

# Diagnostic stewardship in practice – optimising urine testing



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## The problem

- ❖ At least one-third of all diagnostic tests are estimated to provide no clinical benefit
- ❖ Inappropriate antibiotic therapy contributes to antimicrobial resistance and adverse patient events

## Assessment of problem

- ❖ Reducing unnecessary testing of microbiology samples may lead to a reduction in inappropriate prescribing of antibiotics
- ❖ The presence of bacteria in the urine may indicate urinary tract infection (UTI); however many patients with asymptomatic bacteriuria (ASB) do not require antibiotics
- ❖ Many urines are sent for culture in asymptomatic individuals due to positive dipstick testing when screening for chronic disease

## Strategy

Urine algorithm launched on electronic test system in 2015 (Figure 1)

Meetings arranged with primary care providers

## Concerns identified

Conflicting guidelines, Haematuria / proteinuria, Catheters

Meetings arranged with urologists, renal physicians, biochemists, specialist nurses

Guidance issued on assessing for renal and urological disease, UTI and catheter management

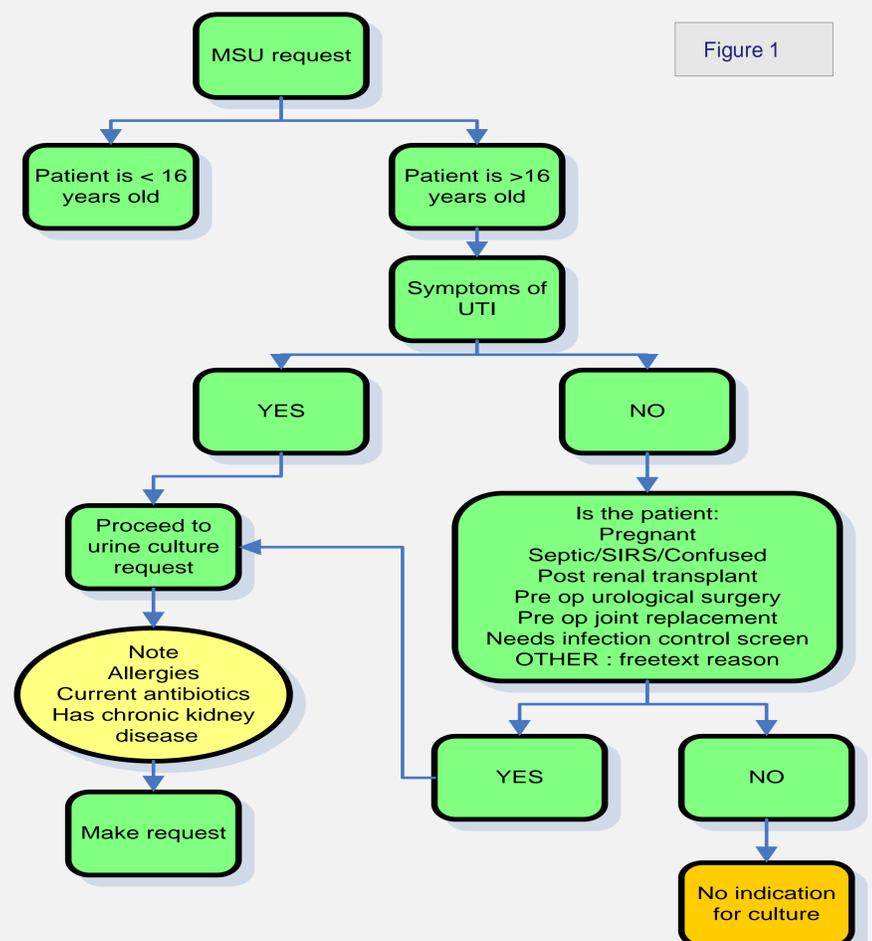


Figure 1

## Results

- ❖ The number of urines per year in the target population (>16 yo) showed a reduction from 85819 (5 year mean) to 73567 in 2017 (absolute reduction 12252, 14.3%) (Figure 2)
- ❖ In the whole population, the percentage decrease was similar at 14.4%
- ❖ 5639 (9.67%) less urines were received from general practice
- ❖ A comparison of the number of urines received per month by chi-squared test showed a statistically significant reduction
- ❖ There was an increase in the number of urines reported with significant growth (29.9 % vs 24.4%) which may be due to better patient selection or changes in laboratory procedures.

\*Other- secondary care and unspecified source

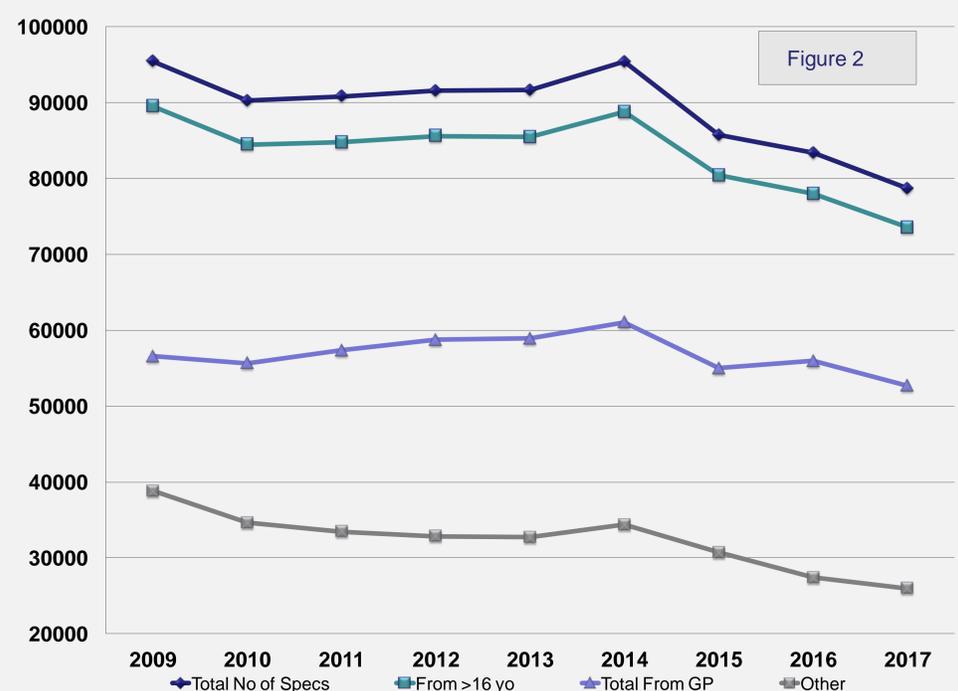


Figure 2

## Discussion

- ❖ By adopting a multidisciplinary approach in Tayside, we were able to address concerns from primary care and produce recommendations for haematuria and proteinuria testing and management and catheter management, while reducing unnecessary urine culture
- ❖ We have seen a sustained reduction in microbiology testing of urine samples over the last 3 years
- ❖ Other interventions have also been introduced in Tayside cottage hospitals (2015) and care homes (2017) by the antimicrobial stewardship team; as such the attributable effect of each intervention is hard to quantify