UNNECESSARY REPLICATE MICROBIOLOGY DIAGNOSTICS IN PRIMARY AND SECONDARY CARE

A MAJOR PROBLEM?

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Introduction

Policy makers often state that a substantial part of diagnostic testing is unnecessarily repeated. This could result from:

- Multiple diagnostic service providers in a region
- Limitations in test result visibility to different healthcare professionals in referral situations

To assess the degree to which replicate tests are requested, data from our regional laboratory, serving both primary and secondary care, were analysed.

Methods

PAMM medical microbiology testing requests for four hospitals and >450 general practitioners in the Eindhoven region, the Netherlands, were analysed.

Replicate testing requests over a two year period were evaluated for:

Top three tests in a primary care setting

- general bacterial culture on urine >15000/yr
- STI diagnostics >8000/yr
- faecal diagnostics >7000/yr

Top three tests in a secondary care setting

- general bacterial culture on urine >20000/yr
- hepatitis B >4000/yr
- faecal diagnostics >4000/yr

Repeated testing was defined as a request for the same test on the same material for the same patient, within 1 week; or for STI or hepatitis testing, within 4 weeks of the initial test request.

Results

Test	% repeats in primary care	% repeats in secondary care
general bacterial culture on urine	0.9%	1.5%
STI diagnostics	1.4%	0.3%
faecal diagnostics	0.2%	0.3%

Table 1: Repeated tests for tests initially performed in primary care.

We find that diagnostic repeats occur much less often than frequently implied, see **Tables 1** and **2**. In primary care, the percentage of repeat tests is also limited by the referral rate to secondary care (300 referrals per 1000 registered patients per year). But also within primary care, repeat testing rates are low.

Repeat testing rates are also low in secondary care. In fact, some double testing is warranted, e.g. bacterial culturing of urine can be performed for two nephrostomy catheters.

Test	% repeats in secondary care
general bacterial culture on urine	6.5%
hepatitis B	1.6%
faecal diagnostics	1.5%

Table 2: Repeated tests for tests initially performed in secondary care.

The definition of the time span within which a repeat test counts as an unnecessary repeat is hard to define, and certainly test dependent. See *Fonville et al.*[1] for two examples where repeat testing within the time frames used in our analyses was warranted.

Conclusions

- Reducing unnecessary repeated testing would reduce healthcare costs. However, regulations obstruct the sharing of test results with other healthcare providers. Since there are no proactive interventions on repeat diagnostic requests, we were able to perform a baseline assessment of repeated testing requests.
- The percentages, while not zero and thus necessitating improvement and interventions, indicate that there is only a minor gain to be obtained in health economic terms: repeat testing accounts only for a small percentage from the total budget for microbiological diagnostics.

[1]*Fonville JM, et al.* **Overbodige dubbeldiagnostiek ver te zoeken**, Medisch contact (2018).

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