

Supplementary figures

Supplementary 1. Survey on general practitioners' knowledge, attitudes, practice, and needs around UTI care.

Dear general practitioner, this questionnaire is about your opinion, knowledge, and attitudes on UTIs.

*Do not concern yourself with answering the questions in this questionnaire "correctly", but only with your **personal opinion**. This is very important to us!*

1. Please indicate the extent to which you agree with the following statements about the diagnosis and treatment of urinary tract infections.

	Completely disagree	Somewhat disagree	Neutral	Somewhat agree	Completely agree
If urine is handed in for symptoms not indicating a urinary tract infection, then I ignore the results of the urinalysis.	0	0	0	0	0
With the current dipstick at the out-of-hours center I can diagnose a urinary tract infection with sufficient certainty.	0	0	0	0	0
I am less likely to initiate a urine culture at the out-of-hours center than at the regular hours center because I do not have access to the patient's complete record.	0	0	0	0	0
I am less likely to initiate a urine culture at the out-of-hours center than at the regular hours center because I am unable to follow-up with the patient.	0	0	0	0	0
Point-of-care tests better than the current dipstick test are needed for diagnosing urinary symptoms.	0	0	0	0	0
Better point-of-care tests for urinary tract infections may help me to prescribe in a more targeted way.	0	0	0	0	0

Better point-of-care tests for urinary tract infections could save time in my daily work.	0	0	0	0	0
Physician assistants have sufficient knowledge on UTIs.	0	0	0	0	0
General practitioners have sufficient knowledge on UTIs.	0	0	0	0	0

2. In the list below, please indicate which **combination of 2 symptoms** make the diagnosis of **urinary tract infection most** likely in healthy women.:
Select 2 symptoms from this list:

- 0 Dysuria
- 0 Lower abdominal pain
- 0 Pollakisuria
- 0 Malodorous or turbid urine
- 0 Urge to urinate on empty bladder
- 0 Hematuria
- 0 Fever
- 0 Shivers
- 0 Absence of vaginal complaints

3. Statements about your handling of urinary tract infections:

	Never	Rarely	Sometimes	Often
When I diagnose a urinary tract infection in a healthy woman, I prescribe a delayed prescription.	0	0	0	0
I am less likely to order a urinary culture at the out-of-hours center .	0	0	0	0
I am more likely to prescribe an antibiotic to unknown patients at the out-of-hours center .	0	0	0	0
I refer patients with mictional complaints to www.thuisarts.nl .	0	0	0	0

4. For the following statements, could you indicate whether, in your opinion, they are true or false?

I am able to apply a urine culture at an out-of-hours center.

0 Correct 0 Incorrect 0 I don't know

A cystitis can resolve by drinking sufficiently and with the possible addition of painkillers.

0 Correct 0 Incorrect 0 I don't know

A urine culture is indicated in the case of a positive nitrite test in an elderly patient without micturition complaints.

0 Correct 0 Incorrect 0 I don't know

In patients with an indwelling catheter, changed odor or consistency of urine is a reason to perform diagnostics.

0 Correct 0 Incorrect 0 I don't know

In the case of non-specific complaints with a negative nitrite test, a UTI can be diagnosed with a positive leukocyte and erythrocyte test.

0 Correct 0 Incorrect 0 I don't know

At an out-of-hours center, a urine culture needs to be applied in patients with a positive nitrite test and signs of tissue invasion.

0 Correct 0 Incorrect 0 I don't know

At a regular hours center a urine culture needs to be applied in a patient with a positive nitrite test and signs of tissue invasion.

0 Correct 0 Incorrect 0 I don't know

At a regular hours clinic, a urine culture needs to be applied in a risk patient with a positive nitrite test.*

**(patients with kidney or urinary tract abnormalities, bladder function disorders, men, children <12y/o, and pregnant women)*

0 Correct 0 Incorrect 0 I don't know

At an out-of-hours center a urine culture needs to be applied in a risk patient with a positive nitrite test.*

**(patients with kidney or urinary tract abnormalities, bladder function disorders, men, children <12y/o, and pregnant women)*

0 Correct 0 Incorrect 0 I don't know

5. If a new diagnostic test for urinary tract infections were to be developed, what would be the most important requirements according to you?

Please prioritize by numbering 1 to 5, 1 indicating most important and 5 indicating least important. You can use each number only once.

- ☐ Ease of use for the physician/physician assistant
- ☐ Limiting patient discomfort
- ☐ Time-to-result
- ☐ Diagnostic accuracy
- ☐ Cost

6. In case of a suspected UTI at the out-of-hours center, which factors are most important for forming your decision to prescribe antibiotics?

