The problem with UTIs

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How did we get to this

In July 2017 a CCG quality premium with an ambition to reduce healthcare associated Gram-negative blood stream infections (GNBSIs) by 50% by March 2021

With a focus on focus on *E. coli* (Escherichia coli) as a one of the largest GNBSIs infection groups.

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What were GYW numbers June 2017- March 2018 & YTD

NHS

	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	YTD
NHS BASILDON AND BRENTWOOD CCG	16	10	14	18	22	16	21	8	12	16	188
NHS BEDFORDSHIRE CCG	22	20	31	17	30	18	26	19	28	32	285
NHS CAMBRIDGESHIRE AND PETERBOROUGH CCG	47	54	53	53	49	46	38	49	38	49	557
NHS CASTLE POINT AND ROCHFORD CCG	13	11	10	13	16	16	11	17	9	9	146
NHS EAST AND NORTH HERTFORDSHIRE CCG	32	34	42	38	32	25	22	32	37	18	375
NHS GREAT YARMOUTH AND WAVENEY CCG	21	13	18	20	29	24	14	21	17	13	232
NHS HERTS VALLEYS CCG	27	38	31	37	19	36	37	25	38	46	385
NHS IPSWICH AND EAST SUFFOLK CCG	23	16	20	16	18	27	23	5	10	23	231
NHS LUTON CCG	14	7	14	11	13	9	9	10	8	10	122
NHS MID ESSEX CCG	19	17	27	18	24	21	19	19	25	13	233
NHS MILTON KEYNES CCG	11	24	19	21	9	9	14	11	11	11	173
NHS NORTH EAST ESSEX CCG	27	28	30	25	24	25	15	16	20	20	267
NHS NORTH NORFOLK CCG	13	10	12	15	15	17	10	5	9	9	130
NHS NORWICH CCG	12	9	7	19	8	9	13	5	7	11	113
NHS SOUTH NORFOLK CCG	14	10	11	10	11	21	12	13	12	8	150
NHS SOUTHEND CCG	13	14	9	15	16	10	11	13	14	12	143
NHS THURROCK CCG	4	10	10	16	12	9	10	6	11	14	118
NHS WEST ESSEX CCG	19	15	24	11	14	18	22	18	12	13	200
NHS WEST NORFOLK CCG	12	12	12	9	14	20	13	11	5	9	142
NHS WEST SUFFOLK	15	20	10	17	15	15	16	9	12	11	160
East of England Total	375	372	406	400	390	392	356	312	335	347	4350
England Total	3508	3730	3789	3535	3599	3447	3247	3225	2995	3291	41053

