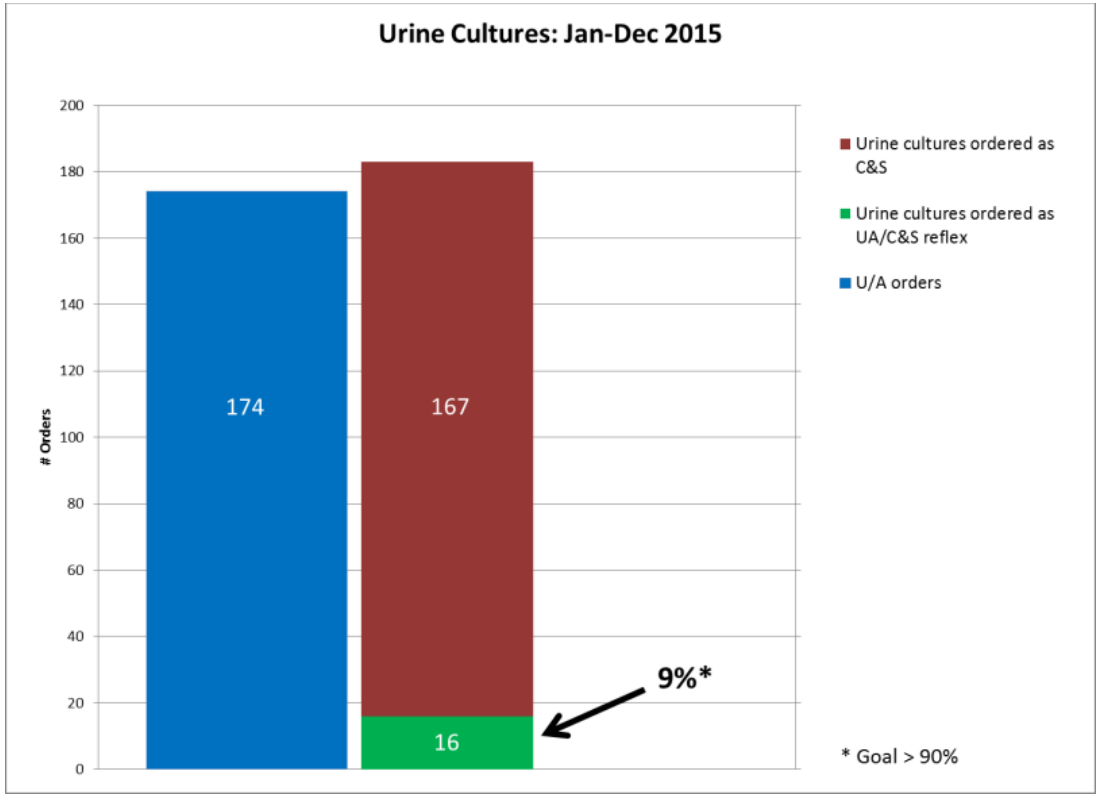


Antibiogram:
E coli susceptibility

- 36% Levofloxacin
- 97% Nitrofurantoin
- 97% Cefazolin

Baseline Data Results



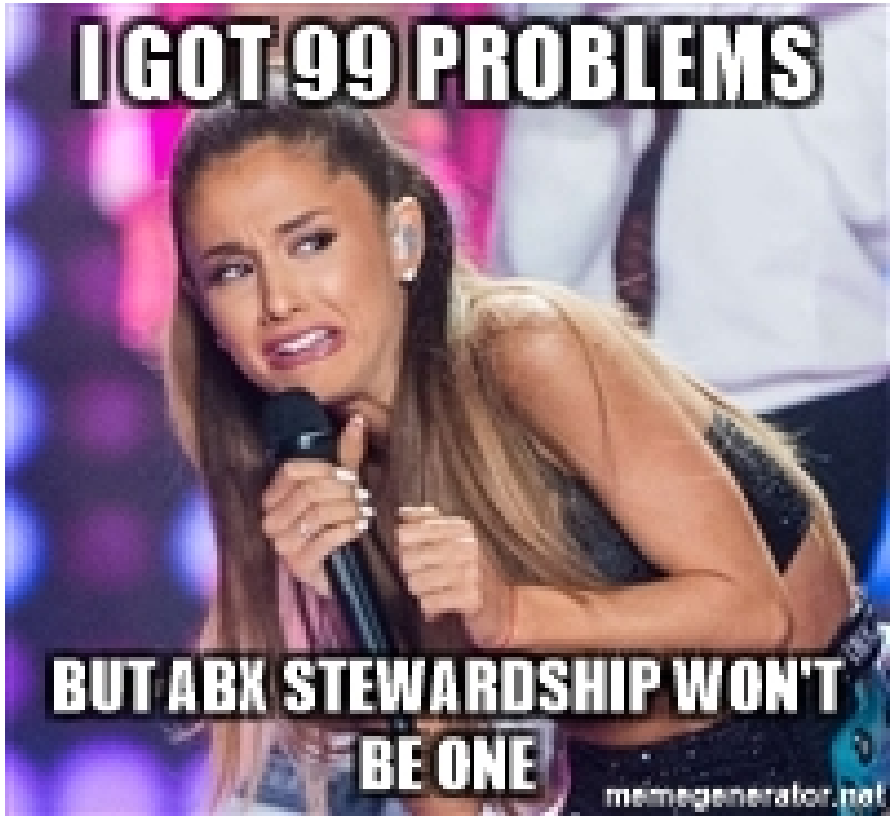


Step 1 Challenges and Considerations

- Pitching project to leadership of an acute care facility (ACF)
  - Why does it benefit both parties?
  - Anticipate time commitment of consultants from ACF: use residents and fellows

- Commitment from SNF leadership: Medical Director, DON, DSD Admin
  - What is each person's role? Team collaborative – everyone has responsibilities
  - What is the chain of command for front line staff?
  - How will miscommunication be addressed?

- Where are there resource gaps at the SNF?
  - Use ACF consultants as expertise to train SNF staff
  - Knowledge of available resources
  - Assign designated personnel for new role and make sure they are supported



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SBAR Tool – Assessment and Recommendations for UTI Management

ASSESSMENT (Complete appropriate box and check all criteria that apply)

Resident WITHOUT Indwelling Catheter

EITHER □ Acute dysuria alone

OR

□ Single temp of 100°F (38°C) or repeated temps of 99°F (37°C) **AND** at least **ONE** of the following:

