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CHANGING LIVES

Gram Negative bacteraemia reduction plan –Update

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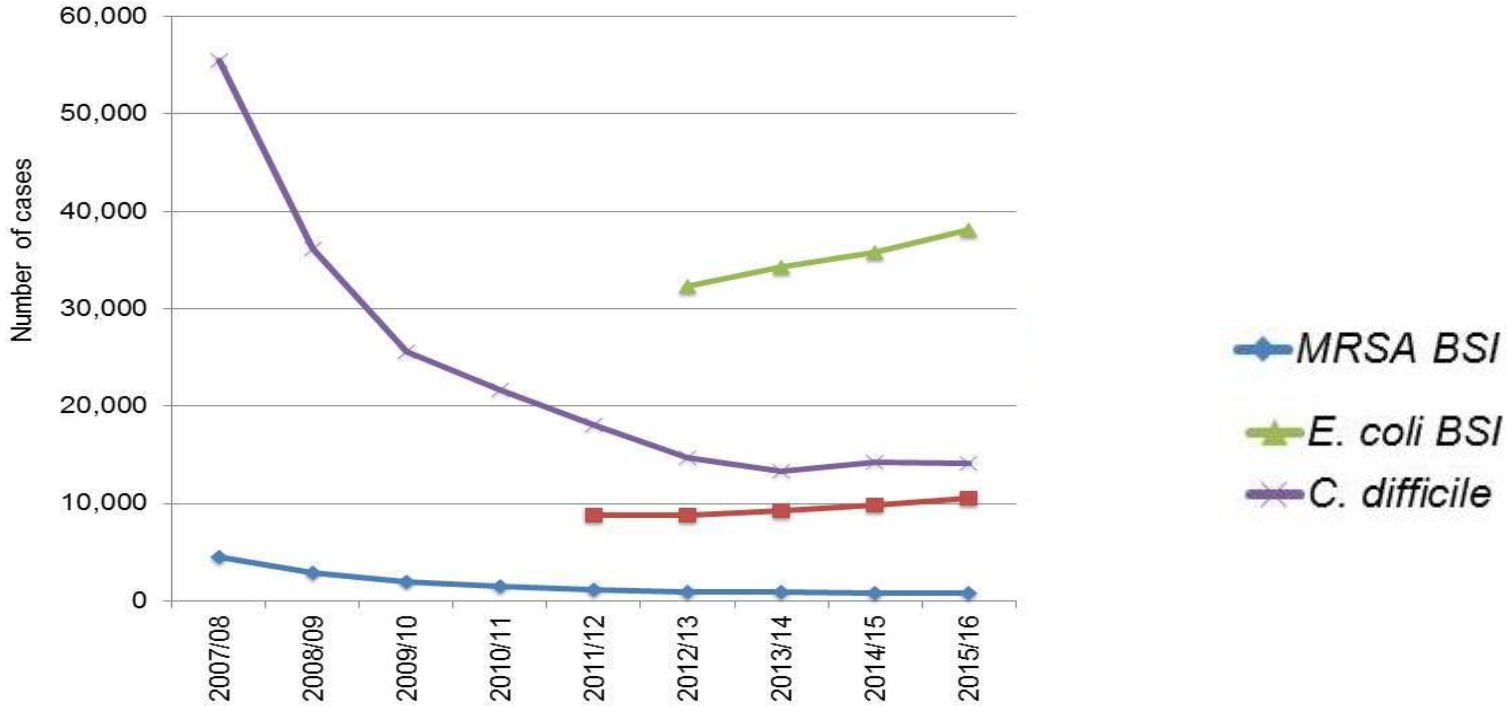
18/9/2019

PROUD to care

Background

- In May 2016, the Government announced its ambition to halve healthcare associated GNBI's by 2021.
- This was in response to the final report of the independent review of Antimicrobial Resistance led by Lord O'Neill.
- GNBI believed to have contributed to approximately 5,500 NHS patient deaths in 2015.