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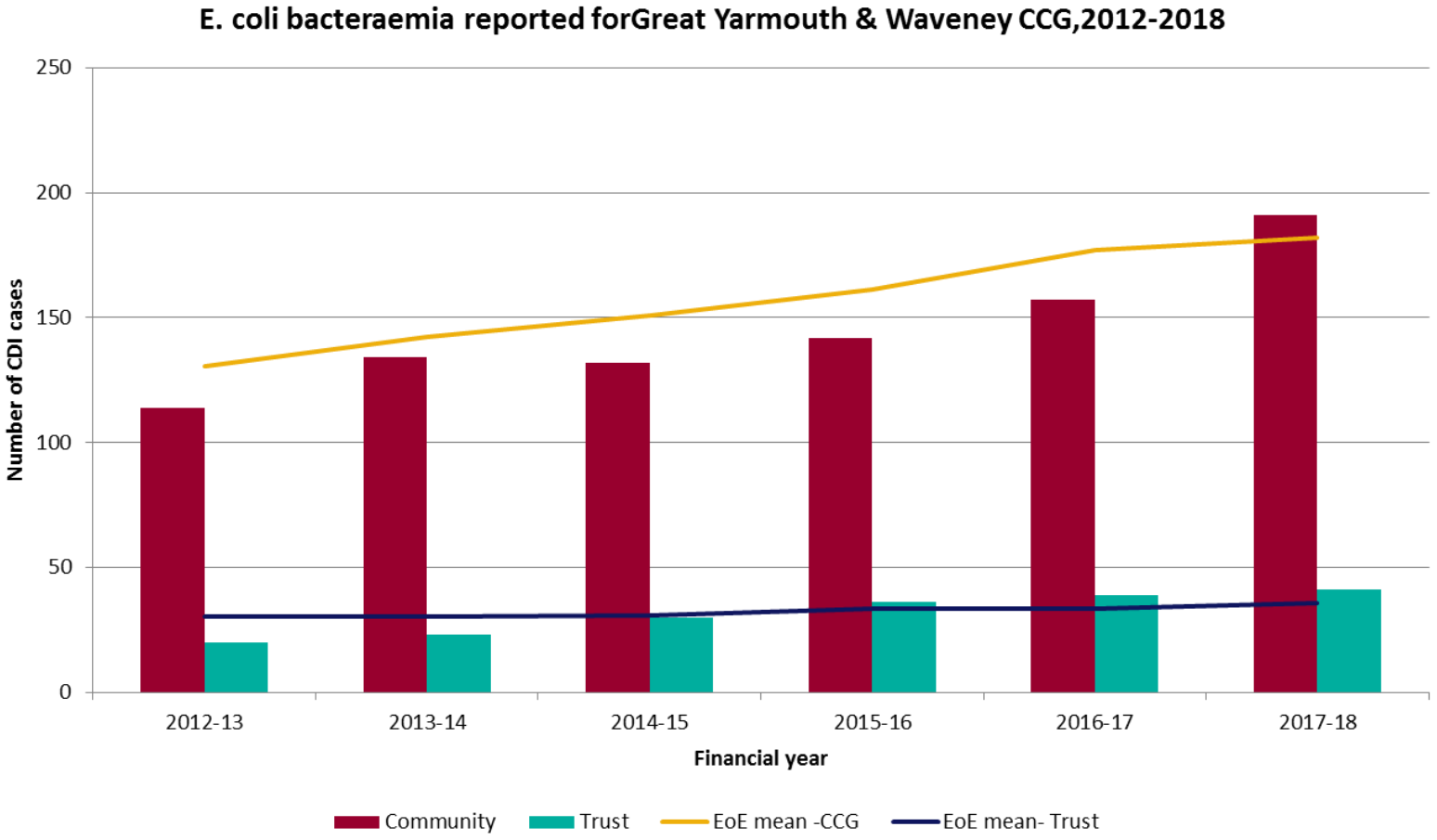
The rate per 100,000 in our population told a different story

