

Improved screening must balance potential benefits with patient harms

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Screening to detect medical conditions has become standard practice for many diseases, but insufficient attention has been paid to the potential for harm, according to research conducted at the University of North Carolina.

"I think guideline groups, just as they are systematic about thinking about benefits, need to be systematic about thinking about harms. We should not implement a [screening program](#) until we know enough to have a clear understanding of both benefits and harms," said lead author Russell Harris, MD, MPH, Professor of Medicine in the UNC School of Medicine and Adjunct Professor of Epidemiology in the UNC Gillings Global School of Public Health, and member of the UNC Lineberger Comprehensive Cancer Center. Harris worked with a number of co-investigators at the UNC Research Center for Excellence in Clinical Preventive Services in the UNC Cecil G. Sheps Center for Health Services Research.

In an article published by the Journal of American Medical Association - Internal Medicine, Harris and co-authors outline a framework that physicians, patients, policy makers and researchers can use to think systematically about the harms of [screening](#) programs. This rationale – a "taxonomy of harms" – makes it easier for decision makers to fully consider all harms to balance against anticipated benefits. Harris said the framework for understanding harms provides physicians, patients, policy makers, and researchers with an approach for reviewing the potential downsides of any screening recommendation.

"Harms are any adverse effect that people feel because of screening. It is important to take the perspective of the patient, the one who experiences the harm. The whole idea of what we did was to develop a systematic way for people to look at a screening program and decide whether screening makes sense for them, without being blind-sided by harms that they didn't know about and didn't expect," said Harris.

Harris' team interviewed dozens of [policy makers](#), physicians, researchers and patients to develop four major categories of harm that need to be considered in any screening recommendation:

- Physical harm – The potential for a [screening procedure](#) to cause physical injury to patient, such as when a colonoscopy perforates the intestine and requires hospitalization.
- Psychological harm – The immediate and long-term psychological strain caused by screening. For example, a patient whose screening test was positive but additional testing ("work-up") was inconclusive, and the patient must then undergo further surveillance for some time without knowing whether she has a serious condition or not. This shows how screening can cause ongoing uncertainty and psychological strain.
- Financial strain – From the initial screening to follow-ups and monitoring, each medical intervention will increase the financial burden on patients, possibly interfering with their financial planning and security.
- Missed opportunities – From the need to miss work to have the initial test to further time to have additional testing – the screening process requires multiple visits and testing. This all becomes a distraction, taking time and attention away from people trying to attend to healthy lifestyle and to taking part in the everyday activities of work and family life.

Because the research on screening has traditionally been focused only on

its benefits, little evidence has been collected on the potential for harm. Harris said he hopes his work will spur the collection of such evidence, with an understanding that it must come from the patient perspective.

"Unfortunately, the data is not available in a systematic way. That would be wonderful if we had surveillance systems that we put in place 20 years ago to systematically look at benefits and harms," said Harris.

"Besides being helpful to decision makers today, we hope this taxonomy gives researchers a direction for future research."

Provided by University of North Carolina at Chapel Hill School of Medicine

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