

IRENE Newsletter

IOWA RESEARCH NETWORK

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Our
MISSION
and
PURPOSE

- IRENE's mission is to improve the health and well-being of Iowans through collaboration in practice-based research on questions important to primary care physicians and their patients. IRENE's purpose is to create and foster a network of research collaboration between the academic medical center and primary care physicians throughout the state of Iowa with a particular focus on improving rural health.

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AHRQ Contract Award Received to Study Community-Acquired MRSA

A new project entitled, "Management by Primary Care Clinicians of Patients Suspected of Having Community-Acquired, Methicillin-Resistant *Staphylococcus Aureus* (CA-MRSA) Infections," has been funded by the Agency for Healthcare Quality and Research. Principal investigators, Jeanette Daly, RN, PhD and Barcey Levy, PhD, MD have received the funding for two years to conduct the study in nine IRENE offices. The purposes of the study are two-fold: 1) identify and evaluate best methods and procedures for primary care practices to follow in managing patients suspected of having community

acquired methicillin-resistant *staphylococcus aureus* infections, and 2) disseminate widely those strategies found to be effective, efficient and sustainable.

CA-MRSA can cause illness in persons outside of hospitals and healthcare facilities. MRSA infections that are acquired by persons who have not been recently (within the past year) hospitalized or had a medical procedure (such as dialysis, surgery, catheters) are known as CA-MRSA infections. MRSA infections in the community are usually manifested as skin infections, such as pimples and boils, and occur in otherwise healthy people. The majority of MRSA infections occur among

patients in hospitals or other healthcare settings; however, it is becoming more common in the community setting. CDC public information suggests that 12% of clinical MRSA infections are community-associated, but this varies by geographic region and population (http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_public.html).

Two other practice-based research networks in the country received this award; the State Network of Colorado Ambulatory Practices and Partners (SNOCAP) and North Carolina Network Consortium (NCNC). The faculty at these three institutions will collaborate on this work.



TEAM-BASED CARE FOR HYPERTENSION

By Barry L. Carter, Pharm D.

We have evaluated the physician/pharmacist collaborative model in two studies funded by the National Heart, Lung and Blood Institute. Both studies involved patients with uncontrolled hypertension. One study was just completed in seven of the Iowa Family Medicine residency training programs in the Iowa network, but the results of this study are still being analyzed. Both studies involved clinics in the IRENE Network.

We recently published the results of a cluster, randomized trial of physician\pharmacist collaboration to improve blood pressure (BP) control in five university clinics in the Iowa City area.¹ We enrolled 179 patients seen by faculty physicians. The intervention protocol specified a patient interview at baseline by the clinical pharmacist. The pharmacist assessed the patient's regimen, suggested a goal BP and provided recommendations to improve BP control. BP control was defined as an office BP <130/80 mm Hg for patients with diabetes or chronic kidney disease and <140/90 mm Hg for all other patients.² The protocol specified that pharmacists should recommend therapies consistent with JNC-7 and educate the physician by providing background information if necessary.² The primary focus of the pharmacists was to address suboptimal medication regimens.

After adjustment for the covariates, the mean difference (control group minus the intervention group) in 9-month SBP was 8.7 (95% CI: 4.4, 12.9) mm Hg (Figure 1), while the adjusted mean difference in 9-month DBP was 5.4 (CI: 2.8, 8.0) mm Hg (data not shown). The 24-hour BP effect size was nearly identical with a mean difference of 8.8 (CI: 5.0, 12.6) mm Hg for SBP and 4.6 (CI: 2.4, 6.8) mm Hg for DBP.

At 9 months, BP was controlled in 89% of patients in the intervention group and 53% in the control group (adjusted odds ratio 8.9; CI: 3.8, 20.7; p<0.001, Figure 2). BP was controlled in 63% of non-diabetics in the control group and 91% in the intervention group (adjusted odds ratio of 10.2; CI: 3.4, 29.9; p<0.001). For patients with diabetes, BP was controlled in 24% of patients in the control group and 82% in the intervention group (adjusted odds ratio of 40.1; CI: 4.1, 394.7; p=0.002).

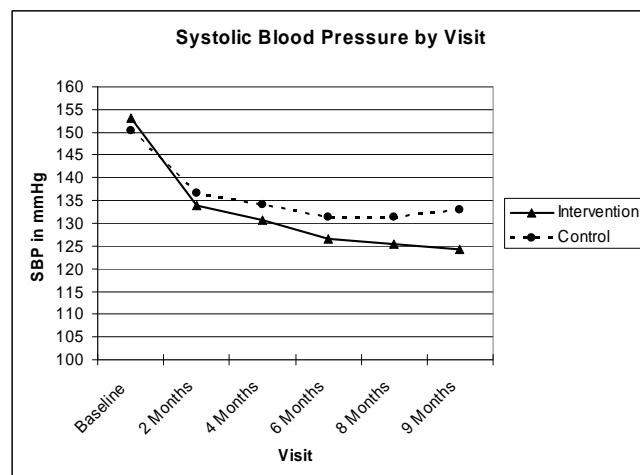


Figure 1: Clinic measured systolic BP

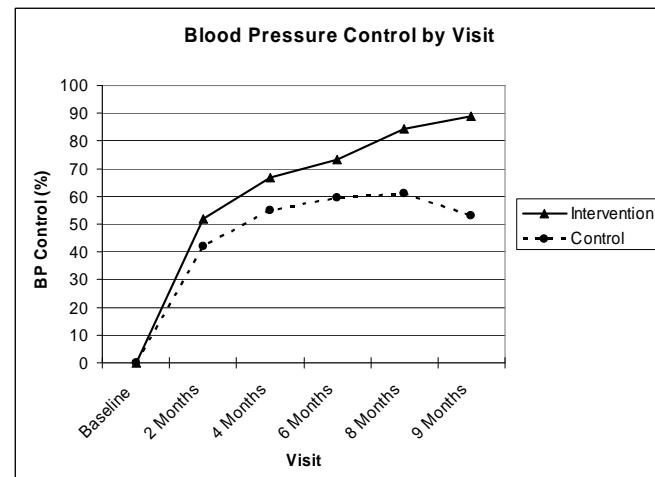


Figure 2. Blood pressure control based on clinic blood pressure based on <140/90 mm Hg for uncomplicated hypertension and <130/80 mm Hg for patients with diabetes or chronic kidney disease