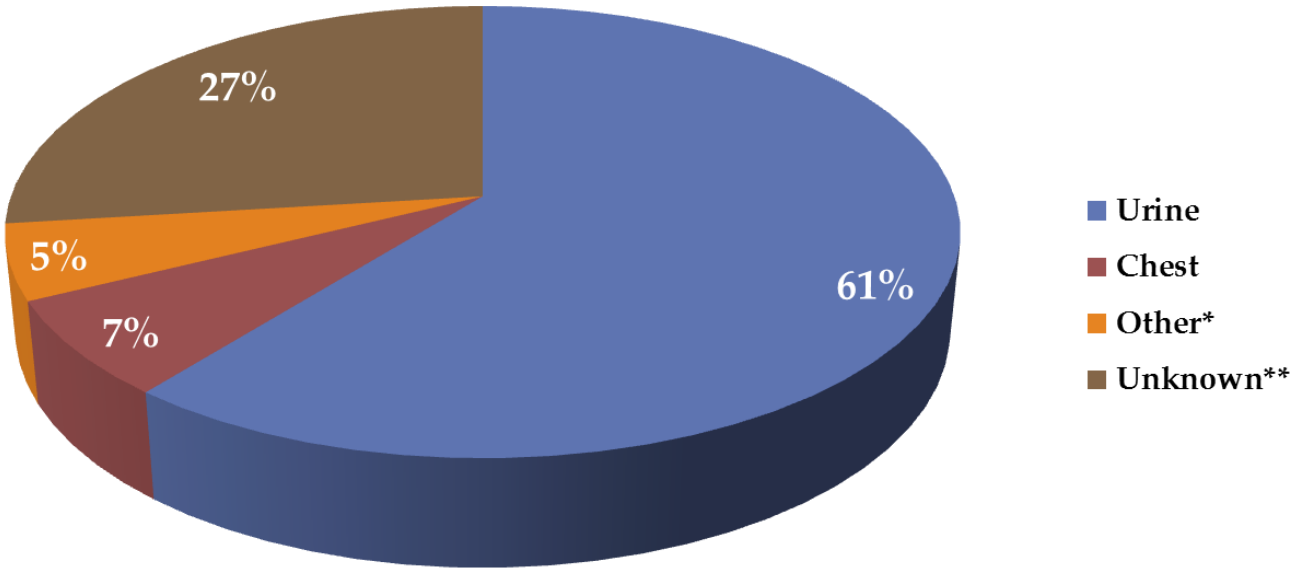
NHS

	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	YTD
NHS BASILDON AND BRENTWOOD CCG	6.16	3.85	5.77	7.31	8.47	6.16	8.08	3.08	4.62	6.16	**72.37**
NHS BEDFORDSHIRE CCG	4.91	4.47	6.92	3.80	6.70	4.02	5.81	4.24	6.25	7.15	**63.66**
NHS CAMBRIDGESHIRE & PETERBOROUGH CCG	5.31	6.10	5.99	5.99	5.54	5.20	4.30	5.54	4.30	5.54	**62.97**
NHS CASTLE POINT AND ROCHFORD CCG	7.41	6.27	5.70	7.41	9.12	9.12	6.27	9.69	5.13	5.13	**83.24**
NHS EAST AND NORTH HERTFORDSHIRE CCG	5.66	6.01	7.42	6.72	5.66	4.42	3.89	5.66	6.54	3.18	**66.29**
NHS GREAT YARMOUTH AND WAVENEY CCG	**9.74**	**6.03**	**8.35**	**9.27**	**13.45**	**11.13**	**6.49**	**9.74**	**7.88**	**6.03**	**107.57**
NHS HERTS VALLEYS CCG	4.73	6.42	5.24	6.25	3.21	6.08	6.25	4.22	6.42	7.77	**65.05**
NHS IPSWICH AND EAST SUFFOLK CCG	5.74	3.99	4.99	3.99	4.49	6.73	5.74	1.25	2.49	5.74	**57.61**
NHS LUTON CCG	6.46	3.23	6.46	5.07	6.00	4.15	4.15	4.61	3.69	4.61	**56.28**
NHS MID ESSEX CCG	4.89	4.38	6.95	4.63	6.18	5.41	4.89	4.89	6.44	3.35	**59.98**
NHS MILTON KEYNES CCG	4.07	8.87	7.02	7.76	3.33	3.33	5.18	4.07	4.07	4.07	**63.95**
NHS NORTH EAST ESSEX CCG	8.20	8.50	9.11	7.59	7.29	7.59	4.56	4.86	6.07	6.07	**81.10**
NHS NORTH NORFOLK CCG	7.56	5.82	6.98	8.73	8.73	9.89	5.82	2.91	5.24	5.24	**75.63**
NHS NORWICH CCG	5.54	4.15	3.23	8.76	3.69	4.15	6.00	2.31	3.23	5.07	**52.12**
NHS SOUTH NORFOLK CCG	6.09	4.35	4.78	4.35	4.78	9.13	5.22	5.65	5.22	3.48	**65.24**
NHS SOUTHEND CCG	7.25	7.81	5.02	8.37	8.93	5.58	6.14	7.25	7.81	6.70	**79.80**
NHS THURROCK CCG	2.39	5.99	5.99	9.58	7.18	5.39	5.99	3.59	6.59	8.38	**70.65**
NHS WEST ESSEX CCG	6.28	4.96	7.93	3.64	4.63	5.95	7.27	5.95	3.97	4.30	**66.11**
NHS WEST NORFOLK CCG	6.85	6.85	6.85	5.14	8.00	11.42	7.42	6.28	2.86	5.14	**81.10**
NHS WEST SUFFOLK	6.59	8.78	4.39	7.46	6.59	6.59	7.02	3.95	5.27	4.83	**70.24**
East of England Total	**5.84**	**5.80**	**6.31**	**6.23**	**6.08**	**6.09**	**5.55**	**4.86**	**5.22**	**5.41**	**67.79**
England Total	**6.35**	**6.75**	**6.84**	**6.39**	**6.51**	**6.18**	**5.85**	**5.84**	**5.42**	**5.95**	**74.28**