- o Urgency
- oFrequency
- o Suprapubic pain
- o Urinary incontinence (new or worsening)
- o Costovertebral angle tenderness
- o Gross Hematuria

□ **None of the above**

Resident WITH Indwelling Catheter

ANY ONE or more of the following Criteria:

□ Fever of 100°F (38°C) or repeated temps of 99°F (37°C)

□ New costovertebral angle tenderness

□ Rigors

□ Delirium (rule out other causes, see page 2)

□ Hypotension

□ Gross Hematuria

□ **None of the above**

UTI Criteria Met?: □ **YES** □ **NO**

DELIRIUMS

D: Drugs (new medications, change in dosages) Dementia, Discomfort (Pain, positioning)
E: Ears, Eyes, Environment: (check hearing aids, glasses, other changes to room)
L: Low oxygen (heart attack, stroke)
I: Infection: (pneumonia, symptomatic UTI, cellulitis)
R: Retention: (constipation, urinary retention)
I: Ictal State: (seizure)
U: Under: (dehydration, malnutrition)
M: Metabolic: (diabetes, check blood sugar, Basic Metabolic Panel)
S: Subdural hematoma (head trauma/falls)

Urine Studies

* Collect clean voided specimen if possible; may use in/out catheter if needed.
Residents with indwelling catheter > 2 weeks, change catheter and collect urine from new catheter.