Context


60,000
50,000
40,000
30,000
20,000
10,000
0
Number of cases
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
MRSA BSI
E. coli BSI
C. difficile

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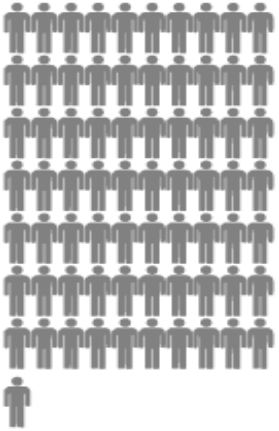
MRSA bacteraemia

January - March 2017	January - March 2018
1.7 out of every 100,000 people	1.7 out of every 100,000 people

C. difficile infection

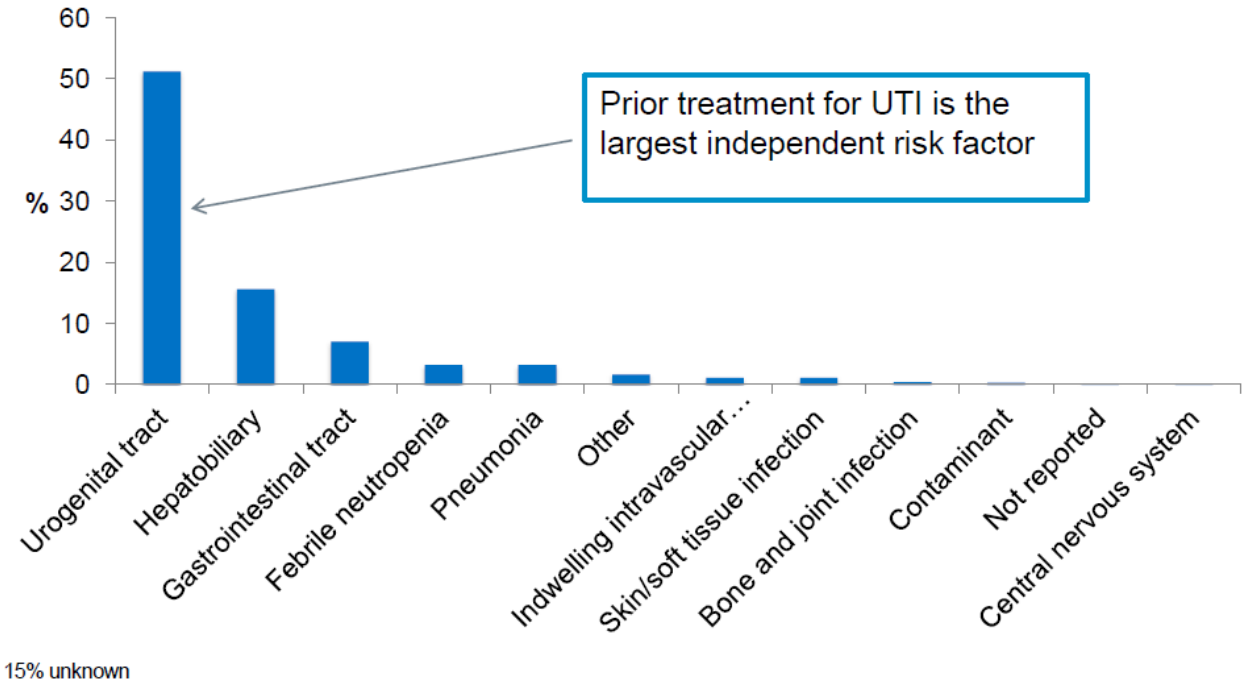
January - March 2017	January - March 2018
22 out of every 100,000 people	22 out of every 100,000 people

E. coli bacteraemia



January - March 2017	January - March 2018
71 out of every 100,000 people	69 out of every 100,000 people

Source of *E.coli* BSI



15% unknown

Abernethy JHI 2017

Key healthcare events

Key events related to BSI	%
Antibiotics (4 weeks)	32.4
Urinary catheter in situ, inserted, removed, manipulated (7 days)	21.0
Other device in situ or removed (4 weeks)	7.3
Other procedure (4 weeks)	12.4

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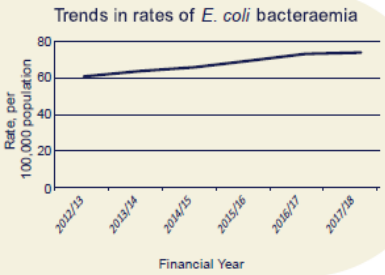
Public Health England

