



# The Office Guidelines Applied to Practice program improves secondary prevention of heart disease in Federally Qualified Healthcare Centers

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## ABSTRACT

The burden of cardiovascular disease (CVD) among minority and low-income populations is well documented. This study aimed to assess the impact of patient activation and shared decision-making (SDM) on medication use through the Office-Guidelines Applied to Practice (Office-GAP) intervention in Federally Qualified Healthcare Centers (FQHCs).

Patients (243) with diabetes and CHD participated in Office-GAP between October 2010 and March 2014. Two-site (FQHCs) intervention/control design. Office-GAP integrates health literacy, communication skills education for patients and physicians, decision support tools, and SDM into routine care. Main measures: 1) implementation rates, 2) medication use at baseline, 3, 6, and 12 months, and 3) predictors of medication use. Logistic regression with propensity scoring assessed impact on medication use. Intervention arm had 120 and control arm had 123 patients. We found that program elements were consistently used. Compared to control, the Office-GAP program significantly improved medications use from baseline: ACEIs or ARBs at 3 months (OR 1.88, 95% CI = 1.07; 3.30,  $p < 0.03$ ), 6 months (OR 2.68, 95% CI = 1.58; 4.54;  $p < 0.01$ ); statin at 3 months (OR 2.00, 95% CI = 0.1.22; 3.27;  $p < 0.05$ ), 6 months (OR 3.05, 95% CI = 1.72; 5.43;  $p < 0.01$ ), Aspirin and/or clopidogrel at 3 months OR 1.59, 95% CI = 1.02, 2.48;  $p < 0.05$ ), 6 months (OR 3.67, 95% CI = 1.67; 8.08;  $p < 0.01$ ). Global medication adherence was predicted only by Office-GAP intervention presence and hypertension.

Office-GAP resulted in increased use of guideline-based medications for secondary CVD prevention in underserved populations. The Office-GAP program could serve as a model for implementing guideline-based care for other chronic diseases.

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## 1. Introduction

Disparities in cardiovascular health remain one of the most serious public health problems in the US today (Lillie-Blanton et al., 2004; Mensah, 2005). African-Americans, low-income and minority patients, especially those with diabetes suffer a disproportionate burden of cardiovascular diseases (CVD) morbidity and mortality (Wong et al., 2002). These differentials in CVD outcomes are thought to be partially attributable to disparities in CVD prevention and treatment and include barriers of literacy and poverty that obstruct access to benefits of secondary prevention. Anti-platelet agents, angiotensin-converting enzymes inhibitors (ACEIs), beta-blockers, and lipid-lowering agents

have significant morbidity and mortality benefits for prevention of CVD, but these agents are not optimally used (Chan et al., 2010). In general, 20–50% of patients are medication non-adherent (DiMatteo et al., 2002). Approximately 21–42% of patients with diabetes mellitus (DM) are medication non-adherent (Cramer, 2004; Kim et al., 2010). The lost opportunity for effective therapies to improve health is staggering (Bosworth et al., 2011; Ho et al., 2006). Medication non-adherence undermines treatment effectiveness resulting in poor diabetic and blood pressure (BP) control, and increasing hospitalization, mortality, and cost to the US healthcare system (Salas et al., 2009; Sokol et al., 2005). The concept of medication adherence is complex and multifaceted and needs to be considered within the context of patient, provider and system issues (Rolley et al., 2008).

Translating practice guidelines into clinical practice has proved very difficult and challenging, even when the guidelines are well accepted (Davis & Taylor-Vaisey, 1997). Behavioral change interventions have been shown to be effective in outpatient settings (Koertge et al., 2003;

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<sup>1</sup> Prevention of heart disease in underserved.

Vale et al., 2003). Patient and family engagement offers a promising pathway toward better quality health care and improved health outcomes (Carman et al., 2013). Physician and patient interventions designed in tandem to support the therapeutic partnership from both perspectives have been advocated but infrequently implemented (Roter & Larson, 2001). Only a few studies have simultaneously intervened with both patients and providers and objectively measured intervention effects on health outcomes (Griffin et al., 2004). ‘Patient activation’ describes skills and confidence that equip patients to become actively engaged in their healthcare (Hibbard et al., 2013). Some patient-activation interventions designed to improve patient-physician communication have been tested in patients with chronic diseases, but relatively few have used targeted strategies, and focused on ethnic minorities and low socio-economic populations (Cooper et al., 2011). In addition, patient pre-visit coaching has been shown to improve patients’ communication with their physicians and health outcomes. (Kaplan et al., 1989). A recent Cochrane review of decision aids (DAs) found high-quality evidence that DAs compared to usual care improve people’s knowledge regarding options, reduce their decisional conflict and stimulate people to take a more active role in decision making (Stacey et al., 2014).