□ (***Preferred***) Urinalysis, with culture and sensitivity (C&S) **if indicated** Date_____

□ Urine C&S only Date_____

□ Urinalysis only without C&S Date_____

□ Call provider with results of above, to reassess antibiotic selection

Other Orders

□ Review for alternate diagnosis (e.g. DELIRIUMS)

□ If indicated, increase fluid consumption (consider addition of cranberry juice)

□ Monitor vital signs/symptoms Q __hrs

□ Record Ins/Outs

□ Re-evaluate if criteria for symptomatic UTI develop

Antibiotic Therapy (if indicated)

Please see below for empiric antibiotic initiation recommendations

□ Antibiotic therapy ordered

Antibiotic Name/Dose _____ Route □PO □ IV

Date Started_____ Duration of Therapy _____

Ordering Provider _____

SBAR Tool

Antibiotic Treatment Recommendations*+:

No indwelling catheter:

1. Cephalexin 500 mg po TID for 3 days
2. Trimethoprim-Sulfamethoxazole (Bactrim) 160/800 mg (1 DS tablet) BID for 3 days (if CrCl<30, may call Rx for dose)
3. Nitrofurantoin (Macrobid) 50-100 mg po QID for 5 days (avoid if CrCl <40)

Catheter-Associated UTI Suspected:

For clinically **stable** patients:

1. Cephalexin 500 mg po TID pending culture results, or
2. Ceftriaxone 1 gm IV Q24 hrs pending culture results
3. Ertapenem** 1 gm IV Q24 hrs pending culture results

Duration of treatment: 7 days if prompt resolution of symptoms; 10-14 days if delayed response

Clinically ill patients with pyelonephritis/urosepsis will need assessment for potential transfer to hospital

Facility-Specific

+These are empiric treatment recommendations. Culture results should be reviewed to provide directed therapy

*This facility has high levels of fluoroquinolone resistance - DO NOT use Fluoroquinolones for routine empiric therapy

**This facility has a number of ESBL *E. coli* isolates, please promptly follow up on culture results and monitor clinical status

Patients on warfarin (Coumadin) may have drug-drug interactions (Ciprofloxacin, tetracyclines, metronidazole, TMP/SMX may increase warfarin effect)

[1]Adapted from http://macoalition.org/evaluation-and-treatment-uti-in-elderly.shtml; www.ahrq.gov/NH-ASPGuide

Provide Applicable Education

*Twelve Month Antibiogram

	Citrobacter youngae	Coagulase negative Staphylococcus	Enterococcus faecium	Enterococcus	Escherichia coli	Escherichia coli ESBL POSITIVE	Klebsiella oxytoca	Klebsiella pneumoniae	Klebsiella pneumoniae ESBL POSITIVE	Morganella morganii	Proteus mirabilis	Providencia stuartii	Pseudomonas aeruginosa	Staphylococcus aureus	Staphylococcus aureus MRSA	Streptococcus group B
	1	3	1	33	33	14	3	13	4	1	32	7	24	2	5	1
	100				100	100	100	92	100	100	100	100	100			
												100				
AMPICILLIN			0	76	55	0	0	0	0	0	72	0				
AMPICILLIN/SULBACTA					67	43	67	77	25	0	84	0				
BENZYLPENICILLIN		0	0	76										0	0	
CEFAZOLIN	0				97		67	92		0	88	0				
CEFEPIME	0				100		100	92		100	88	100	88			
CEFTAZIDIME	100				100		100	92		0	88	100	88			
CEFTRIAXONE	100				100		100	92		0	88	100				
CIPROFLOXACIN	100	0	0	23	36	0	100	77	0		28	29	29	0	0	
CLINDAMYCIN		67												0	0	
ERTAPENEM	100				100	100	100	92	100	100	100	100				
ERYTHROMYCIN		0												0	0	
GENTAMICIN	100				85	79	100	92	100	0	91	0	79			
IMIPENEM	100				100	100	100	92	100	0	25	43	67			
LEVOFLOXACIN	100	0	0	23	36	0	100	77	0	100	34	29	29	0	0	
LINEZOLID		100	100	100										100	100	
NITROFURANTOIN	100	100		75	97	73	67	23	0	0	0	0		100	100	
OXACILLIN MIC		0												100	0	
PIPERACILLIN/TAZOBAC	100				100	86	100	92	50	100	100	100	100			
RIFAMPICIN		100												100	100	
TETRACYCLINE		67	100	25										100	40	
TOBRAMYCIN	100				91	86	100	92	100	100	91	0	96			
TRIMETHOPRIM/SULFAME	100	100			73	36	100	92	100	0	75	86		100	100	
VANCOMYCIN		100	0	67										100	100	