The baseline number of antihypertensive medications was not different between the intervention (1.5 ± 1.0) and control groups (1.4 ± 1.0). By the end of the study, the mean number of antihypertensive medications was significantly higher ($p=0.003$) in the intervention group (2.4 ± 0.9) when compared to the control group (1.9 ± 1.0). There was no difference in the side effect score at baseline (mean 26.5 control group vs. 28.8 intervention group, $p=0.397$). In spite of the increase in medications in both groups, side effect scores declined at 9 months to 18.3 in the control group ($p=0.003$ vs baseline) and 22.2 in the intervention group ($p = 0.014$ vs baseline). There was no difference in side effect scores between groups at 9-months ($p=0.135$).

The clinical pharmacists made 267 recommendations (2.6 per patient) to change BP medications, and physicians accepted 256 (95.9%) in the intervention group. Of all the drug-therapy ($n=256$) changes made by physicians on the recommendations of the pharmacists, the majority were to increase the dose (34%), add another non-diuretic antihypertensive (30%) or add a thiazide diuretic (17%). Other recommendations included to switch within class (5%), decrease a dose (4%), discontinue a drug (7%) or change dose frequency (3%). Most of the recommendations (60%) occurred at or before the two-month visit. Physicians in the control group changed medications 100 times (1.28 per patient, $p <0.001$ compared to the intervention group).

This study focused hypertension management with the use of team-based care involving clinical pharmacists located in the physician's office. One big question is whether similar results could be achieved (similar improvements in BP control) if private physicians and community pharmacists worked more collaboratively for specific patients

with poorly controlled BP. To that end, we are enrolling six IRENE clinics that will partner with a specific community pharmacy. Later this fall, we will conduct teambuilding sessions with the physicians and pharmacists. Patients with poorly controlled BP will be identified and randomly assigned to a control or intervention group. Patients in the intervention group will have follow-up meetings with the pharmacists, who will then make



recommendations to physicians to improve BP control. The physicians will be free to accept, partially accept or reject the pharmacists' recommendations. We will determine if such a model can significantly improve BP when compared to the control group. This study is designed to enroll about 120 patients. We will use this pilot data to develop a grant application to the National Heart, Lung and Blood Institute to conduct a larger study with

longer follow-up. We appreciate the willingness of physicians in the IRENE Network to participate in these studies and hope you will agree to the larger project in the future.

REFERENCES

1. Carter BL, Bergus GR, Dawson JD, et al. A Cluster Randomized Trial to Evaluate Physician/Pharmacist Collaboration to Improve Blood Pressure Control. *J Clin Hypertens (Greenwich)*. Apr 2008;10(4):260-271.
2. Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. *Jama*. May 21 2003;289(19):2560-2572.



RECENT IRENE PUBLICATIONS

Levy, B. T., Joshi, M., Xu, Y., Daly, J., & James, P. A. (2008). *Perceptions of Iowa Family Physicians Regarding Colorectal Cancer Screening*. *Medical Care*, 46(9) Supplement 1:S103-S108, September 2008.

BACKGROUND: Fewer than half of Americans have been screened for colorectal cancer (CRC), a largely preventable disease.

METHODS: All physician members ($n = 1030$) of the Iowa Academy of Family Physicians were mailed a 3-page investigator-developed survey about their attitudes, barriers, and practices regarding CRC screening.

RESULTS: The usable response rate was 29%. Forty-three percent practiced in rural settings. Ninety-five percent felt that they were well informed about American Cancer Society guidelines and 90% tried to follow the guidelines. Most doctors (88%) disagreed with the statement that there was "no time to adequately discuss screening," but they would like more time to discuss screening. Only 40% felt their medical records were organized to easily determine screening status, 40% encouraged office staff to participate in screening, and

16% had a written policy regarding CRC screening. Physicians estimated that they recommend screening to 78% of their patients and that 54% of their patients were actually up-to-date. Discussion of CRC screening was strongly dependent on visit type, with physicians estimating that CRC screening is discussed at 11% of acute visits, 42% of chronic visits, and 87% of health maintenance visits. Several office system factors were associated with a recommendation for screening in a multivariable linear regression model ($R = 0.33$).

CONCLUSIONS: Although nearly all physicians felt that they were well informed about American Cancer Society guidelines and tried to follow guidelines for CRC screening, few had office systems to facilitate screening. Physicians would like more time to discuss screening. Office systems likely have the most potential to improve CRC screening among patients attending primary care practices.

*Permission is hereby granted on a non-exclusive, one-time basis to reprint the abstract from Med Care 2008;46(9 Suppl 1):S103-S108
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INSIDE THIS ISSUE:

AHRQ CONTRACT AWARD TO STUDY CA-MRSA	1
TEAM-BASED CARE FOR HYPERTENSION	2-3
RECENT IRENE PUBLICATIONS	4



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