

Educational implications of changing the guidelines for the digital rectal examination

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The physical examination is a dying art. One of the most intimate physical examination maneuvers is the digital rectal examination (DRE). Most commonly, the DRE is used in the urologic setting to optimally access the prostate by palpation through the rectum. However, there are other indications for the DRE, including examination of gastrointestinal masses or bleeding, and even for reverting a patient out of an unstable atrial fibrillation.^{1,2} Medical students are taught in their preclerkship curriculum how to perform a successful rectal examination on both standardized patients and models. Once in family medicine residency, there is limited additional educational exposure.

In family medicine, the DRE was once a maneuver that almost every male patient would undergo yearly as part of the historical annual physical examination.³ These days the DRE is no longer routine in periodic health examinations. As of 2014, the Canadian Task Force on Preventive Health Care no longer recommends screening with DRE in the general population.⁴ After the Canadian Task Force reviewed the literature that discussed the risks and benefits of performing the DRE, they decided the risk of false-positive results outweighed the benefits of discovering more prostate cancers. False-positive results could lead to patient anxiety, needless biopsies, and unnecessary surgeries, with potential complications such as urinary incontinence and erectile dysfunction.⁴

Since the change in the guidelines, a whole generation of family medicine residents has gone through residency and into practice with minimal exposure to the maneuver. The current generation of family doctors is therefore not being exposed to normal variations of prostate anatomy. Not to mention, the DRE is an intimate examination skill that requires a certain comfort level and aptitude on the part of the health care professional. No patient wants an unnecessary invasive test performed on them in a sensitive area like the rectum. Patients will consent to the examination when they believe the benefits of the test outweigh the discomfort, which happens when those performing the examination are confident in their skill and in detecting positive and negative findings.⁵ As screening guidelines change, there are sometimes unintended side effects, as seen in the reduction of sexually transmitted infection screening in eligible women with the change in Papanicolaou test frequency.^{6,7} Our concern is that, owing to changing guidelines and subsequent lack of exposure in residents, the clinical aptitude of performing this examination is falling below standards.

Although controversial, when used judiciously the DRE can be an important physical examination maneuver that family medicine residents should be proficient in. Potential applications of the DRE span the fields of family medicine, urology, gastroenterology, and trauma care. Studies assessing the usefulness and effectiveness of the DRE as a clinical tool have suggested that the DRE, across its range of potential uses, is not an ideal test. Accuracy of the test is heavily dependent on provider skill, which can be variable owing to the low frequency of administering the test in addition to the lack of DRE training and exposure during medical training.^{8,9}

Evidence for an important clinical skill

The screening uses of the DRE have been largely discussed with respect to prostate cancer and anorectal cancer. A systematic review and meta-analysis conducted in 2018 by Naji and coauthors found that the DRE had both a poor positive predictive value (41%) and a poor sensitivity (51%) in detecting prostate cancer.¹⁰ The study recommended avoiding routine use of the DRE to screen for prostate cancer.¹⁰ The DRE has exhibited a specificity of 28% for detecting anal sphincter defects within the context of assessing fecal incontinence and rectal tone in emergency medical situations.¹¹ It has been shown to be unreliable to detect urethral injury in patients presenting for acute care with pelvic fracture, with a sensitivity of 2%.¹² Digital rectal examination also has limited value in the clinical diagnosis of cauda equina syndrome.¹³

However, the DRE is routinely performed and is clinically useful as a diagnostic tool for evaluation of lower urinary tract symptoms in male patients.¹⁴ One community study conducted in Japan found the positive predictive value of the ability of the DRE to differentiate between 5 categories of prostate volume—flat, normal, slightly enlarged, moderately enlarged, and markedly enlarged—was 94%.¹⁵ Similarly, using a standardized “fingertip” scale of prostate size, Reis et al found the positive predictive value of identifying a prostate volume above 30 mL to be 92%.¹⁶ The digital anorectal examination has been suggested as a useful and cost-effective method to detect anorectal cancer in high-risk populations.^{17,18}

The DRE has also been shown to have a sensitivity of 75% and a positive predictive value of 97% in detecting dyssynergic defecation in patients with chronic constipation.¹⁹ In acute care settings, the DRE has been shown to reduce inappropriate hospital admissions, medical therapy, and endoscopies in those presenting with acute rectal bleeding.¹ Within the field of obstetrics and

gynecology, the DRE might support the detection and evaluation of rectovaginal septal defects in women with posterior compartment prolapse.²⁰

A small meta-analysis in a Korean population compared the DRE, transrectal ultrasound, and prostate-specific antigen level greater than 4 µg/L in the diagnosis of clinically suspected prostate cancer. Positive DRE findings with negative transrectal ultrasound findings and a prostate-specific antigen level of 4 µg/L or less had a detection rate of 4%. When results of any 2 tests were positive, the detection rate increased to between 16% and 34%. If results of all 3 tests were positive, the detection rate increased further to 68%.²¹ In summary, although the value of the DRE in many settings is low, the DRE is still an important clinical skill to be learned and its usefulness increases when used in conjunction with other available diagnostic tools.

