Stratégies de réduction des commandes d'analyses de laboratoire inutiles

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(Note de la rédaction : Les éléments de la section scientifique sont publiés dans la langue d'origine telle que soumise par les auteurs.)

Health care costs are on the rise, particularly with respect to laboratory testing. Our population is ageing and people have access to more information than they ever have before. Both these factors will contribute to increased demands for laboratory tests as older people tend to require more care and the better informed patients will put more pressure on their doctors to order tests that may not necessarily be needed.

Automation and the centralization of laboratory services have produced significant savings for laboratory operators. It may still be possible to squeeze more cost savings from these strategies, however there is a limit to how low per unit costs of laboratory tests can go. Even as unit costs of laboratory tests decline, an increase in test volumes can quickly eliminate any savings realized. Fortunately, there are many strategies that have proven to be effective at reducing costs by persuading physicians to order fewer tests when they are not clinically indicated. Interventions that reduce the volume of laboratory tests performed can benefit patients through reduced phlebotomy and allow for the redeployment of laboratory and physician resources to other areas[1]. This article describes interventions that have proven to be successful at curbing laboratory utilization. The strategies presented in this article have been sorted using an adaptation of the Precede Proceed framework originally developed by Green et al and modified by Solomon[2]. This framework classifies interventions as predisposing, enabling or reinforcing.

Predisposing interventions aim to influence doctors by providing them with information before test ordering occurs.

EXAMPLES

1. At the time of order entry a message gives doctors information about the cost of laboratory tests[3-5] or ordering guidelines for the test[6,7].
2. Doctors are provided with educational materials such as pamphlets about appropriate use of tests[8] or costs of tests[3,8,9].
3. Mentorship programs for junior doctors[10].
4. Provide doctors with a quiz on test ordering, mark and return the tests[11].
5. Educate doctors with lectures about proper test use or clinical guidelines for ordering a test[7,12-15].

ADVANTAGES

Predisposing interventions can be tailored to get specific information across to doctors; they are highly visible and therefore encourage doctors to think about their test ordering behaviour. There is also evidence to suggest that using such an intervention on doctors early in their careers can cause them to be more conscientious in their test ordering in the future[16].

DISADVANTAGES

Few studies performed long-term observation of test ordering

patterns. Studies that did perform long term observations found that reductions in test ordering were lost over time unless fresh interventions were mounted[1,17,18]. Predisposing strategies are also fairly costly since education must be developed and administered actively to physicians and the physicians must take time to attend lectures and absorb the information they are given. For studies that rely on giving doctors information, there is a risk that information overload will cause interventions to be less successful[6], likewise doctors may get frustrated with constant information bombardment[19].

Enabling factors are skills, resources, or structural barriers that facilitate or prevent behaviour[2]. Interventions that utilize enabling strategies usually make it more difficult for doctors to order tests.

EXAMPLES

1. Reduce the number of tests listed on requisitions or restructure requisitions to promote favourable test ordering[19–25].
2. Replace test panels with the individual component tests[10,16,19,23,24].
3. Limit ability to re-order tests within a specific time frame[1,6,13,17,19,26,27].
4. Eliminate standing orders[14,16].
5. Limit how far in advance doctors are able to order tests[19].
6. Limit the test menu available to certain kinds of doctors[13].
7. Require doctors to get special permission for ordering tests deemed to be over utilized[2,16,25,28].
8. Allow doctors to only order tests in a particular sequence based on previous test results[24].
9. Require doctors to sign a waiver declaring that all ordered tests are medically necessary[24].

ADVANTAGES

1. Relatively inexpensive to implement and easy to sustain[26].
2. Effective at reducing the use of tests that aren't truly needed. Bailey et al illustrated this, in their study. Rheumatoid Factor (RF), C-Reactive Protein (CRP) and Erythrocyte Sedimentation Rate (ESR) were removed from requisitions. CRP and ESR ordering rates declined significantly while orders for RF remained consistent. This suggests that doctors have a firm understanding of when a RF test should be ordered, and that there is some ambiguity about when CRP, and ESR tests are appropriate[23].
3. Effective in settings with high staff turnover[25].
4. Difficult for individuals to evade or defy.