Protecting and improving the nation's health

E. coli bacteraemia England 2017/18

Overall rate

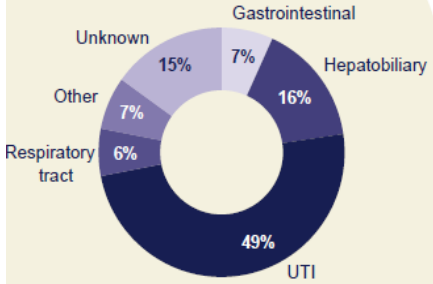
74 people out of every 100,000 will acquire an E.*coli* bacteraemia



Risk greater among elderly

Adult male rate	Adult female rate	Elderly male rate	Elderly female rate
53 adult males out of every 100,000 (age 45-64)	54 adult females out of every 100,000 (age 45-64)	901 elderly males out of every 100,000 (age ≥85)	616 elderly females out of every 100,000 (age ≥85)

Most common source of infection



Most cases are community onset

74% <2 days

26% ≥2 days

For full report, please see https://www.gov.uk/government/statistics/mrsa-mssa-and-e-coli-bacteraemia-and-c-difficile-infection-annual-epidemiological-commentary

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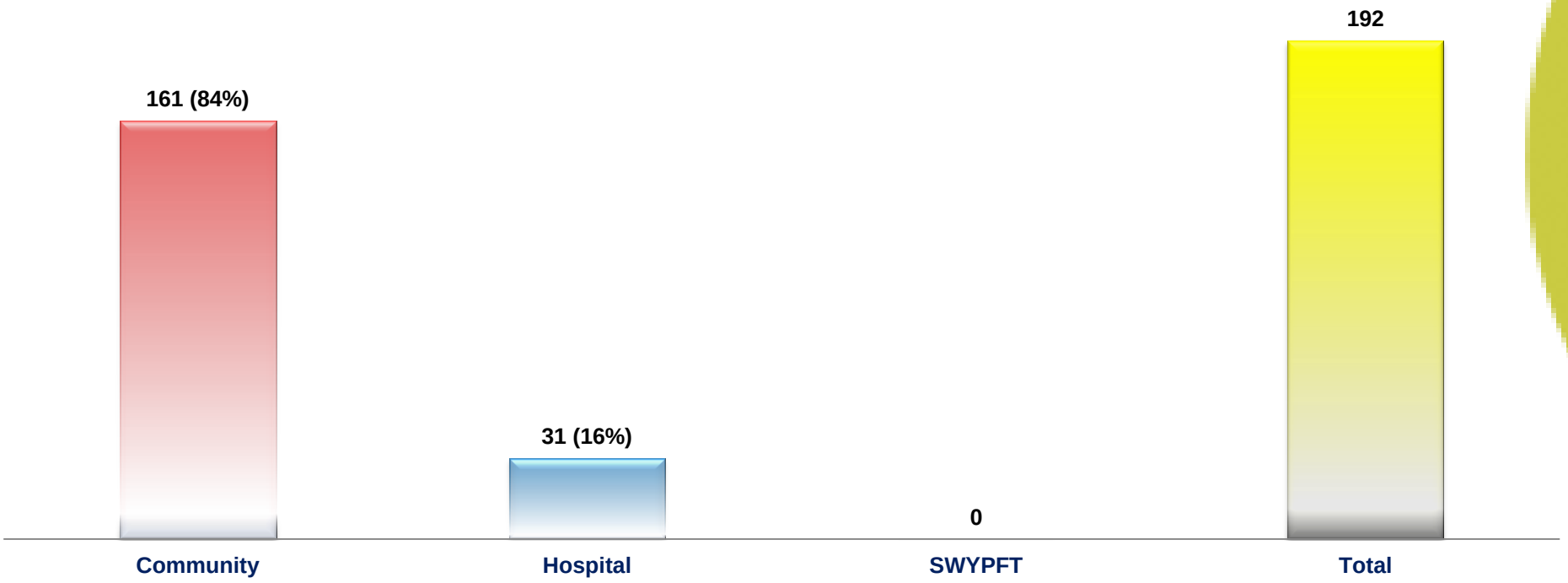
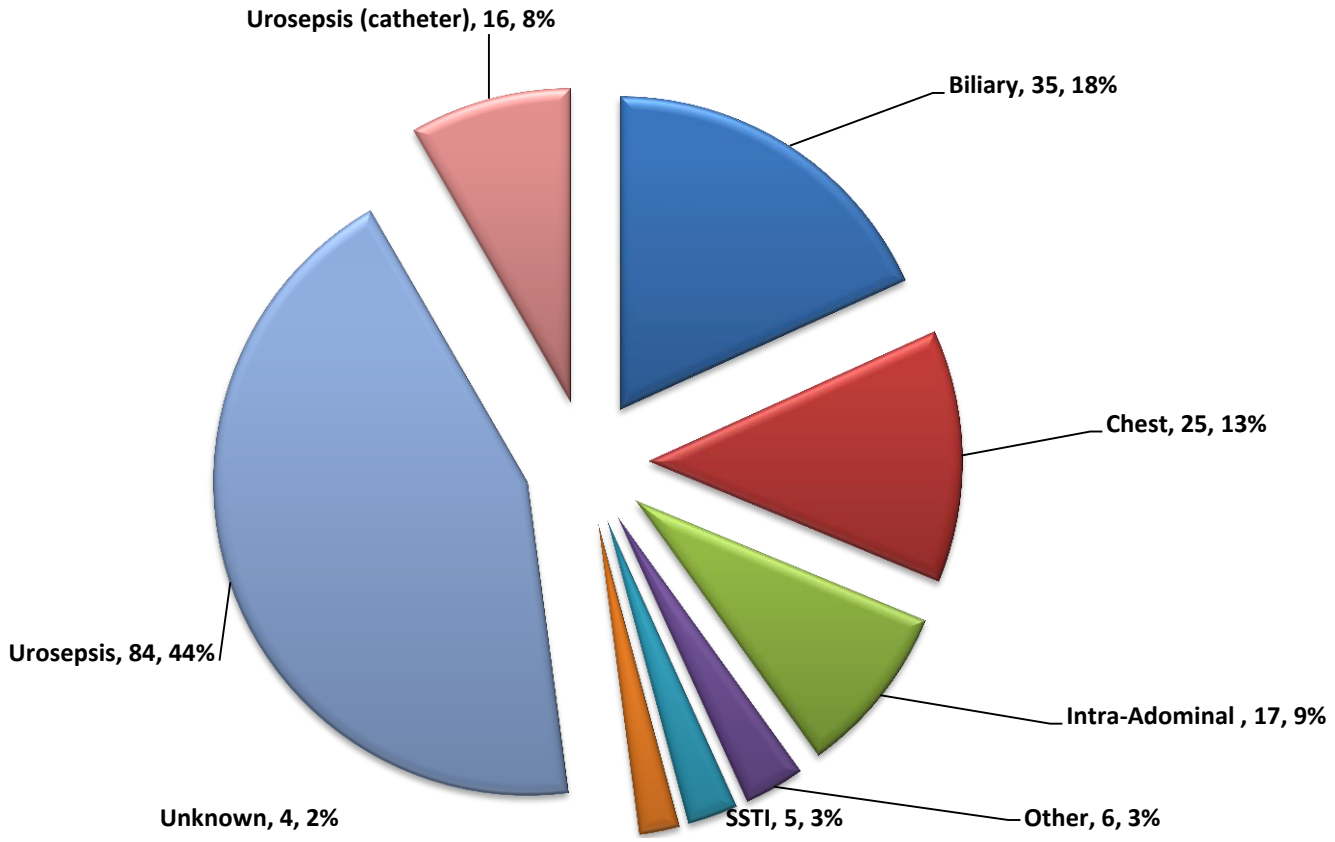
Understanding local data

E’coli Bacteraemia 2018 / 19



E’Coli by Source 2018/19



RCA of 16 community cases

- Only 2 of the 16 patients had a urinary catheter in place.
- 4 patients had treatment for recurrent uti
- Samples of urine were not sent in 8 cases who had treatment of uti
- 9 patients appeared to have had no Hospital interventions prior to the onset of the bacteraemia.

