

# Implementing Programs to Improve Hypertension Management in Typical Practice Settings: Not as Easy as It Sounds

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Hypertension is a common cause of death and disability.<sup>1,2</sup> Despite a longstanding consensus that reducing blood pressure (BP) to <140/90 mm Hg decreases morbidity and mortality,<sup>3</sup> more than 40% of Americans with hypertension continue to have suboptimal BP control.<sup>4,5</sup> This is particularly surprising because multiple studies have demonstrated effective lifestyle and pharmacologic approaches to the treatment of hypertension.<sup>6–8</sup> Large healthcare systems such as Kaiser Permanente Northern California have demonstrated that application of such techniques in well-resourced settings with ample information systems can lead to rates of hypertension control approaching 20% higher than national averages.<sup>9</sup> However, the majority of physician office visits continue to occur in physician-owned practices with <6 physician members.<sup>10</sup>

In this context, Niiranen *et al.*<sup>11</sup> (this issue) present data on their attempt to improve hypertension control in a small (10 physician, 5 nurse) community health center in Finland by encouraging the adoption of a range of evidence-based interventions. The study team educated practice physicians and staff members regarding lifestyle changes, home BP monitoring, and pharmacologic approaches that are effective in lowering BP. Practice staff members then provided individual and group counseling sessions to hypertensive patients. These patients were asked to measure home BPs and document a range of lifestyle factors at baseline and every 3 months thereafter for 1 year; this information was used in telephone counseling and adjustment of therapy.

After this comprehensive intervention had been in place for 1 year, the investigators found that BP control was no better among hypertensive patients seen in this practice than

among similar patients seen in a similar practice that shared the same building. They attributed this to therapeutic inertia on the part of the physicians because medications were not increased any more in the intervention practice than in the control practice and to patients' lack of compliance with suggested lifestyle changes because weight, sodium intake, and physical activity measures did not improve in the intervention patients. They conclude that the positive results seen in tightly controlled studies of various interventions might "give an overly optimistic picture of the feasibility and effects of an intervention on BP control in primary care."<sup>11</sup>

This study is an important contribution to our understanding of the challenges of achieving more uniformly excellent BP in broad populations. Clearly, rigorous, randomized controlled trial evidence that various lifestyle changes are causally associated with improved BP does not mean that these lifestyle changes will be widely adopted. Similarly, knowing that treatment protocols and home BP monitoring can improve treatment decisions does not mean that physicians will use this information to more aggressively titrate BP medications simply because the home BP data and treatment advice are available. Rather, efforts to incorporate new approaches into hypertension care require careful attention to how that new approach is implemented.

Recognition of the importance of the implementation step has spawned a new area of inquiry—implementation science. Implementation science has been the purview of large integrated healthcare systems such as the Veterans Health Administration, which has dedicated a specific line of funding, the Quality Enhancement Research Initiative (QUERI),<sup>12</sup> to efforts to understand how best to ensure that proven advances in healthcare capability move rapidly into

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routine healthcare practice. Over the last 15 years, implementation science has developed theoretical models that can inform the implementation approach that is taken and efforts to evaluate why a particular implementation fails.

In the study by Niiranen *et al.*,<sup>11</sup> the authors clearly recognize that the problem is not that the evidence base is wrong, but rather that the interventions were not implemented the same way in this small Finnish general practice as they were in the generally large, academic settings where they were developed. A hallmark of implementation research is a careful effort to understand why an intervention does or does not work in the new environment. Initially, this is as simple as documenting process—that the training sessions took place and participants were in attendance or that the home BP results were conveyed from the patient to the practice. Although not a focus of the study team, Niiranen *et al.*<sup>11</sup> do provide this information. A second step that might have been taken would be to describe the practice decision makers' views of the evidence that these interventions would be effective in their setting and describe the practice context—factors such as degree of commitment (perhaps small in this case, where an external force is causing the intervention to be in place for a relatively short time period of 1 year). The implementation scientist would also describe the steps taken to facilitate adoption—incentives for adoption by the practice, degree of tailoring of the written materials for the practice, and any ongoing support that the investigator provides during the implementation process. This set of issues has been formalized as the Promoting Action on Research Implementation in Health Services framework, which has been used to organize comparisons of implementation efforts across settings.<sup>13</sup>

It may seem a daunting challenge to layer a complex evaluation of the implementation process over the significant achievement of implementing a new intervention and measuring whether or not it affects clinically relevant outcomes—lifestyle, medication adjustment, and BP in this case. However, the methodology for this type of investigation is becoming more widely accessible;<sup>14,15</sup> training is also available (e.g., <http://www.queri.research.va.gov/ciprs/training.cfm>). Given that the majority of patient care still occurs outside of large healthcare organizations, it is particularly important that careful studies of implementation occur in smaller practice settings.<sup>16</sup> This is an appropriate role for practice-based research networks, which can bring together practices that are often interested in rigorous evaluation of new approaches to improve the care of common conditions such as hypertension. More than a decade ago, the Practice Partners Research Network examined factors associated with successful efforts to improve measures of primary and secondary cardiovascular disease and stroke prevention.<sup>17</sup> The 5 factors identified were (i) prioritization of performance; (ii) involvement of all staff; (iii) redesign of delivery systems; (iv) activation of patients; and (v) use of electronic medical record tools.

In summary, this important, although negative, report by Niiranen *et al.*<sup>11</sup> should not discourage future attempts to implement advances in hypertension management. It is challenging to implement complex interventions such as helping patients make significant lifestyle changes or asking physicians to incorporate home BP monitoring into medication management

decisions. However, such patient-centered interventions must be an essential part of managing hypertension and other chronic diseases. There is strong evidence that they work; we must find ways to get them into practice. Implementation science is an important tool for that important task.

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## DISCLOSURE

The author declared no conflict of interest.

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