E coli susceptibility
36% Levofloxacin
97% Nitrofurantoin
97% Cefazolin

- Knowledge is power!
- Priority is patient safety

Visual Tools – Optimal Management Poster

Optimal Management of Suspected Urinary Tract Infection (UTI)

CEDARS-SINAI

Cedars-Sinai ECP SNF| Antibiotic Stewardship Collaboratio

Definitions

Bacteriuria: Bacteria in the urine (i.e., positive urine culture)

UTI: Bacteriuria + symptoms of a UTI (symptomatic UTI)

Asymptomatic bacteriuria (ASB): Bacteriuria in a patient *without* symptoms of a UTI

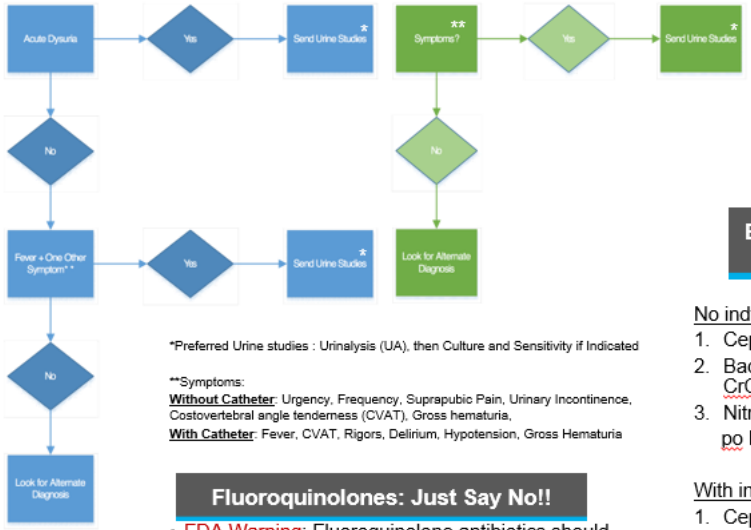
Facts

- 40% of all antibiotics prescribed in SNFs are for suspected UTI
- 70% of these prescriptions are not needed

When to Suspect UTI in Patients

Without Urinary Catheter

With Urinary Catheter



*Preferred Urine studies : Urinalysis (UA), then Culture and Sensitivity if Indicated

**Symptoms:
Without Catheter: Urgency, Frequency, Suprapubic Pain, Urinary Incontinence, Costovertebral angle tenderness (CVAT), Gross hematuria,
With Catheter: Fever, CVAT, Rigors, Delirium, Hypotension, Gross Hematuria

Fluoroquinolones: Just Say No!!

- FDA Warning: Fluoroquinolone antibiotics should NOT be used for treating uncomplicated UTI
- Examples: Levofloxacin and Ciprofloxacin
- Fluoroquinolones are common drugs used for UTI, but not always the best drugs
- Common UTI causing bacteria have HIGH rates of RESISTANCE to fluoroquinolones
- Side effects: tendon rupture, delirium, arrhythmia

Choosing Wisely

- Not all positive urine cultures need to be treated
- Do not treat ASB with antibiotics
- Do not get urine cultures when patients do not have urinary tract signs and symptoms

Empiric Antibiotic Treatment (when indicated)

No indwelling urinary catheter:

1. Cephalexin 500 mg po TID for 3 days
2. Bactrim DS 1 tab BID for 3 days (if CrCl<30, may call pharmacy for dosage)
3. Nitrofurantoin (Macrobid) 100 mg po BID for 5 days (avoid if CrCl <40)

With indwelling urinary catheter (stable):

1. Cephalexin 500 mg po TID
2. Ceftriaxone 1 gm IV Q24 h
3. Ertapenem** 1gm IV Q24h (if ESBL suspected)

Duration of treatment: 7 days if prompt resolution of symptoms; 10-14 if delayed response

Clinically ill patients (pyelonephritis or urosepsis): Assess for transfer to hospital if necessary

Developing Metrics

- What is currently tracked and what is the pharmacy/lab reporting capabilities?
  - DOT: standard ASP metric in hospitals, accounts for census, may take time & expertise
  - # of antibiotic orders: can get from pharmacy, does not track indication (unless indicated on order) or duration, does not account for census
  - Number of urine cultures (proportion of reflex)
  - Utilization of SBARs, treatment according to recommended agents