Our study addresses the need for more research on the use of shared decision-making (SDM) and DAs, the translation of evidence-based decision support interventions and guidelines-based care into practice. We focus especially on community outpatient settings that serve minority low-income populations (Elwyn et al., 2013; Stacey et al., 2014). We previously developed an integrated SDM intervention (Holmes-Rovner et al., 2011) based on our research in patient and provider communication skills training (F. Dwamena et al., 2012; Smith et al., 2000) and provision of problem-specific decision support tools (DST) (Dwamena et al., 2008; Holmes-Rovner et al., 2000). In our prior research, primary care physicians participated in a communication and SDM skill training for patients with stable coronary artery disease (CAD) going for stress test (Kelly-Blake et al., 2015). In the present study, we used our intervention to encourage SDM in guidelines-based medication use among patients with either diabetes or coronary heart disease (CHD) or both, receiving care in Federally Qualified Health Centers (FQHCs). The Office-GAP Program (Fig. 1) is based on the Health Literacy Care Model (HLCM) (Koh et al., 2013) and the Relational Coordination Model (Gittel, 2006). The HLCM is a systems approach to improving patients’ engagement in care. Relational coordination refers to the quality of communication that strengthens interpersonal

relationships (Gittel, 2006; Havens et al., 2010). This is fundamental to collaborative goal setting that both patients and providers will embrace. The objectives of the Office-GAP Program evaluation were to determine: 1) feasibility of the Office-GAP program among patients with DM, CHD or both in two FQHCs in Michigan; 2) the impact on a) use of guidelines-based medication for CHD prevention and b) the predictors of medication use in FQHCs.

## 2. Methods

### 2.1. Study design and setting

A quasi-experimental design study, over 6 months, with 12-month follow-up in 2 FQHCs in mid-MI. Centers were assigned to either intervention or control by the toss of a coin. Patients were recruited from October 2010 to March 2014, using patient International Classification of Diseases (ICD)-9 Code. At patient visits where either DM or CHD or both were on the problem list, practice staff informed patients about the study and directed them to the research assistant (RA) for more information. Interested patients were scheduled for an Office-GAP program group visit.

#### 2.1.1. Inclusion criteria

Adults aged 18 or older, who could provide informed consent. Patients with a diagnosis of DM, CHD or both.

#### 2.1.2. Exclusion criteria

Cognitive impairment, dementia and psychosis as determined by ICD-9 codes. Interpreters were used for non-English speaking patients. Study participants received \$30 reimbursement for transportation and parking. The Michigan State University (MSU) Institutional Review Board (IRB) approved the study.

All providers at both FQHC facilities (6 doctors, 3 nurse-practitioners (NP)), 18 staff (Medical Assistants, Administrators, Receptionists, Social Workers), and 243 patients participated in this pilot study. All participants signed an informed consent.

### 2.2. Interventions

The Office-GAP tools were grounded in Guidelines of the American Heart Association/American College of Cardiology Foundation (AHA/ACCF) on secondary prevention of heart disease (Smith et al., 2011)

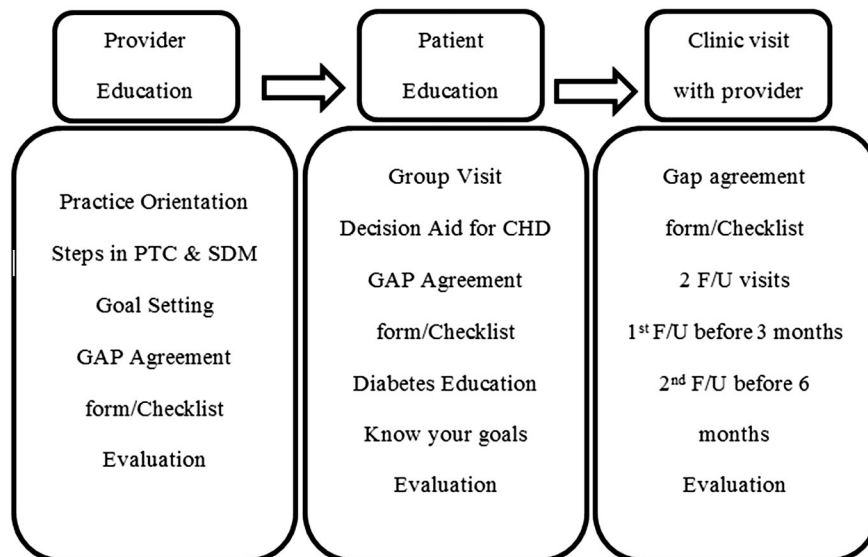


Fig. 1. Office-GAP intervention in Federally Qualified Healthcare Centers. GAP: Guidelines Applied to Practice PTC: patient-centered method of communication SDM: shared decision-making CHD: coronary heart disease F/U: follow up.

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