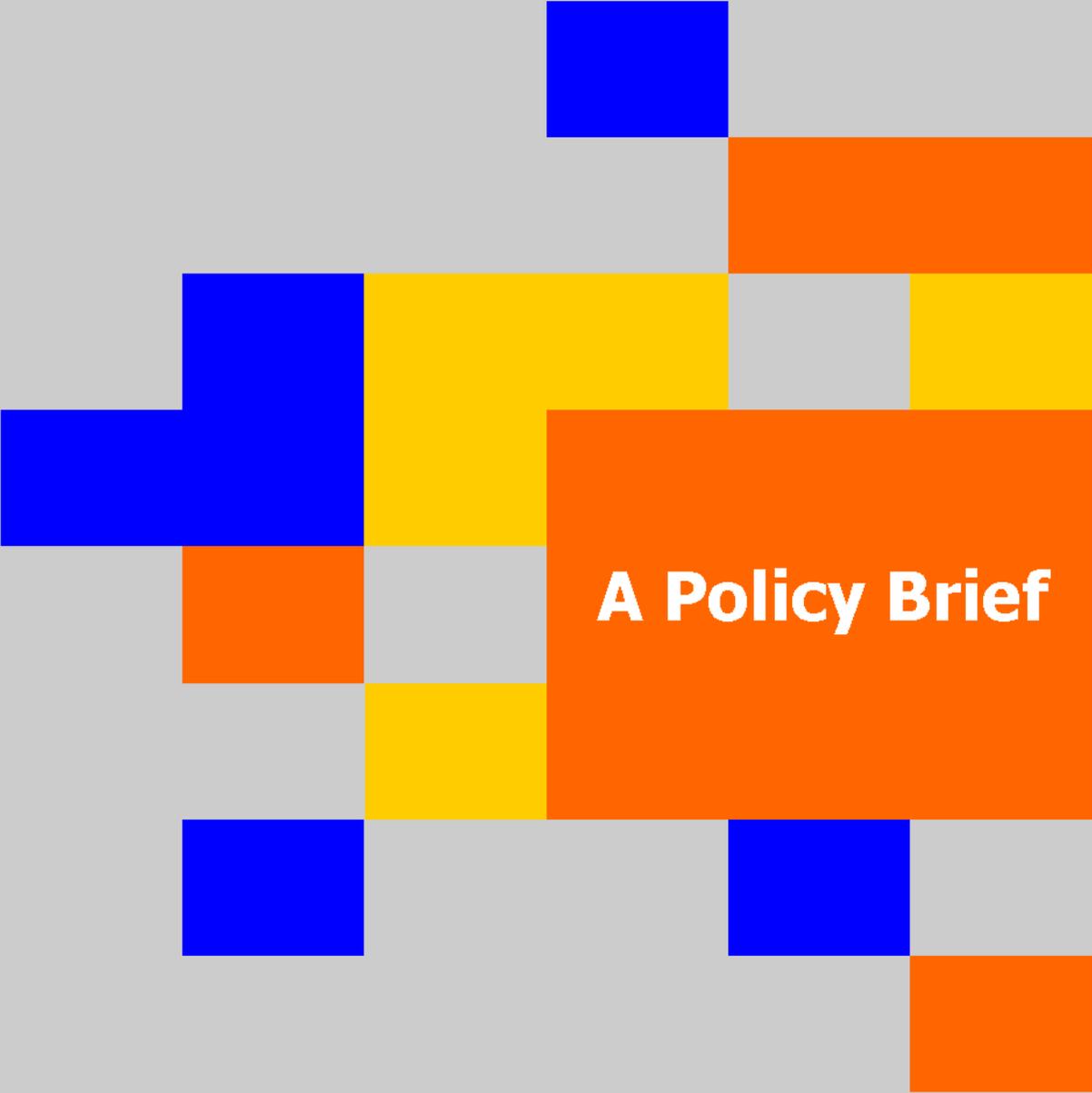


Addressing Tobacco Use Through Healthcare Systems



A Policy Brief



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A Real-World Case Example of How to Reduce Smoking Rates,
Improve Patient Health and Lower Costs