Month	Total # Abx orders for all indications	Total # Abx orders for all indications (rehab)	Total # Abx orders for all indication (adm)	Total # Abx orders for UTI	Total # Abx orders for UTI (rehab)	Total # Abx orders for UTI (adm)	Total # Abx orders for UTI (rehab) *w/o meeting criteria*	% total Abx for UTI of all abx orders	% total abx orders for UTI of all abx (rehab)	% total Abx orders for UTI (rehab) *w/o meeting criteria*	Total # FQ orders for all indications	Total # FQ orders for all indications (rehab)	Total #FQ orders for all indications (adm)	Total # FQ orders or UTI	Total # FQ orders for UTI (rehab)	Total # FQ orders for UTI (adm)	% FQ orders for all indications of all abx	% FQ orders for all indications of all abx (rehab)	% FQ orders of UTI of all FQ orders	% FQ orders for UTI of all FQ orders (rehab)	% urine studies ordered as "reflex"
January	112	53	59	35	18	17	13	31%	34%	72%	23	14	8	5	2	3	21%	26%	22%	14%	71%
February	103	59	44	43	29	14	25	42%	49%	86%	20	11	6	6	4	2	19%	19%	30%	36%	75%
March	132	42	90	37	18	19	14	28%	43%	78%	25	14	11	11	6	5	19%	33%	44%	43%	
April	104	51	53	49	24	25	21	47%	47%	88%	19	6	13	10	4	6	18%	12%	53%	67%	
May	93	49	44	19	10	9	10	20%	20%	100%	14	9	5	5	3	2	15%	18%	36%	33%	
June	98	43	55	35	20	15	18	36%	47%	90%	14	10	4	8	7	1	14%	23%	57%	70%	
July			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
August			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
September			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
October			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
November			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
December			0			0		#DIV/0!	#DIV/0!	#DIV/0!							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

Step 2 Challenges and Considerations

- Prescriber practices vary widely (abx utilization, ordering unnecessary labs,etc), and individual physicians have no formal accountability. Identify outlier individuals and provide education
  - Chain of command and **accountability** model of leadership becomes very important (use Medical Director/QI committee role)
  - Provide feedback in the form of clinical case scenarios to individual prescribers and/or QI

- Pressure from residents and family
  - Provide education (RN and provider should be on same page, provide the SAME education)
  - CDC Get Smart educational materials can be printed (https://www.cdc.gov/getsmart/community/materials-references/print-materials/index.html)
  - Hang "**commitment posters**" in patient rooms, nurses stations, and provide in patient admission packets for all residents, regardless of current infection status

Step 2 Challenges and Considerations

- SNF staff burden and high staff turn over
  - Incorporate stewardship education and any clinical educational materials into new staff orientation
  - Incorporate new materials into work flow to minimize project fatigue

- Nursing staff confidence
  - Keep staff engaged by providing progress/metrics
  - DON and DSD attends QI meetings, convey to staff the support they have from QD committee
  - Highlight importance of education

- Who is ultimately accountable?
  - Incorporate stewardship program into QI and recommendations and issues should be addressed from a quality and safety standpoint

Step by Step Guide on Implementation – It Is SLOW!

1. Foundation and Leadership Engagement

- Survey availability of current resources
- What are the gaps?
- Key stakeholders (medical directors, DON, DSD, Admin) buy-in and accountability
- Relationship with local health departments, consulting RX and Lab, clarify roles and expectations