Practice needed for competence and confidence

In our current competency-based educational design, family medicine residents need supervised practice and need to practise performing the examination to prove their competence. One-third of family medicine residents might not be getting supervision or feedback on performing the DRE.⁹ With patient consent, residents should capitalize on opportunities to have the DRE observed by preceptors and to compare findings with them for meaningful in-the-moment feedback. Without feedback, trainees are missing out on an opportunity to improve aptitude in picking up diagnostic findings.⁹ Medical schools should invest in high-fidelity models, preferably standardized patients, so that skills are gained early on. Practitioners who have been exposed to 3-dimensional prostate models are more accurately able to estimate prostate morphology.²² Family medicine residents could be exposed to outpatient urology rotations to receive an abundance of clinical exposure to the DRE with a range of underlying disease or abnormality.

To fill this learning gap, we do not recommend doing DREs when they are not indicated. The Choosing Wisely

Canada medical education list recommends not ordering tests or performing procedures for the sole purpose of gaining clinical experience.²³ This would be an inappropriate use of the DRE, which can be classified as an invasive procedure. The DRE should only be used when clinically indicated and when the patient has given appropriate consent. Teaching methods can be reinforced with evaluation instruments. One example of such an instrument is the Digital Rectal Examination Clinical Tool created by Clements et al, which has been validated with preclinical and clinical trainee cohorts at the University of Virginia in Charlottesville.²⁴ Different teaching methods for the DRE are highlighted in **Table 1**.

Family medicine residents might not be getting enough exposure to the DRE. In 2014, Bussi eres et al sent a link to an online survey to 879 family medicine residents in all 4 family medicine residency programs in Quebec. A total of 217 family medicine residents (25%) responded with their perspectives on their DRE training. More than half of the residents (55%) considered their training in DRE to be average or insufficient. One-third (33%) reported having never received formal teaching or supervision during their medical training.⁹ Over the course of undergraduate and postgraduate medical training, exposure to the DRE technique can vary substantially. Learners might have difficulty obtaining consent from patients to practise the procedure, in part owing to patient refusal, but also owing to the comfort level of the learner. Further, preceptors might express a similar discomfort in having the learner practise the technical skills of the DRE on patients in their direct care. Lack of trainee exposure to the DRE procedure is important, as increased frequency of performing a DRE has been linked to students' increased confidence in performance.²⁵

Recommendations

The issues with DRE training can be abstracted to represent a broader issue—what to do with low-usefulness procedures that capture low-prevalence diseases; procedures whose function is reserved for unique situations. The DRE has evidence-based usefulness in specific

Table 1. Teaching methods for learning the DRE, in order from least to most engaging

METHOD	DESCRIPTION
Didactic lectures	Learners are taught in a lecture setting step by step how to perform the procedure
Low-fidelity models	Low-fidelity models, like mannequins, can mitigate trainee self-inhibition and improve skill acquisition
High-fidelity models	High-fidelity models, such as standardized patients, can verbally guide trainees to finding anatomic and pathologic structures
Guided clinical exposure	Embedded clinical exposure in a patient population that has a high prevalence of relevant disease. As a resident, learning the DRE can be incorporated into relevant clinical care. Patients might be more comfortable giving consent to a trainee to practise the procedure given their disease or health status. Trainees can compare findings with expert staff preceptors to ensure they are assessing the anatomy and potential underlying disease correctly. One setting for high-volume clinical exposure to the DRE for family medicine residents could be a urology rotation

DRE=digital rectal examination.

clinical diagnostic settings such as evaluation of lower urinary tract symptoms in male patients. The Canadian Urological Association guidelines have the DRE as part of the workup for these symptoms, which affect 28% of men older than 70 years of age.^{26,27} Without proficiency in this examination maneuver, family medicine residents could fail to effectively evaluate one of the more common issues that these older men face. In the process of shared decision making for potential DRE indications, clinician discomfort with performing the procedure should not be a factor biasing a decision as to whether to perform a DRE. Less exposure to the physical examination skill can result in poorer ability to appropriately obtain consent from patients to do the procedure when required. Moreover, ensuring that medical students and residents can adequately perform and get feedback on the DRE reinforces a competency-based framework for medical education. Medical schools should thus adapt to changing guidelines through modifying educational exposure and investment in resources for competency acquisition of this rarely used but important clinical examination. ✨

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Competing interests

None declared

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