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Placing orders on the wrong patient in Electronic Health Records (EHRs) is one of the most significant Health Information Technology (IT) Safety challenges healthcare organizations face today. To prevent these errors, the Office of the National Coordinator for Health IT (ONC) "SAFER Guide" recommends displaying patient photographs in EHRs, but the vast majority of healthcare systems have not adopted this practice. In a national survey, respondents cited lack of evidence that photographs improve safety and implementation challenges as major barriers to adoption. The goals of this project are to provide rigorous evidence that patient photographs prevent wrong-patient errors, and to develop an AHRQ Health IT Toolkit to guide healthcare organizations through the implementation process. Successful completion of this project will provide evidence and resources to accelerate adoption of patient photographs in EHRs to prevent wrong-patient errors.

Because implementation of patient photographs may vary across organizations and EHR systems, a collaborative approach has a high likelihood of success and potential for broad applicability. The proposed research will be conducted by experienced investigators at Columbia University Medical Center and Johns Hopkins Medicine, in collaboration with the ECRI Institute's *Partnership for Health IT Patient Safety*. This multistakeholder collaborative, representing large healthcare systems, researchers, patient safety organizations, EHR vendors, and patient safety experts, will produce results that are rigorous and generalizable.

We will pursue the following specific aims: **Aim 1**) Provide rigorous evidence for the efficacy of displaying patient photographs in EHRs by conducting a multisite, cluster randomized controlled trial comparing the frequency of wrong-patient orders among providers randomized to view order screens *with* versus *without* patient photographs; **Aim 1A**) Conduct subanalyses to identify factors that impact the effectiveness of patient photographs on the frequency of wrong-patient orders, including characteristics of providers, patients, and order sessions; **Aim 2**) Demonstrate generalizability by conducting multiple beforeafter implementation studies using different EHR systems to evaluate the effectiveness of patient photographs for reducing the frequency of wrong-patient orders across sites and EHR systems; **Aim 3**) Provide implementation guidance for displaying patient photographs in EHRs by developing the first AHRQ Health IT
Toolkit, "Implementing Patient Photographs in EHR Systems"; and **Aim 3A**) Conduct a qualitative evaluation to examine user perceptions and experience of patient photographs in the different EHR systems, including staff, providers, and patients.

This proposal responds to AHRQ Special Emphasis Notice (NOT-HS-16-009), requesting applications to "conduct research on safe health IT practices specifically related to the design, implementation, usability, and safe use of health IT" that would "inform health IT certification and other forms of policy guidance."