DISADVANTAGES

1. Only decrease test ordering modestly[26].
2. Efficacy is mostly limited to esoteric tests. Common tests (which make up the bulk of laboratory expenses) are difficult to target with an enabling approach. For example CBCs and electrolytes are very common high volume tests. There are many instances where these tests are not indicated, however applying enabling interventions, such as removing tests from a requisition or unbundling test panels, would likely slow patient care with little impact on ordering frequency[3,25].
3. More likely to face resistance from clinical areas.
4. Too many restrictions on test ordering can compromise patient care, Jassens et al mentioned that blocking the ability to re-order tests made it difficult for doctors to do so when it was clinically indicated[26]. Jassens et al also stated that there were times when ordering blood work in advance was practical (for example with outpatient clinics). However, a Laboratory Information System that automatically cancelled orders placed in advance introduced complications. When patients came for their appointments, doctors often discovered that the tests they had ordered were cancelled. This forced doctors to order new blood work and reschedule appointments resulting in waste and compromised patient care[26] .

"**Reinforcing** factors reward a specific behaviour through feedback."[2]

EXAMPLES

1. Provide doctors with feedback on their test ordering behaviour (e.g. issue report cards[7,10,14,18,28]), hold meetings to discuss metrics[9–11,14,28] and set up computer pop up messages when tests are ordered too often[27] .
2. Audit doctors on their test orders and debrief them on audit results[28].
3. Compare test ordering patterns of doctors to their peers[18].
4. Provide doctors with monetary incentives for ordering fewer tests[14].

DISADVANTAGES

1. Reinforcing interventions can be labour intensive as individual doctors must be constantly monitored and provided with feedback.
2. Giving doctors incentives to order fewer laboratory tests (such as competition and money) can potentially lead doctors to avoid

ordering medically necessary tests.
3. Statistics reflecting test ordering patterns fail to account for the unique circumstances of individual patients and thus may not be meaningful.
4. Passive feedback on its own (i.e. in the form of a report card) can be ignored and result in negligible changes in ordering behaviour[7].

MULTI-FACETED APPROACHES

The majority of studies reviewed employed multiple interventions simultaneously. Thomas et al ran four study groups, one control, one using a predisposing strategy, one with a reinforcing strategy and a fourth group using both interventions. The authors observed that using multiple interventions was more effective than only using one strategy, however the effects observed showed an additive effect rather than a synergistic one[18].

MEASURES OF PATIENT WELL-BEING

Many of the studies reviewed reported significant decreases in the number of tests ordered by doctors following an intervention, however few studies attempted to quantify the extent of negative outcomes suffered by patients related to reduced laboratory testing. Studies that did attempt to quantify patient outcomes demonstrated little to no adverse effects for patients[6,12,16,20]. An exception was Neilson et al, which monitored the frequency of reported critical results before and after interventions and noticed that fewer critical results were reported after intervention suggesting that critical results that might have been caught before the intervention may have been missed after the intervention took place[19]. The following approaches were used to quantify patient well-being:

1. Changes in the number of critical results reported[19].
2. Changes in the number of ailments diagnosed[16,20].
3. Length of stay, frequency of abnormal test results, blood products used[12].
4. Patient morbidity, mortality and disposition[6,12].

NOTES ON COST-CONTAINMENT

When planning an intervention, one must also consider the cost of human resources. The study by Verstappen et al indicated that when taking into account the wages of physicians and those maintaining an intervention, the costs of the intervention were actually greater than the costs of allowing test ordering to continue at the status quo[15,25]. On the contrary, papers by Attali et al and Powles et al observed the opposite, citing negligible costs and significant savings due to their interventions[16,29]. Performing fewer tests can only cut costs significantly if interventions are sustained over the long term. This is because hospital laboratories are staffed to accommodate long running average test volumes; the purchase of capital equipment is based on the same metrics. Having doctors order fewer tests over a short period will increase the amount of time laboratory personnel and their equipment is idle. A decline in ordered tests must be sustained over a long period of time before managers can consider redeploying laboratory resources without compromising patient care[3,15]. For these reasons clinical leaders must carefully consider the costs and benefits of an intervention and be willing to sustain their interventions over the long term. ■

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