Unexamined assumptions and unintended consequences of routine screening for depression

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In 2016 the United States Preventive Services Task Force (USPSTF) recommended screening for depression for everyone over age 13, including, for the first time, during pregnancy and postpartum. However, the original impetus for screening programs was to find, prevent, and treat *preclinical* conditions in *asymptomatic* individuals in order to stop or delay disease progression. Moreover, there is increasing awareness that the effectiveness of screening may be overstated in some cases and that the harms associated with screening, including overdiagnosis and overtreatment, warrant more careful consideration.[1] Practices once unequivocally embraced, such as screening men for prostate cancer with the prostate-specific antigen test and screening women over 40 with yearly mammograms for breast cancer, are no longer universally recommended or are being more cautiously implemented.[2-4] In this commentary, we examine the underlying assumptions and unintended consequences of expanding the practice of screening for depression in primary care.

Although questionnaire-based screening models are being expanded and imported into many areas of healthcare, this practice is controversial.[5] A recent study examined recommendations developed by the United States Preventive Services Task Force (USPSTF), the Canadian Task Force on Preventive Health Care (CTFPHC), and the United Kingdom National Screening Committee (UKNSC) for questionnaire-based screening for alcohol misuse, depression, developmental or speech and language delays, domestic violence, and suicide risk.[5] There were a total of only 6 randomized controlled trials (RCTs) designed to evaluate screening effectiveness and harms (i.e., by randomizing prior to screening and providing similar treatment resources in the screening and non-screening trial arms). The 6 RTCs reported a total of 57 null primary and secondary outcomes, but just 2 statistically significant outcomes favoring screening, both from one RCT. That RCT, however, has been criticized for switching primary and

secondary outcomes post-hoc to create the appearance of a positive trial and because reported treatment effects were 6-7 times what has been found in meta-analyses of similar interventions.[6] In light of the lack of evidence for the benefits of screening for these five conditions, it is not surprising that the CTFPHC and UKNSC have made 11 recommendations against questionnaire-based screening, including against depression screening, and no recommendations in favor. In contrast, the USPSTF has made four recommendations for questionnaire-based screening, no recommendations against, and has decided on seven occasions to not make a recommendation either for or against.

Certainly, Major Depressive Disorder (MDD) can be severe and recurrent, and the condition deserves the attention of policy makers, researchers, and clinicians. However, without evidence of benefit for questionnaire-based screening, several assumptions about screening programs, as well as potential unintended consequences, need to be examined. Depression screening is an example of why we should be cautious about importing the practice of screening into the realm of health problems that are not hidden and that may be transient in some cases.

Assumption 1: The condition has a detectable early asymptomatic stage, but is progressive and, without early treatment, there will be worse health outcomes.

Some patients with depression do get worse, but many do not. Previous research estimates that nearly one in four people experiencing untreated depression will remit within 3 months and more than half will remit within a year.[7] Although depression can reoccur and constitute an on-going struggle for many people, in most cases there is not the same typical progression that there is for cancer or infectious diseases, such as HIV. Screening models are premised on there being a latent or pre-symptomatic stage, during which early detection can improve outcomes. Many cases of depression, however, particularly those that are mild and

would not be detected or reported without a screening questionnaire, will not progress, but will resolve on their own. Indeed, NICE recommends watchful waiting when patients report symptoms of depression for the first time.[8] Depression is episodic in nature and often abates, characteristics which violate core assumptions underlying the screening model – that asymptomatic individuals have an underlying disease that will progress if untreated.

Assumption 2: In the absence of screening, patients will not be identified and treated.