BACKGROUND

Over 70% of the nation's 45 million smokers will see a physician this year. As such, clinicians can play a critical role in reducing the toll of tobacco use on our nation's health and the unsustainable healthcare costs.^{1,2} Although effective clinical interventions exist,³ provider rates of intervention remain unacceptably low.⁴ One remedy is to demonstrate that systems which address tobacco use in clinic and hospital settings are *feasible* and *effective*.⁵

Healthcare providers are increasingly focused on strategies to improve patient population health, while also reducing costs. This is especially true in light of healthcare reform and the Centers for Medicare and Medicaid Services incentive program to support meaningful use of electronic health records (EHRs).⁶ Thus, it is imperative to demonstrate that a system of tobacco interventions—as with any clinical or electronic systems-level changes—will contribute to these goals in the real world. While the evidence from clinical trials demonstrates that discrete clinician interventions and medications significantly improve a patient's chances of quitting, we need to know more.

Does the system itself work and, further, do tobacco use interventions prompted by and documented in EHRs produce the desired population health and cost outcomes? A recent study of over 4,000,000 electronic encounter records in a 17-clinic healthcare delivery system suggests that a system of EHR-supported interventions can lead to significant reductions in smoking prevalence, while also reducing the rate of office visits for smoking-related diseases. Thus, positive results in both health improvement and cost savings were realized.⁷

The system implemented by Atrius Harvard Vanguard Medical Associates (HVMA) and the results achieved are summarized below, followed by implications and a call to action. A study of Louisiana State University Public Hospitals' tobacco intervention system, showing similar results, has been submitted for publication.⁸

REAL-WORLD SYSTEMS AND IMPACT

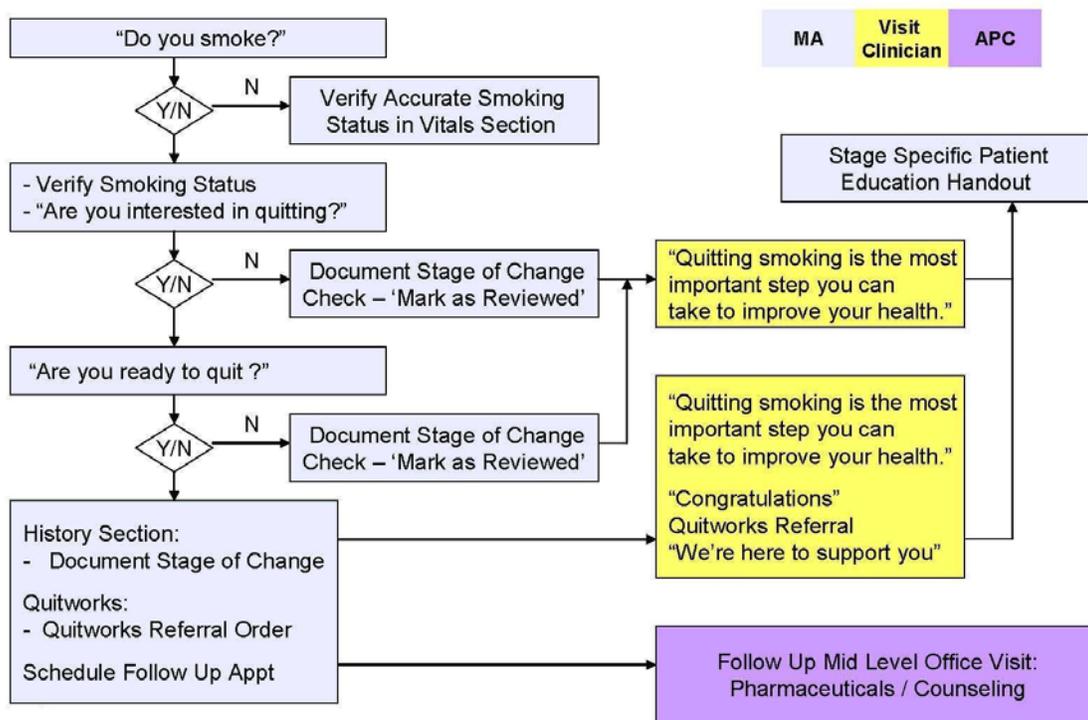
*TL Land, Rigotti, NA, et al, The Effect of Clinical Interventions with Cigarette Smokers on Quit Status and the Rates of Smoking-Related Primary Care Office Visits*⁷

