Firearms means restriction for suicide prevention in pediatric primary care

|  |  |
| --- | --- |
| **Project Name:**  Intervention mapping to develop multi-level implementation strategies in partnership with stakeholders: Firearms means restriction for suicide prevention in pediatric primary care | |
| **Principal Investigator:**  Rinad Beidas, PhD |  |
| **Principal Investigator** **Contact Information:** [rbeidas@upenn.edu](mailto:rbeidas@upenn.edu) |  |
| **Principal Investigator institution:**  University of Pennsylvania |  |
| **Funder:** NIMH |  |
| **Funding Period:**  05/2016 – 07/2018 (No cost extension) |  |
| **Abstract:**  Suicide is a leading cause of death in children and adolescents and a critical public health concern. One promising suicide prevention strategy that is under-utilized includes reducing access to lethal means, or means restriction. Firearms are an important target for means restriction given that 1 in 3 homes possess a firearm and firearms are the most lethal manner by which suicide is attempted. Primary care is an ideal setting in which to provide firearms means restriction given that almost half of youth who die by suicide do not access specialty mental health services in the 12 months preceding their attempt. The Safety Check intervention is an evidence-based practice for implementing firearms means restriction in pediatric primary care (including pediatrics, family medicine, and adolescent medicine). Despite the existence of this intervention and recommendations from the American Academy of Pediatrics, providers rarely discuss means restriction or firearms during visits, suggesting the need for a better understanding of the barriers and facilitators to implementing means restriction in pediatric primary care. Implementation science frameworks, including the Consolidated Framework for Implementation Research (CFIR), suggest the importance of attending to multiple levels of context during implementation, including provider (e.g., self-efficacy), organizational (e.g., expectations about provider behavior), system (e.g., prompts in the electronic health records), and intervention (e.g., acceptability) factors. The NIMH-funded Mental Health Research Network (MHRN), a consortium of 13 healthcare systems across the United States, affords a unique opportunity to better understand how to implement means restriction in pediatric primary care from a system-level perspective. Our objective in this application is to collaboratively develop implementation strategies in partnership with MHRN stakeholders to increase the use of means restriction in pediatric primary care. In Aim 1, we will survey leadership and primary care providers of 96 primary care practices within 2 MHRN systems (Henry Ford Health System and Baylor Scott & White Health) to understand acceptability and use of the three components of the Safety Check intervention (i.e., screening, brief counseling around gun safety, and provision of gunlocks). In Aim 2, in collaboration with MHRN stakeholders in these 2 systems, we will use intervention mapping and the CFIR to systematically develop and evaluate a multi-level menu of implementation strategies for firearm means restriction in pediatric primary care. The proposed work is consistent with the NIMH strategic plan, specifically Objective 4, to strengthen the public health impact of NIMH-supported research, and will lead to a hybrid effectiveness-implementation R01 proposal. The long-term goal of this line of research is to reduce death by suicide by increasing the use of evidence-based strategies in pediatric primary care while also promoting multi-level implementation strategies informed by a systematic and rigorous development approach. |  |
| **Grant Number:**  1R21MH109878-01 |  |
| **Participating Sites:**  Henry Ford Health System  Baylor Scott & White Health |  |
| **Investigators:** Rinad Beidas, PhD Brian Ahmedani, PhD John Zeber, PhD Steven Marcus, PhD Courtney Benjamin Wolk, PhD Shari Mintz, PhD Joel Fein, MD, MPH Gregory Brown, PhD |  |
| **Major Goals:** To partner with MHRN stakeholders and engage in quantitative and qualitative inquiry around how to implement an evidence-based program for firearm safety as a suicide prevention strategy for youth in primary care. |  |
| **Description of study sample:**  The sample for Aim 1 includes leaders from HFHS and BSW; and primary care providers from HFHS and BSW. 204 PCPs and 57 CLs were eligible for the survey; 103 (50.4%) PCPs and 40 (70.2%) CLs participated.  The sample from Aim 2 includes 4-12 individuals from each of the following stakeholder groups (n=70): parents of youth that receive pediatric primary care at a HFHS clinic; physician providers; non-physician providers; leaders of primary care practices; leaders of behavioral health; leaders of quality improvement; system leaders; third-party payers, members of national credentialing bodies, and gun-owning constituents. |  |