RCA of catheter associated UTI

- There were 9 RCA's undertaken on 7 patients who were diagnosed with *E.coli* blood stream infection associated with a urinary catheter.
- There were 6 male and 1 female patient included in the review process with an age range of 71 – 91 years
- 5 of the patients lived in their own home and 2 patients lived in a care home.
- In all 9 cases catheter insertion was classed as appropriate

- The main contributing factor identified was a traumatic removal of the catheter; this was identified in 3 RCA's.
- Other contributing factors related to catheter blockages and re-catheterisation due to retention
- In 3 patients a trial without catheter was attempted
- 1 x patient did not have a trial without catheter.
- In 5 cases a trial without catheter was not appropriate

Reducing GNB bacteraemia

1)Prevention of UTI

2)Correct diagnosis of UTI

3) Appropriate Treatment of UTI

4) Appropriate management of Catheter

Prevention

- Adequate hydration
  minimum of 2 litres/day
  (fluid balance charts)

- Good personal hygiene
- Avoid feminine hygiene products
- Encourage complete bladder emptying
- Encourage front to back cleansing
- Change incontinence pads frequently
- Timer alerts for reminding to use toilet for memory impaired

Diagnostic Challenges in elderly

- Elderly frequently have dysuria, frequency, incontinence with no infection
- Comorbid illnesses may result in symptoms similar to UTIs.
- Cognitive impairment may make reporting of symptoms difficult.
- Older individuals can have atypical presentations for infections
- Asymptomatic bacteriuria is common in elderly

Common reason for treating

- The urine smells or is cloudy
- The Dipstick is “positive”
- Positive MSU result
- General decline

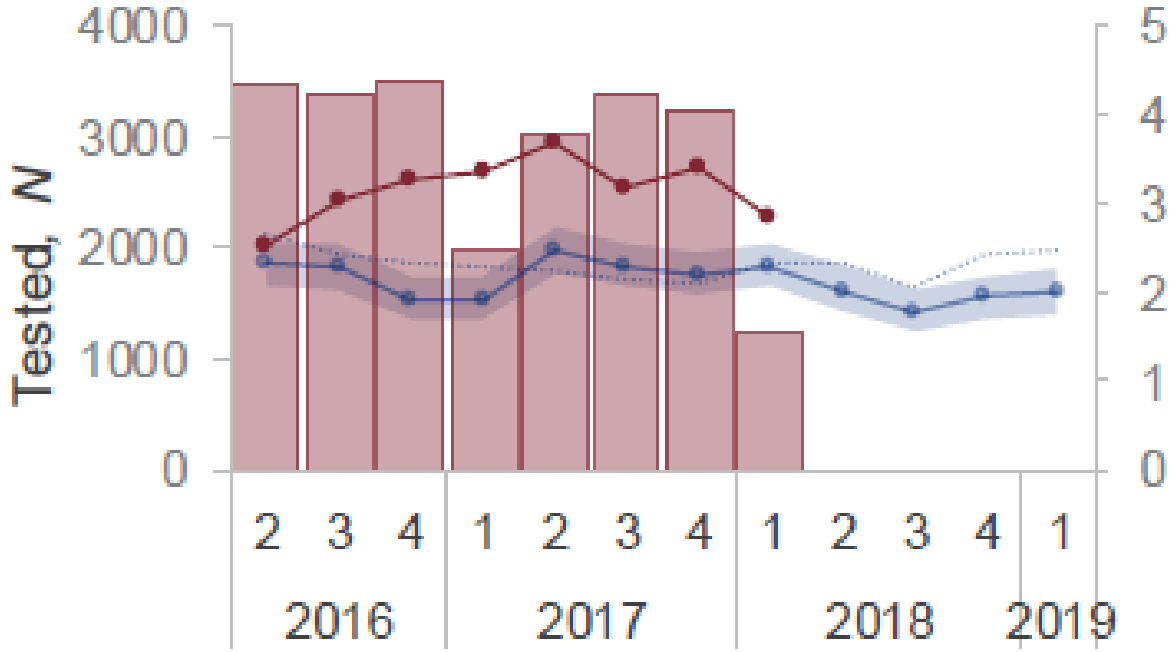
Urine Culture

- A urine culture should always be obtained when evaluating SYMPTOMATIC infections.
- Urine cultures does not establish diagnosis but will assist in appropriate antibiotic selection.
- A negative urine culture obtained prior to initiation of antibiotics excludes routine bacterial urinary infection