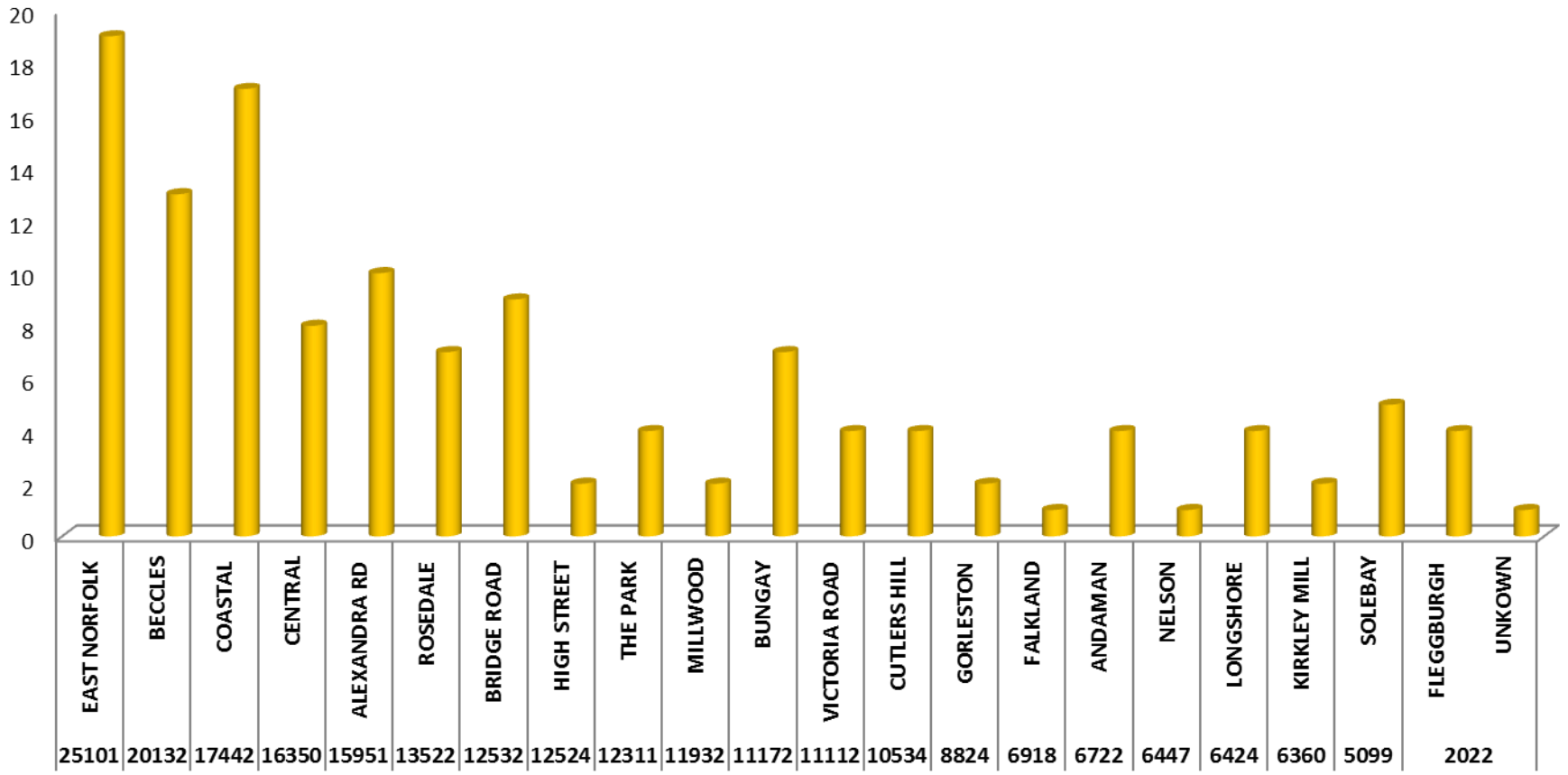
So where is the problem



So what was the probable cause of the BSI



Distribution of *E. coli* bacteraemia by GP Surgery



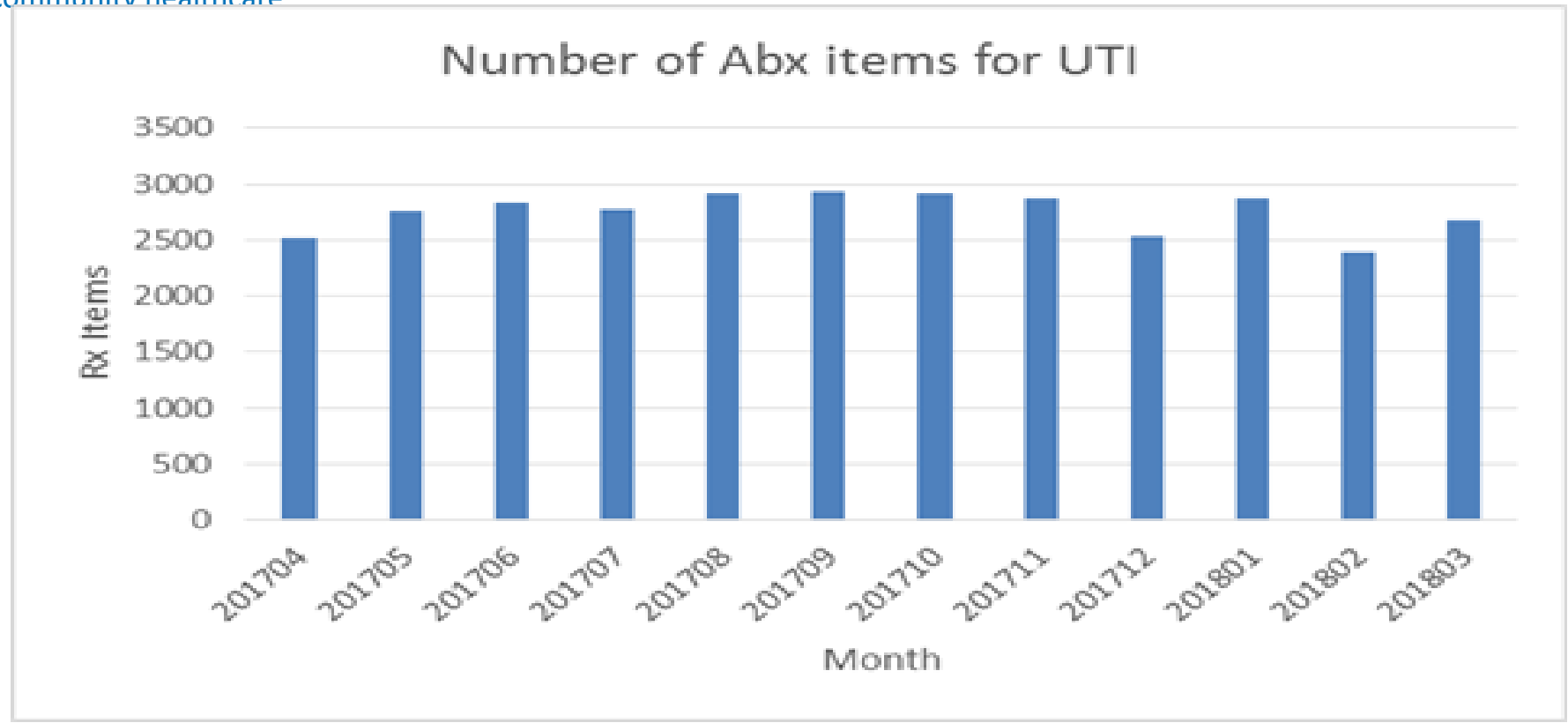
GP Practice list numbers(summer 2018) in descending order

Antibiotics given within 28 days of bacteraemia

Courses of antibiotics given within 28 days

Amoxicillin	17
Nitrofurantoin	13
Trimethoprim	13
Flucloxacillin	4
Metronidazole	3
Clarithromycin	2
Co Amoxiclav	2
Doxycycline	3
Ciprofloxacin	2
Cephalexin	2
Prophylaxis Penicillin	1
Co Trimoxazole	2

Antibiotic treatments



Assuming these were all for suspected UTIs

Nitrofurantoin	17791
Trimethoprim	15226
Total	33017

Dip testing for signs of a UTI

Never in a patient with a urinary catheter
Never in a patient over the age of 65

} PHE diagnosis guide for Primary care

THE RESULTS ARE NOT VALID!