The goal of this study was to evaluate the impact of the Harvard Vanguard Medical Associates system of brief interventions with cigarette smokers, using patient electronic encounter data amassed over six years. Data were included on smoking interventions that occurred during the primary care office visits of 104,639 patients at 17 outpatient clinic sites. To assess system impact, the analysis examined changes in smoking status among all patients as well as the frequency of office visits for tobacco-related diagnoses.

Describing the System

Figure 1 depicts the HVMA system—a team-based EMR clinical workflow. Similar working models across the U.S. show how simple steps can be introduced effectively into the clinical workflow and electronic health records to support quitting.⁸⁻¹⁵ These steps may be completed by a team of office assistants, medical assistants, nurses, and an MD and typically include: identification of tobacco users, a brief intervention, an offer of medications, and patient referral to the state quitline or other community resources for more intensive treatment. Since most providers do not have the capacity to offer intensive counseling, referrals for more intensive treatment can be made to state cessation quitlines or other community resources, shown as QuitWorks in the HVMA example. Furthermore, some healthcare facilities, including HVMA, can make fully electronic referrals from their electronic record to their state quitline and receive feedback reports to the patient’s medical record—an objective included in Stage 3 Meaningful Use recommendations.¹⁶

Program Description: Workflow



Defining Systems Change

Since the HVMA study focused on the “system” itself, it was necessary to define it operationally: When did a system-level change occur in each of the HVMA 17 clinic sites? Since no operational definition exists in the literature of “systems change” based on encounter data, one had to be developed. The study defined “systems change” as the first month when more than half of all office visits at a given clinic included a patient identification for cigarette smoking. To qualify as a sustained system change, in all months following that date, the rate of cigarette smoker identifications could never drop below 50%. Furthermore, there had to be at least 12 consecutive months with smoker identification rates above 50%. By this definition, 12 of 17 sites met the criteria, while five did not.

Increased Rates of Smoker Identification and Intervention

A dramatic and significant increase in the identification rate of cigarette smokers occurred in the 12 clinics that achieved a system change, soon after the 50% threshold for identification was reached. These clinics also reached very high levels of interventions with identified smokers, compared with non-system HVMA sites and with national data. Eleven of the 12 sites achieved an 80% identification rate within 9 months of the date defined for system change. Among the 12 systems change sites, a clinical intervention occurred during 82.5% of visits where patients were identified as smokers, compared with 59.4% at sites with no systems change.

Reductions in Smoking Prevalence and Improved Health Outcomes

Decreases in self-reported smoking prevalence were 40% greater at sites that achieved systems change (13.6% vs. 9.7%, $p, .01$). On average, the likelihood of quitting increased by 2.6% ($p, 0.05$, 95% CI: 0.1%–4.6%) per occurrence of brief intervention. This means that repeated interventions per patient could further increase the probability of quitting. After 3 years, a patient with a history of smoking who had 3 visits per year would be as much as 26% more likely to have quit smoking. For patients with a recent history of current smoking whose home site experienced systems change, the likelihood of an office visit for smoking-related diagnoses decreased by 4.3% on an annualized basis after systems change occurred ($p, 0.05$, 95% CI: 0.5%–8.1%). Among non-smokers at these same sites, there was no change in the likelihood of an office visit for smoking-related diagnoses. For Harvard Vanguard, this decrease translated into significant savings under their global payment system.