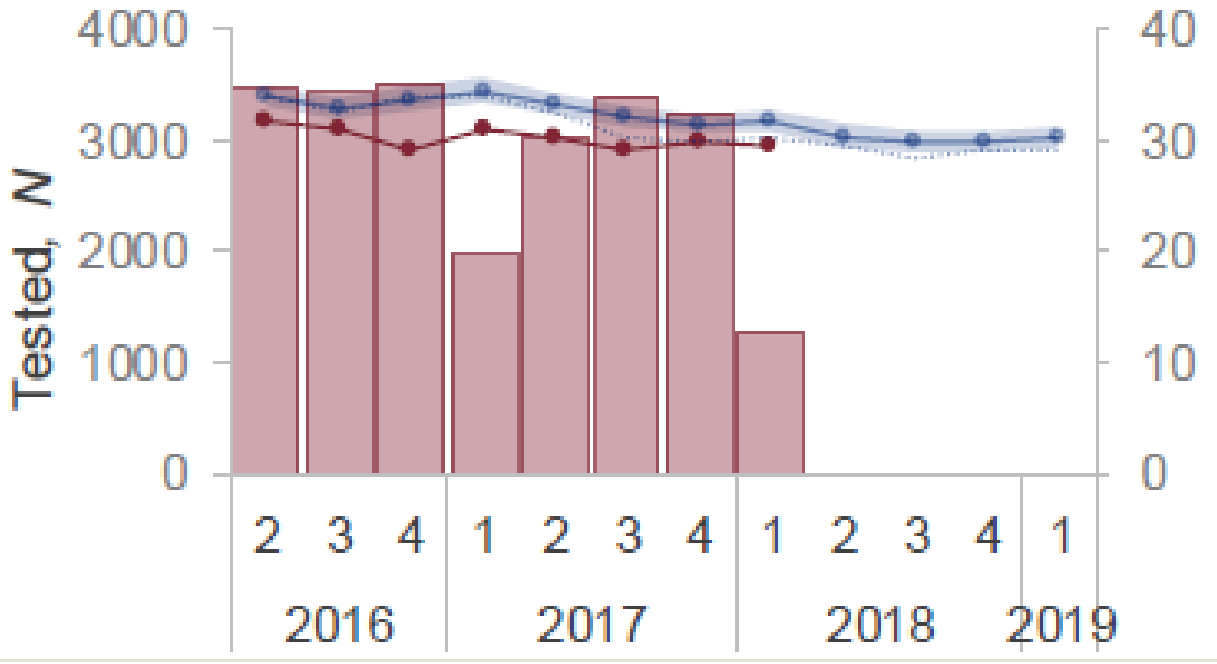
Treatment

- First Choice: Nitrofurantoin (if eGFR .45 ml/min) 50mg TDS for 3 days
- Second choice - Trimethoprim 200mg BD for 3 days.
- Second Choice *if no improvement of 1st choice after 48 hours or 1st choice not suitable+: Pivmecillinam (a penicillin) 400mg initial dose then 200mg TDS for 3 days OR Fosfomycin 3g single dose sachet

Nitrofurantoin resistance - Barnsley



Trimethoprim resistance –Barnsley



Antibiotic Prophylaxis

- Evidence in elderly is limited (trials not done in care home population)
- Cause as much harm as good! (oral and vaginal candida, GI upset)
- And the likelihood of antibiotic resistance increases
- Use for 3-6 months then stop and see what happens. Restart if necessary

Cranberry products

- National guidelines now recommend for prevention of recurrent infections but.....
- Evidence shows very small trend to UTI reduction over 12m
- Cranberries contain tannins which prevent adherence of bacteria to bladder wall
- Not available of prescription
- Capsules easier to take than juice
- Interaction with warfarin possible?

Reducing catheter associated UTI

- consider other options

-Ensure that the need for the catheter is reviewed frequently.

-Ensure that aseptic non-touch technique is followed during insertion, on-going care and management.

-Review patients with repeated history of blockage – refer to continence service

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Barnsley Hospital NHS

South West Yorkshire Partnership NHS Foundation Trust

BEST Meeting 18/09/19

1st dose IV antibiotics for simple cellulitis in the community by Crisis response

(formerly Rapid Response)

PROUD to care

Suitable for class 1 or 2 cellulitis.