This should now be standard good practice with NO exceptions

https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis

#ToDipOrNotToDip Resources NHS & free to use soon available in HEE resources

https://www.britishinfection.org/files/8214/8501/9193/To_Dip_Or_Not_To_Dip_Poster_PRESS.PDF

If it is appropriate to dip remember

If the patient is under 65 with clinical symptoms of a UTI

The gold standard method of testing is to remove a small volume of urine from the sterile container with a fresh sterile syringe, and then apply the removed urine to the dipstick. In this way, the remainder of the collected sample contents remains untouched by a potentially unsterile dipstick and so can be sent for laboratory analysis if required

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Urines for UTI

The “gold standard” for the diagnosis of urinary tract infection is culture, which requires 18-24 hours before a result is available. Microscopy or dipstick testing often provides preliminary information in appropriate patient groups, E.g. Dipstick testing is not suitable for Catheterised patients or those >65 years old.

Further information can be found at:

https://www.nice.org.uk/guidance/conditions-and-diseases/urological-conditions/urinary-tract-infection

Microbiology User handbook

Available on Knowledge Anglia

https://nww.knowledgeanglia.nhs.uk/LinkClick.aspx?fileticket=QK82m7AZJRk%3d&portalid=1

Or search for Microbiology User handbook

Latest version June 2018

Urine samples to the EPA laboratory

In the year 01/04/2017-31/03/2018 from GYW GP surgeries **25040** urine samples were sent of which **7737 31%** were positive culture of that **5460 70.56%** were *E. coli*…but were they?

If a sample is more that **2** hours old before it reaches a preservative it can grow *E. coli*

So think about the urine journey

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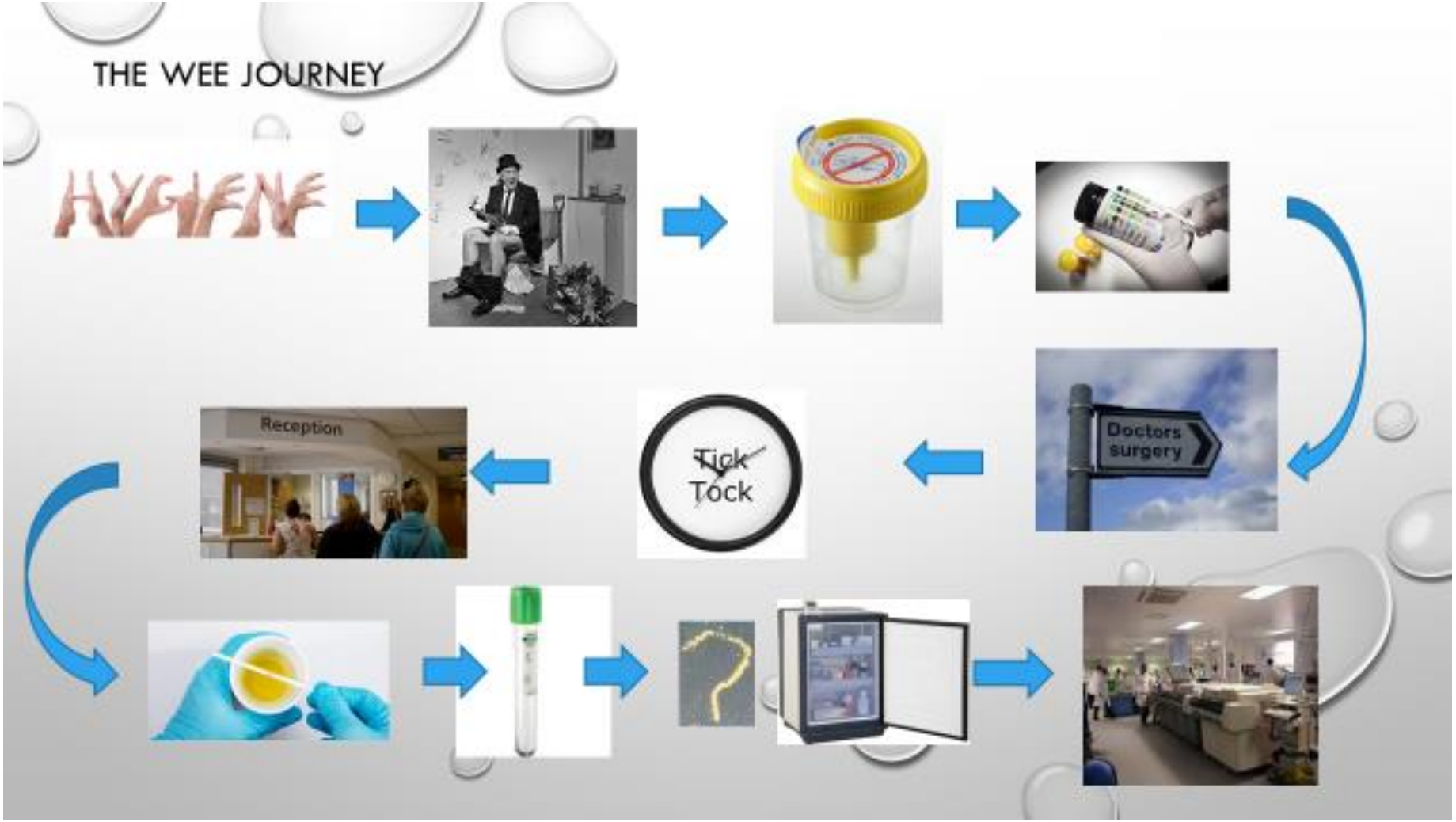
THE WEE JOURNEY