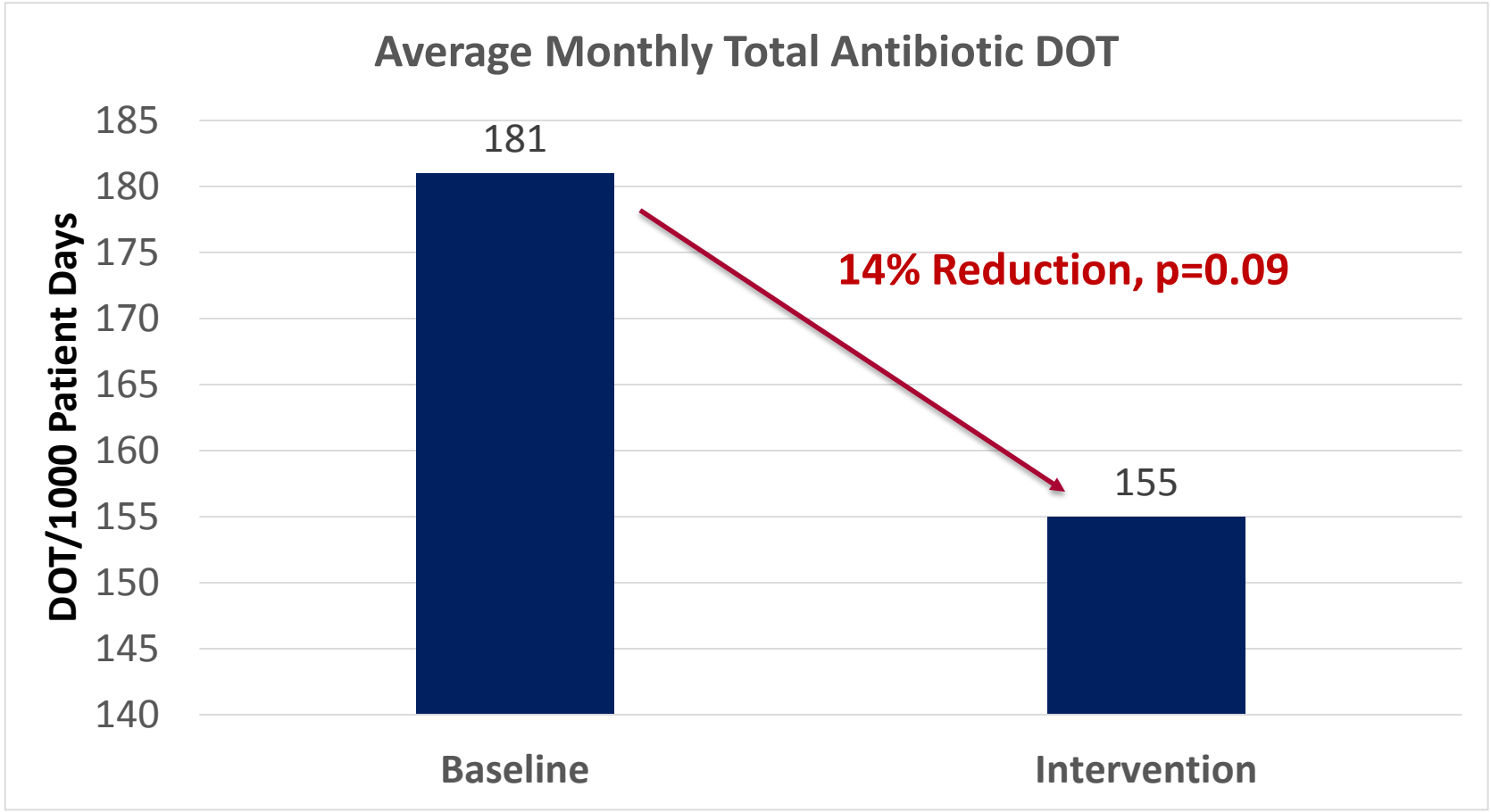
2. Material Development, Implementation, and Education

- Develop site-specific education materials
- DON and DSD: set up in-service schedules
- Develop benchmark and metrics, keeping in mind nuances of each facility
- DOT, # of abx orders for UTI, volume of urine cultures using “reflex”, # of patients appropriately treated according to guidelines (McGeer’s criteria)