IMPLICATIONS

The HVMA data support and shine the spotlight on strategies in healthcare that focus on the system, rather than the individual clinician. As recommended in the USPHS Guideline, health care administrators, as much as individual clinicians, must be responsible for ensuring that tobacco interventions become an integrated component of health care delivery.³ With systems strategies, tobacco use interventions are likely to become a fully integrated and routine part of patient care, and hopefully interventions will become easier to perform than not. If results such as those realized within HVMA can be replicated across the primary care delivery system, significant strides can be made towards reducing tobacco use prevalence and improving health.

Harvard Vanguard Medical Associates, Louisiana State University Public Hospitals, and others have shown that, with EMR supported systems, healthcare providers can routinely reach very high levels (>80%) of smoker identification and cessation intervention.^{7,8} In contrast, in this era of healthcare reform and meaningful use incentives, it appears we may have set our national goals too low. Healthy People 2020 goals for provider tobacco interventions call for a 10% increase in the unacceptably low 2007 rates: for ambulatory settings, the tobacco use identification goal is an increase from 62.4% to 68.6%; for counseling it is from 19.2% to 21.1%.¹⁷

Real world experience and data show that it is feasible not only for primary care to address tobacco use, but also specialty care and behavioral health delivery systems. Tobacco use is *not* a specialized health issue that affects only a few patients in a narrow range of practice settings. Rather, tobacco use is pervasive and its negative impact presents in *every* healthcare delivery setting, including most specialties and across the continuum of care. Tobacco use adversely affects treatment of and recovery from hundreds of acute and chronic health conditions.

CALL TO ACTION

We encourage and support widespread adoption of systems to reduce tobacco use among the 70% of tobacco users who will visit their healthcare providers annually—including the most vulnerable. Based on the findings above, we highly recommend several actions to move us toward significant reductions in the high cost of tobacco use. First, we encourage federal and state public health organizations to establish aggressive goals which will reduce tobacco use through the healthcare delivery system. Simulation models and real-world research point to health systems interventions—hand in hand with access to benefit coverage—as powerful strategies to reach large numbers of low-SES tobacco users and to drive down smoking rates.

As demonstrated by the study featured here, tobacco interventions are associated with positive health outcomes and with cost-savings in the form of reduced office visits for smoking-related conditions. These results have been replicated (submitted for publication) and appear sufficient to recommend that tobacco use identification and cessation interventions be retained as required quality measures across all HHS programs, as well as commercial shared risk and bonus payment programs. At the same time, we urge HHS agencies to fund additional studies based on real-world EMR-generated encounter data in a wide variety of settings and with diverse populations.

We also encourage the CDC Office on Smoking and Health and state-level tobacco control programs to move forward with ongoing efforts to apply a policy and systems approach to clinical tobacco cessation interventions, and to accord cessation policy interventions a similar priority status to that of smoke-free policies, price increases, and hard-hitting media campaigns. Tobacco control program collaboration with health systems, especially to integrate state quitlines into EHRs, can be a cost-effective strategy for many state tobacco control programs. Work is already underway to make such referrals possible between any EHR and any state quitline, aligning tobacco use referrals with standard healthcare referral formats and practice.

Examples of healthcare delivery systems to address tobacco use are available [[Multi-State Collaborative, Partnership for Prevention, Center for Tobacco Research and Intervention](#)], although more case studies are needed. Best practice examples, especially those with strong evaluation models focused on health outcomes, and those that feature healthcare/public health partnerships should be identified and disseminated. Thought-leader forums at the state and national levels can bring together: high-level policy makers; industry leaders engaged in model cessation policy and practice; and researchers to inform and help set directions in this era of fast-changing healthcare policy and technology. Building on new health information technology and evaluation opportunities, healthcare providers and public health leaders must work together to set ambitious goals to reduce tobacco use in the United States.

