

7. GP Liaison Services. Case 4: UTI pathway improvement. <https://www.gp-liaison.com/case-studies> (accessed 10 Mar 2022).
8. Llor C. Mid-stream vs. first-void urine sample. [Letter]. *Br J Gen Pract* 2022; <https://bjgp.org/content/early/2022/01/24/BJGP.2021.0359/tab-e-letters> (accessed 10 Mar 2022).
9. National Institute for Health and Care Excellence. *Peezy Midstream for urine collection. MedTech Innovation Briefing, MIB183*. 2019. <https://www.nice.org.uk/advice/mib183/chapter/The-technology> (accessed 10 Mar 2022).

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### Author response

We thank Dr Forte for his comments on our findings. Our randomised, controlled clinical trial reported on the use of two urine collection devices in women presenting to primary care with symptoms attributable to urinary tract infection (UTI). Frequency is a cardinal symptom of acute UTI. Requiring these women to have a full bladder before using such devices is not feasible, nor is it easy to objectively confirm.

Our participants were only eligible for inclusion if they felt able to produce a urine sample at the time of randomisation. As such, the use of urine collection devices in our pragmatic study is likely to be similar to how the devices might be used by women with UTI symptoms who consult in routine general practice. We made no claim that our findings apply to use in the populations that Dr Forte refers to, such as asymptomatic pregnant women and in preoperative assessment.

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## Midstream versus first-void urine samples

In general practice, simple practices should be endorsed to avoid overcomplicating patient management. We have always been told to recommend the use of midstream samples when collecting a specimen of urine for culture, with or without previous cleansing and with or without soap or disinfectants. Notwithstanding, usage of these instructions is variable across practices and across countries. In addition, a midstream urine sample is not always easy to collect, mainly among older patients, let alone when patients are instructed to use external devices as recently analysed by Hayward *et al*.<sup>1</sup>

It is no wonder that a high number of patients failed to accomplish the proper use of these devices. The results were expected and the use of two devices did not reduce the number of contaminated samples when compared with the classical procedure of recommending a midstream urine collection. The need to collect a midstream urine clean-catch sample has also been controversial.<sup>2</sup> Only Eley *et al* found a significantly lower number of contaminations among emergency department female patients when they were provided with illustrated instructions about how to collect a proper midstream urine sample compared with those who only received verbal instructions.<sup>3</sup> Other studies, however, failed to show a benefit from cleansing prior to sample collection.

We certainly do not know how patients collect the urine samples despite being instructed to perform midstream urine sample collection. No studies have compared first-void or random sampling with midstream urine specimens with urine culture, which is the gold standard. This is the most important question. With the use of paired samples, Hølmkjær *et al* compared both sampling techniques and found a slightly lower number of contaminations with the use of a midstream urine collection, but urine culture was not used as the gold standard for the two sampling groups, except in those who collected midstream urine specimens.<sup>4</sup> To our knowledge, no study has compared the highly recommended midstream urine

collection with a first-void urine sample or letting patients with symptoms of urinary tract infection collect the sample as they please. This type of study has yet to be done.

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### REFERENCES

1. Hayward G, Mort S, Yu L-M, *et al*. Urine collection devices to reduce contamination in urine samples for diagnosis of uncomplicated UTI: a single-blind randomised controlled trial in primary care. *Br J Gen Pract* 2022; DOI: <https://doi.org/10.3399/BJGP.2021.0359>.
2. Holm A, Aabenhus R. Urine sampling techniques in symptomatic primary-care patients: a diagnostic accuracy review. *BMC Fam Pract* 2016; **17**: 72.
3. Eley R, Judge C, Knight L, *et al*. Illustrations reduce contamination of midstream urine samples in the emergency department. *J Clin Pathol* 2016; **69**(10): 921–925.
4. Hølmkjær P, Lars B, Marjukka M, *et al*. Sampling of urine for diagnosing urinary tract infection in general practice: first-void or mid-stream urine? *Scand J Prim Health Care* 2019; **37**(1): 113–119.

DOI: <https://doi.org/10.3399/bjgp22X718937>

### Corrections

Mary Morrissey, Elizabeth Shepherd, Emma Kinley, *et al*. Effectiveness and perceptions of using templates in long-term condition reviews: a systematic synthesis of quantitative and qualitative studies. *Br J Gen Pract* 2021; DOI: <https://doi.org/10.3399/BJGP.2020.0963>. Because of a production error, the wrong figure was displayed for Figure 1. The correct figure is a PRISMA flow diagram. We apologise for this error. The online version has been corrected.

DOI: <https://doi.org/10.3399/bjgp22X718949>

Clare Macdonald, Sunita Sharma, Maija Kalliainen and David Jewell. Postnatal care: new NICE guideline for the 'Cinderella service'. *Br J Gen Pract* 2021; DOI: <https://doi.org/10.3399/bjgp21X716825>. Because of an editorial error, some members of the NICE postnatal care guideline committee were omitted from the acknowledgements. We apologise for this error. The online version has been corrected.

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