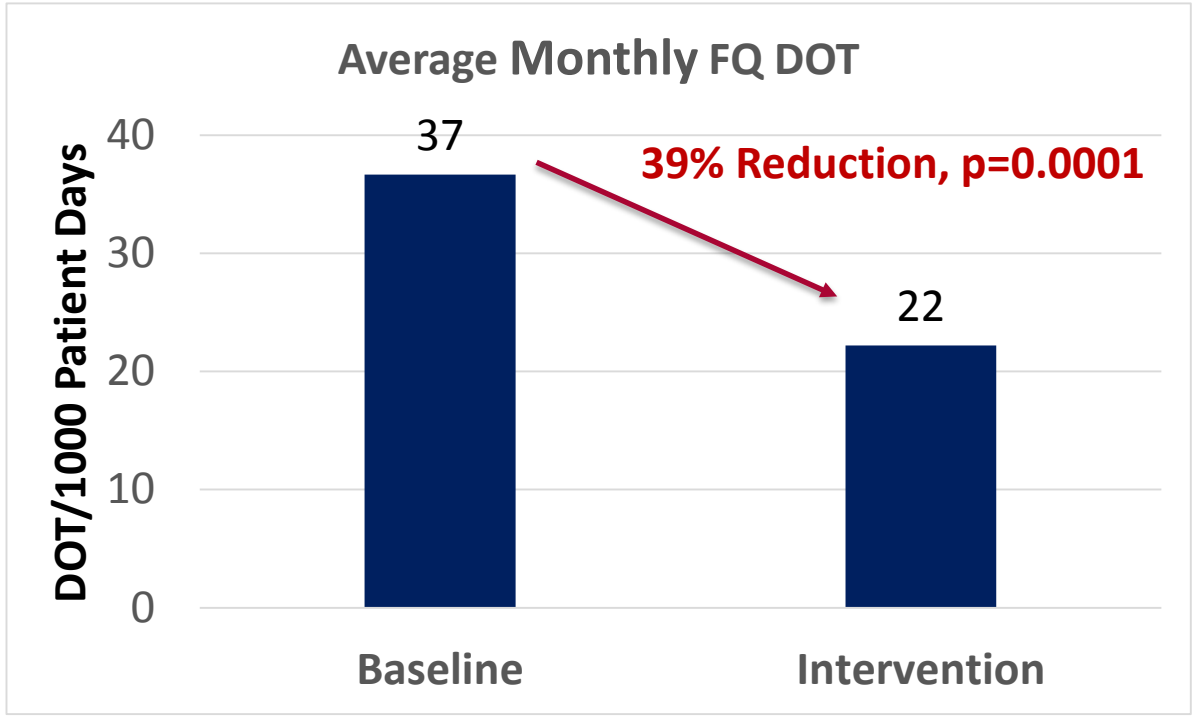
3. Sustainment and Measurement

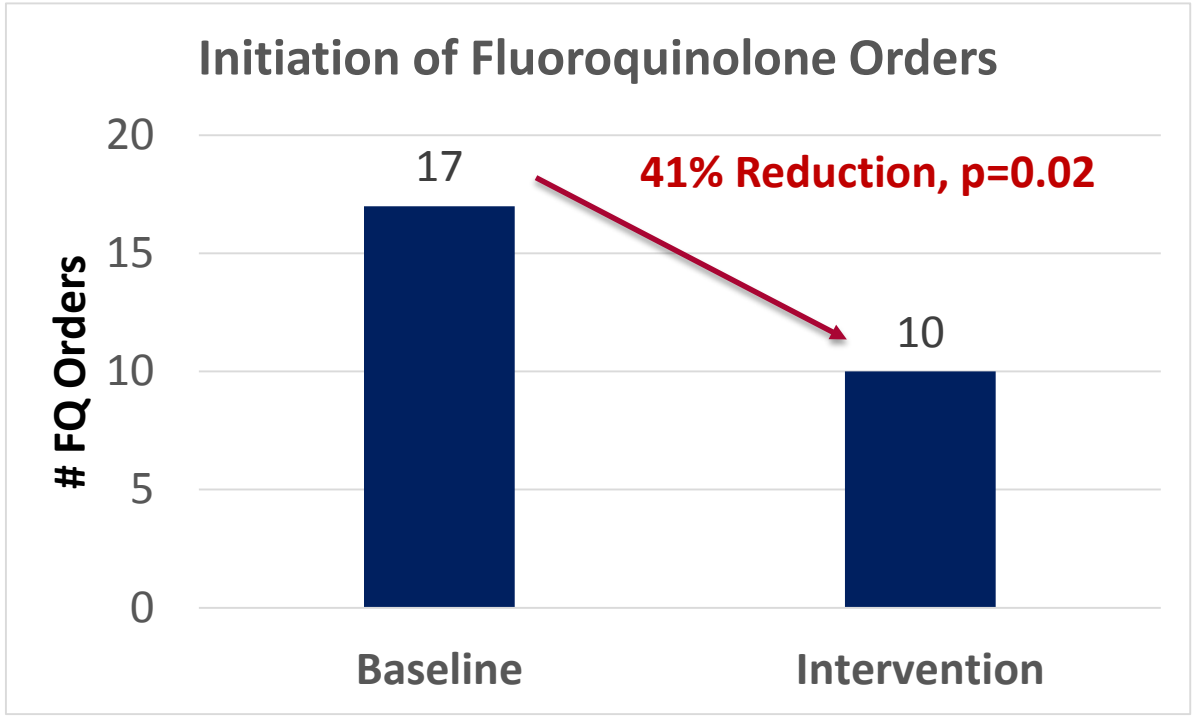
- Monitor utility of education materials, identify barriers, address, and re-evaluate
- Adjust benchmark metrics as needed
- Anticipate staff turn-over, incorporate education into new staff orientation
- Reporting of metrics to QI committees