ACKNOWLEDGMENTS

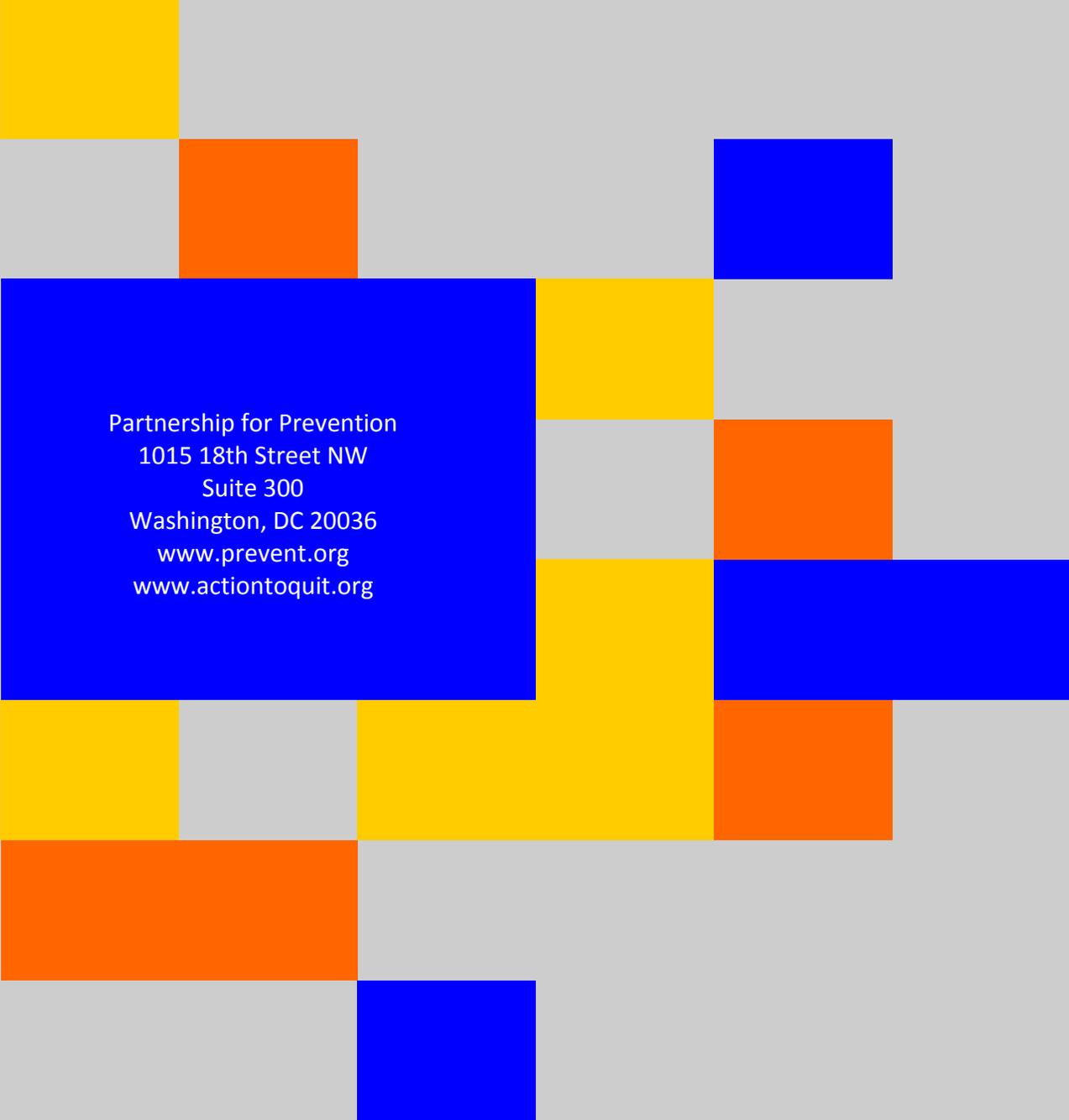
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