Assessment of depression refers to a health care provider using her or his clinical skills to observe and ask thoughtful, appropriate questions about a patient's experience and current situation. Screening for depression differs from clinical assessment in terms of both intent (early detection) and in the mechanization of the process: all patients receive a questionnaire and a score determines the next steps. Thus, screening assumes that there is an added benefit of using questionnaires over clinical observation and collaboration with the patient, but there is no evidence that a screening program would reduce symptoms of depression compared to being alert and engaging in good clinical assessment as appropriate.[9-12] However, there *is* evidence that the use of clinical judgment and observation will enhance medical decision-making and collaborative care.[13] The task of screening is to identify patients who would not otherwise be treated and who will benefit from treatment and, to date, there is no RCT evidence to conclude that depression screening would successfully do this.[11, 14]

Assumption 3: Depression treatments are effective for patients who screen positive but have not reported symptoms

Most people who do not report symptoms, who are not otherwise recognized as depressed, but who are only identified as depressed via screening will have mild symptoms. If

treated, most will be treated with medication.[9] However, numerous meta-analyses have shown that antidepressants are generally not effective for milder forms of depression and should not be used in this group because the risk benefit ratio is poor.[15-17] Furthermore, many patients identified through screening may not be as likely as providers may think to agree to treatment with medication or other interventions.[18] It is well-documented that treatments work best when there is both agreement on the problem and the intervention[19] and these conditions may not be met for many patients who screened positive for depression, but have not sought evaluation or treatment.

Unintended Consequence 1: Overdiagnosis and overtreatment

A concern is that depression screening could add to the problem of overdiagnosis and overtreatment. Indeed, the majority of patients who are treated for depression do not meet diagnostic criteria,[20, 21] and the dramatic increase in treatment rates in recent years has not been accompanied by a prevalence reduction.[22] Depression screening would add to the number of patients for whom treatment may be initiated, by increasing treatment in patients with mild symptoms, but would not likely improve the substandard care that many patients receive.[23] When screening tools are used, in many primary care settings, more than 70% of positive screens will be false positives.[24, 25] Thus, universal questionnaire-based screening would result in many people being unnecessarily exposed to the adverse effects of antidepressant medication such as sexual dysfunction, gastrointestinal issues, and cardiovascular problems,[26] but without evidence of benefit. Adverse effects of screening are rarely studied, and longitudinal studies addressing this problem are needed.

Unintended Consequence 2: The Nocebo effect

In addition to overdiagnosis and over treatment, the nocebo effect must also be considered.[27, 28] That is, there is a risk in encouraging people who may have transient, context-dependent difficulties to see themselves as having a medical illness. Certainly, endogenous neurotransmitters affect mood and behavior, and the pharmaceutical industry has heavily promoted the belief that low serotonin levels are the primary cause of depression—a belief that is reinforced through direct-to-consumer advertising.[29] Many people now falsely assume that the etiology of depression is known and that medication can correct this neurochemical imbalance. In turn, this may have the unintended and unwanted effect of creating an illness identity— one that may not lead to resolving life problems that may be implicated in mild negative mood.

Unintended Consequence 3: Misuse of resources

Finally, when making decisions about screening, issues of distributive justice need to be evaluated.[30] Screening in primary care settings would reduce the already limited ability of the healthcare system to provide adequate mental health care for those who clearly need treatment. This is particularly problematic because none of the questionnaires helps providers get a contextual picture that respects the unique life circumstances and needs of the patients they are surveying. Thus, screening for depression may undermine a collaborative, patient-oriented approach as well as our ability to address how health is 'determined by exposures to risks and resources.'[31(p410)]

Conclusion

> The therapeutic imperative in medicine means that we are good at rushing to do things that might 'save lives' but not good at not doing, or undoing.[30(p348)]

Sensible health care policy should be congruent with evidence. As Mangin astutely noted, our goodhearted desire to ‘do something’ often undermines our ability to interrogate our assumptions and accept empirical evidence. Before implementing any screening program there must be high-quality evidence from randomized controlled trials (RCTs) that the program will result in sufficiently large improvements in health to justify both the harms incurred and the use of scarce healthcare resources.[37] Helping people who struggle with depression is a critically important public health issue. But screening for depression, over and above clinical observation, active listening and questioning, will lead to over-diagnosis and over-treatment, unnecessarily create illness identities in some people, and exacerbate health disparities by reducing our capacity to care for those with more severe mental health problems—the ones, often from disadvantaged groups—who need the care the most.

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