Recent Results



Recent Results





Recent Results

- One SNF kept internal logs, which allowed for more detailed documentation of antibiotics and their indications, thus allowing a different metric

	Pre-Intervention	Post-Intervention	% Reduction	P-value
Initiation of antibiotics at SNF 1 for UTIs (orders / month)	75	53	29	P<0.001
Initiation of FQ at SNF 1 for UTIs (orders / month)	11	5	55%	P<0.001

- Total of 209 SBARs completed at 3 SNFs, 77% had an antibiotic ordered for UTI indication

- Out of the 161 residents with an antibiotic order
  - 84% were assessed per SBAR as not having met McGeer's criteria
  - 49% had an agent consistent with recommendations (may not be completely accurate)

Step 3 Challenges and Considerations

- Sustaining commitment challenging with leadership turnover (DON, DSD)
  - Reinitiating the process, re-engage leadership

- Streamlining data collection and timeliness
  - Developed tracking sheet for each facility and designate someone to fill out monthly
  - Variability in utilization of tracking sheet
  - Technical challenges (slow computers, unable to find files, multiple emails or attachments) impede efficient data collection and result reporting

Thank you

- For continued support from facility administrators, medical directors, directors of nursing, directors of staff education at each facility
- Front line staff at each facility
- Extended Care Program educators and coordinators
- LACDPH team
- Cedars-Sinai team

Available Resources

Organization	URL
The Joint Commission (TJC) • Standards	https://www.jointcommission.org/assets/1/6/New_Antimicrobial_Stewardship_Standard.pdf
Center for Disease Control and Prevention (CDC) • Core Elements Guide • Checklist • Infographics and education materials for healthcare providers, and patients/family	https://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship.pdf https://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship-checklist.pdf https://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html
Agency for Healthcare Research and Quality (AHRQ) • Online nursing training courses (can earn nursing CE) • Guidance documents for assembling a team, communication, sample policies and procedures, tracking sheets • Clinical toolkits for various infections • Education on antibiograms for prescribers	https://www.ahrq.gov/nhguide/toolkits.html https://www.ahrq.gov/nhguide/toolkits/determine-whether-to-treat/index.html https://www.ahrq.gov/nhguide/toolkits/help-clinicians-choose-the-right-antibiotic/index.html https://www.ahrq.gov/nhguide/toolkits/educate-and-engage/index.html

Available Resources

Organization	URL
American Nurses Association (ANA) • ANA/CDC White paper on role of Nurses in Stewardship	http://nursingworld.org/ www.nursingworld.org/ANA-CDC-AntibioticStewardship-WhitePaper
Departments of Public Health California (CDPH) • Six-part webinar series • Sample communication letter to prescribers • Sample policy and procedure document, suspected infection assessment forms, flowcharts for clinical criteria of various infections Minnesota (MDH) • Nursing communication tools, infection surveillance tools, educational modules	https://archive.cdph.ca.gov/programs/hai/Pages/ASPinNursingHomesWebinarSeries2016.aspx http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/
Society of Infectious Disease Pharmacists (SIDP)/American Society of Consultant Pharmacists (ASCP) • Certificate Program (3-phase) • $850 for CE and content (discount available for trainees and multiple participants of the same institution)	https://www.sidp.org/LTCStewardship