| **Current Status:**  11/10/2017:  **Aim 1:** We collected quantitative primary data about the acceptability and use of the three EBPs in the survey, as reported previously. We also collected secondary data via publicly available data sources, including data from the MHRN virtual data warehouse and the National Center for Health Statistics’ National Vital Statistics System. Additionally, we extracted youth (aged 12-24) suicide deaths over the past five years by firearm at the county level for each primary care practice location from the National Vital Statistics System. We have submitted the manuscript summarizing Aim 1 findings, and it is currently under peer review.  **Aim 2:** We trained research staff and successfully conducted qualitative interviews for all stakeholder groups (n=70). We added a stakeholder group (gun-owning constituents) given our experiences with the qualitative interviews. We have completed all interviews and enrolled 7 parents, 7 primary care physicians, 7 non-physician providers, 7 clinical leaders, 6 system leaders, 6 leaders of behavioral health, 7 leaders of quality improvement, 4 third-party payers, 7 members of national credentialing bodies, and 12 gun owners. We evaluated all interviews to identify common themes related to barriers, facilitators, and implementation strategies. Upon gathering this information, we used the spirit of intervention mapping, in concert with the Consolidated Framework for Implementation Research (CFIR), to inform the development of a menu of implementation strategies. A manual operationalizing each implementation strategy is in preparation and a manuscript describing the intervention mapping process will be prepared and submitted within the next six months. All interviews were transcribed and loaded into NVivo software for data management. Our team developed a comprehensive coding scheme and completed coding of all transcripts. Coders maintained excellent reliability. We are currently preparing a manuscript detailing our Aim 2 findings and plan to submit this within the next six months.  Currently, we are evaluating this list of implementation strategies by returning to the initial stakeholders, who completed the qualitative interviews, and asking them to complete a brief online survey assessing feasibility, acceptability, and importance of each strategy. An initial request for survey completion was sent to stakeholders recently and to date we have received 23 responses (roughly 45%). In the next 2-3 weeks we will send additional prompts to potential survey respondents in an effort to increase our sample size. This will allow us to generate a list of the most feasible and acceptable implementation strategies under each level. |  |
| **Study Registration:**  N/A |  |
| **Publications:**  Wolk CB, [Jager-Hyman S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jager-Hyman%20S%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Marcus SC](https://www.ncbi.nlm.nih.gov/pubmed/?term=Marcus%20SC%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Ahmedani BK](https://www.ncbi.nlm.nih.gov/pubmed/?term=Ahmedani%20BK%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Zeber JE](https://www.ncbi.nlm.nih.gov/pubmed/?term=Zeber%20JE%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Fein JA](https://www.ncbi.nlm.nih.gov/pubmed/?term=Fein%20JA%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Brown GK](https://www.ncbi.nlm.nih.gov/pubmed/?term=Brown%20GK%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Lieberman A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Lieberman%20A%5BAuthor%5D&cauthor=true&cauthor_uid=28647722), [Beidas RS](https://www.ncbi.nlm.nih.gov/pubmed/?term=Beidas%20RS%5BAuthor%5D&cauthor=true&cauthor_uid=28647722). [Developing implementation strategies for firearm safety promotion in paediatric primary care for suicide prevention in two large US health systems: a study protocol for a mixed-methods implementation study](http://bmjopen.bmj.com/content/7/6/e014407.long). BMJ Open. 2017 Jun 24;7(6):e014407. doi: 10.1136/bmjopen-2016-014407. |  |
| **Resources:**  N/A |  |
| **Lessons Learned:** N/A |  |
| **What’s next?**  We will submit an application to NIMH in 2018 to conduct a hybrid trial evaluating both the effectiveness of the adapted Safety Check in pediatric primary care and the implementation strategies we use to implement it. |  |