- **Classification of cellulitis**
- **Class 1:** Patients have no sign of systemic toxicity, have no uncontrolled co-morbidity and can usually be managed with oral antimicrobials on an Outpatient basis.
- **Class 2:** Patients are either systemically ill or systemically well but with co-morbidity such as peripheral vascular disease, chronic venous insufficiency or morbid obesity which may complicate or delay resolution of their infection
- **Class 3:** Patients may have significant systemic upset such as acute, confusion, tachycardia, tachypnoea, and hypotension or may have unstable co-morbidities that may interfere with a response to therapy or have a limb threatening infection due to vascular compromise.
- **Class 4:** Patients have sepsis syndrome or severe life threatening infection such as necrotising fasciitis.

Referral method

- Phone the team on 07747794698 or 01226644008/9.
- Referral form can be left with the patient.
- A copy of the referral can be obtained from ; emma.smith142@nhs.net.

GP REFERRAL TO CRISIS RESPONSE FOR TREATMENT OF CELLULITIS WITH IV TEICOPLANIN

Refer by phone on 01226 644008/07747 794698. Leave referral with patient.

Name:	**NHS Number:**	**Date of Birth:**
Address:	**Allergy status:**	

Suitability for community administration of IV antibiotics to treat cellulitis (Class 1 and 2)

Exclusion criteria:	• Hypersensitivity to Teicoplanin • Pregnancy/lactation • Facial or perineal cellulitis • IV drug use	• Hepatic/renal disease (eGFR should be within 30-80 ml/minute/1.73 m2). If no recent bloods CRT can obtain on first visit • Neutropenia • Class 3 and 4 cellulitis • Likelihood of noncompliance/advanced dementia

If the patient has 2 or more signs of systemic sepsis:

- Temp >38 or <36°C
- Pulse >90/min
- RR >20
- Systolic BP <100

Or the patient has 1 or more of the following:

- WBC>14 or <4
- Severe lymphangitis, blistering or large affected area
- Immunosuppression
- Poorly controlled Diabetes
- Peripheral vascular disease

Then Hospital admission advised.

Checklist for referral to Crisis Response Team Cellulitis Pathway

Attendance with diagnosis of Cellulitis (Class 1 or 2)	Yes	No
Suitable for Outpatient Cellulitis Service	Yes	No
Accepted by Crisis Response Team	Yes	No
Consent documented in notes	Yes	No
Mark Cellulitic area with indelible pen, if deemed appropriate	Yes	No

GP PRESCRIPTION: please administer the following regime: obtain blood if non recent

	Drug	**Dose**	**Route**
Day 1	Teicoplanin	400mg 2 doses 12 hourly	IV bolus
Days 2-7	Teicoplanin	400mg 24 hourly	IV bolus

If no improvement or venous access proves problematic, please contact the practice to arrange a patient review

Prescribed by (Name and signature):	**Date:**

INFORMATION FOR PATIENTS UNDERGOING INTRAVENOUS (IV) THERAPY AT HOME BY THE CRISIS RESPONSE TEAM

Patient information and consent is to be found on the reverse of the referral sheet.

- The course of medication that you are having at home is the same as that started whilst in hospital or prescribed by your GP; no other IV medication will be given by our nurses
- The team may take blood samples requested by your GP, Hospital Consultant or the Consultant Microbiologist. As a result of this, the dose of medication may be adjusted
- Your medication will be given by a cannula, PICC line or skin tunnelled catheter. These devices are all tubes that allow the medication to be delivered directly into the blood stream
- If the skin around this device becomes sore, hot, red or swollen, inform the team as soon as possible
- The device will be covered with a dressing between our visits. Please avoid knocking the device or getting it wet or dirty
- If the cannula does accidentally get pulled out, this will not be harmful but you need to raise the arm and press a clean tissue over the area to stop any bleeding
- On occasions it may be necessary to replace the cannula; this will be done by the nurse visiting
- Some people have veins that are difficult to put a cannula into and occasionally patients have to return to hospital for this to be done
- While you are having your treatment we will leave an equipment box and sharps bin at your home
- The nurse will visit at the time required for your medication; however this may vary a little due to our workload and travel between visits

If you have any concerns you can contact the team 24/7 on **07747794698**

I consent to the administration of intravenous therapy by the Crisis Response Team	**Name**			
	NHS No		**Date of Birth:**	
	Date	**TO BE SCANNED ONTO PATIENT'S NOTES**		
	Signature			

-The team will visit each day to administer the treatment and monitor the patient.

-They will contact the practice if the cellulitis does not improve, deteriorates or venous access proves problematic.

- Thank you