How many are being treated on ‘Dip tests’

- 33017 courses of either nitrofurantoin or trimethoprim
- 25040 samples sent to the laboratory of which only 31% were positive
- 7977 courses of antibiotics on symptoms or dip test

Preventing inappropriate antibiotic treatment

Only send samples for culture if the patient has clinical signs of a UTI. If they have asymptomatic bacteriuria, the dipstick will be positive and bacteria will grow on culture. Antibiotics may be started unnecessarily and inappropriately, which will do more harm that good, risking development of multi-resistant organisms which will require a hospital admission for further treatment of UTI, or precipitate a C. difficile infection

A solution to achieve a better quality sample and a more accurate result

Patient information –how to take an MSU

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Taking a Mid Stream Urine Specimen (MSU)

Reasonable Compassionate Flexible Approachable Professional Accountable Knowledgeable Collaborative Trustworthy Committed

Providing high quality care - every time

Produced by East Coast Community Healthcare
Infection, Prevention and Control Team
Issued: September 2018

The trial

In August 2018 we asked for GP surgeries to undertake a trial

4 responded

- The Beaches Medical Centre
- Beccles Medical Centre
- Bridge Road Surgery
- Cutlers Hill Surgery

The pack- we supplied all the components in an individual clear bag

- The leaflet
- A wipe- for the purposes of the trail we wanted the ‘gold standard’ to be applied
- Yellow bottle
- Green Bottle
- Feedback form

Feedback

Mostly positive from patients, although one person rang me to tell me it was a daft system and how could she possibly be expected to do all that ‘fiddly’ stuff with bottles, she did go on to say the instructions helped but why had she never been told how to do it in the past she just did a wee in the pot

Remember

If the transport run is more than 4 hours away, as long as it is in the boric acid in a temperature controlled dedicated specimen refrigerator (2-8°C) then the sample may be accepted by the laboratory

Boric acid extends viability to 96 Hrs

Roll out of the leaflet

Clearly for the trial we wanted a gold standard, so we supplied a wipe….
Going forward the leaflet now requests patients wash or use a wet wipe

The revised leaflet was sent out to all practices in November 2018
If you require a copy please contact ecch.infectionprevention@nhs.net

Where do we go from here?

1. Ensure the whole system adheres to the dip test ‘rules’ – not for the over 65s or with a urinary catheter
2. Improve the quality of our MSUs if not an MSU then a clean catch is selected on the specimen request
3. Follow the NICE recommendations for UTIs
4. Stop the cycle of dip test – antibiotic – MSU - another antibiotic
5. Patient education not all frequency is a sign of a UTI