Please prioritize by numbering 1 to 4, 1 indicating most important and 4 indicating least important. You can use each number only once.

- ☐ Symptom recognition by patient
- ☐ Symptom recognition by physician
- ☐ Patient expectation
- ☐ Positive urine culture

7. With which expectations do you think patients most often consult a physician when suspecting a UTI?

Please prioritize by numbering 1 to 5, 1 indicating most important and 5 indicating least important. You can use each number only once.

- ☐ Obtaining a diagnosis
- ☐ Obtaining reassurance
- ☐ Obtaining an antibiotic prescription
- ☐ Obtaining additional examination
- ☐ Obtaining symptom relief

8. Name one aspect of UTI care that you feel could be improved.
Enter the most important aspect here, or leave the question unanswered if you feel the care cannot be improved:.

Finally, a few brief questions about your background.

9. What is your age?
10. Wat is your gender?
11. What is your work situation?
- Practice owner
 - Locum
 - General practitioner in training
 - General practitioner and researcher in training
12. How many years of working experience as a general practitioner do you have?
13. On average, how many days per week do you work at a regular or out-of-hours center?
14. On average, how many shifts do you work at an out-of-hours center per year?
15. In which region do you currently spend most of your time working as a general practitioner?

If you have any other comments please post them here:

Thank you for your cooperation!

Supplementary 2. General practitioners’ knowledge about UTI care

Statement	Correct n (%)	Incorrect n (%)	Didn't know n (%)
The use of urinary culture			
I am able to apply a urine culture at an out-of-hours center	176 (92.6)	9 (4.7)	5 (2.6)
At a regular hours clinic, a urine culture needs to be applied in a risk patient with a positive nitrite test	177 (93.2)	12 (6.3)	1 (0.5)
At an out-of-hours center a urine culture needs to be applied in a risk patient with a positive nitrite test	159 (83.7)	27 (14.2)	4 (2.1)
At a regular hours center a urine culture needs to be applied in a patient with a positive nitrite test and signs of tissue invasion	151 (79.5)	35 (18.4)	4 (2.1)
At an out-of-hours center, a urine culture needs to be applied in patients with a positive nitrite test and signs of tissue invasion	131 (68.9)	48 (25.3)	11 (5.8)
UTI in elderly patients			
A urine culture is indicated in the case of a positive nitrite test in an elderly patient without micturition complaints	109 (57.4)	61 (32.1)	20 (10.5)
In patients with an indwelling catheter, changed odor or consistency of urine is a reason to perform diagnostics	144 (75.8)	33 (17.4)	13 (6.8)

Uncomplicated UTI			
In the case of non-specific complaints with a negative nitrite test, a UTI can be diagnosed with a positive leukocyte and erythrocyte test.	135 (71.1)	47 (24.7)	8 (4.2)
A cystitis can resolve by drinking sufficiently and with the possible addition of painkillers	184 (96.8)	4 (2.1)	2 (1.1)

Supplementary 3. GPs' opinions about UTI care

Statement	Agree n (%)	Neutral n (%)	Disagree n (%)
Knowledge			
General practitioners have enough knowledge in regards to urinary tract infections.	144 (75.8)	26 (13.7)	20 (10.5)
Doctors' assistants have enough knowledge in regards to urinary tract infections.	105 (55.3)	38 (20.0)	47 (24.7)
Point-of-care tests			
Better point of care tests will be able to aid me to prescribe antibiotics more accurately.	138 (72.6)	21 (11.1)	31 (16.3)
Better point of care tests will be able to save time during my daily work in the management of urinary tract infections.	114 (60.0)	40 (21.1)	36 (18.9)
With the current dipstick test at an out of hours center, I will be able to diagnose an urinary tract infection with enough certainty.	103 (54.2)	25 (13.2)	62 (32.6)
Better point of care tests, other than the current dipstick, are needed for urinary tract infections.	103 (54.2)	39 (20.5)	48 (25.3)
I disregard the result of a urinalysis when an urine sample is submitted with symptoms that are not fitting a urinary tract infection.	47 (24.7)	19 (10.0)	124 (65.3)
Urinary culture			
At an out-of-hours center, I'm less likely to submit a urine culture compared to the regular hours center because I do not have access to the full medical file.	72 (37.9)	13 (6.8)	105 (55.3)
At an out-of-hours center, I'm less likely to submit a urine culture compared to the regular hours center because I'm unable to follow up on the patient.	53 (27.9)	12 (6.3)	125 (65.8)