

# Global implementation of advanced urological care: Policy implementation research

Lynn Stothers, MD<sup>1</sup>; Andrew Macnab, MD<sup>2</sup>

<sup>1</sup>Department of Urologic Sciences, University of British Columbia, Associate Member School of Population and Public Health Division of Global Health, University of British Columbia, Vancouver, BC, Canada, and Principal Investigator, International Collaboration on Repair Discover (ICORD); <sup>2</sup>Fellow, Stellenbosch Institute for Advanced Study (STIAS), Wallenberg Research at Stellenbosch University, Stellenbosch 7600, South Africa and Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada

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## Abstract

**Introduction:** In high-resource countries, modern treatments for urological diseases have led to significant reductions in mortality and morbidity; however, the benefits of modern treatment have yet to reach the majority of people worldwide. As attention is focused on improving urological care in the global community, policy and implementation research (PIR) offers a platform for effective organization and engagement.

**Methods:** We have compiled a photo essay to illustrate the fundamental components of PIR.

**Results:** There are four central components to the conduct of PIR. These are: 1) understanding the unique characteristics of the environment; 2) studying the implementation processes that fit within the environment; 3) testing innovative and novel ways to implement; and 4) programmatic implementation and scale-up.

**Conclusions:** PIR is a process that will help to identify, quantify, prioritize, and implement translation of modern methods of care to meet specific global needs.

## Introduction

Today, most high-resource countries enjoy the benefits of modern urological care. Such care improved the mortality and morbidity that used to be associated with common conditions, such as bladder outlet obstruction (BOO), to such an extent that the change was seen as “a major unheralded health triumph.”<sup>1</sup> Initially, the improvement was due to advances in surgical therapy, but today medical therapies are highly successful and the first-line of treatment advocated; however, globally the benefits of modern care have yet to be realized, especially in low- and middle-income countries (LMICs), where the scale of the disparity is underscored by the estimate that more than 2.3 billion individuals will be symptomatic with lower urinary tract symptoms (LUTS) worldwide by the year 2018.<sup>2,3</sup>

Recent awareness of the disparity of urological services and access to care geographically has led to national associations representing urologists and allied health professions to initiate ‘train-the-trainer’ programs. But significant barriers exist, which currently limit the effective translation of urological care between high- and low-resource countries because, as the World Health Organization (WHO) has identified, “Despite abundant evidence of the efficacy of affordable, life-saving interventions, there is little understanding of how to deliver those interventions effectively in diverse settings and within the wide range of existing health systems.”<sup>4</sup>

A key process to addressing disparities in care effectively is the application of policy and implementation research (PIR). Although PIR is defined by WHO as, “scientific inquiry into questions concerning implementation,” the process “promotes the successful application of interventions that have been demonstrated to be effective” by focusing on the issues in a real-world context and examining what enables or disables the introduction of effective treatments in a particular setting so as to facilitate adoption.<sup>4</sup>

Important outcome variables obtained include: acceptability, adoption, appropriateness, feasibility, fidelity, cost, coverage, and sustainability.<sup>4</sup> Four components central to conduct of PIR are: 1) understanding the environment including population demographics, geography and infrastructure; 2) studying the implementation processes that fit the environment; 3) testing innovative ways to implement; and 4) programmatic implementation and scale-up.<sup>5</sup> This photo essay illustrates elements of these components relevant to a recent Grand Challenges Canada project in Uganda, which addressed the burden of bladder disease due to BOO.<sup>6</sup>

## Discussion

This photo essay illustrates elements of PIR that we found to be integral to the success of a project involving the introduction of new technology, and enhanced access to modern



**Fig. 1.** Environment and population: An urban street scene in in sub-Saharan Africa illustrating the need to understand the unique demographics and age distribution of populations in lower-middle-income countries.



**Fig. 2.** Environment and infrastructure: Limitations in infrastructure (housing, water, sanitation) exist and access to services varies between those living in urban and rural environments.

urological care for BOO in sub-Saharan Africa.<sup>7</sup> In LMICs in Africa, late diagnosis of BOO equates with high morbidity and an unacceptable mortality. The increasing numbers of individuals projected to be affected with LUTS in the near future<sup>2</sup> makes initiatives to advance urological diagnosis and provide more access to effective, inexpensive medical therapy an urgent global issue.

The WHO advocates PIR as a method of scientific inquiry to answer questions that enable better implementation of effective care through focus on real-world issues.<sup>4</sup> While the process of PIR provides insight into what enables or obstructs the introduction of effective treatments in LMICs, the process itself is equally applicable to countries with highly funded healthcare programs.

Initial inquiry and dialogue should establish an understanding of the demographics and age distribution of populations,



**Fig. 3.** Implementation: Community engagement generates dialogue on perceptions of need and how to establish acceptable and feasible processes for implementation.



**Fig. 4.** Innovative implementation: Use creative methods to capture symptoms and severity of disease; data essential to rationalizing care services and individualizing treatment needs to be gathered using tools not dependent on literacy or English comprehension. This illustrates an evaluation comparing a picture-based symptom score of the International Prostate Symptom Score (IPSS) against the gold standard IPSS.<sup>7,8,10</sup>



**Fig. 5.** Innovative implementation: Cell phone texts can reach millions in lower-middle-income countries; radio broadcasts educate and recruit effectively; web-based learning is limited, but android phone use is occurring with increasing frequency.

impact of limited infrastructure, variations that exist in access to services in urban vs. rural communities (Fig. 1, 2), and perceived and actual priorities for change based on assessment of the burden of illness due to specific urological diseases.

Many sub-Saharan countries have a disproportionately high youth population, but are also reporting increasing longevity. A high proportion of those living longer lack the literacy and education required to allow them to acquire new health knowledge by conventional modern means.

Novelty and adaptation of community engagement strategies to facilitate education using community health workers (village health teams) are therefore important (Fig. 3), and modification of diagnostic tools to accommodate for language or limited literacy becomes essential. For example, the International Prostate Symptom Score (IPSS), while validated and recognized by the WHO, requires a Grade 6 U.S. equivalent education for comprehension.<sup>8</sup> Visual scores, such as the Visual Prostate Symptom Score (VPSS) are beginning to be explored in many regions worldwide. The VPSS has been developed and validated against the IPSS, correlated with peak flow rate (Q<sub>max</sub>) and Q<sub>wave</sub> from uroflow studies,<sup>7</sup> and has had content and construct validity established (Fig. 4).<sup>9</sup>

Evaluation of innovative ways to engage the population of interest and implement change should include input from the community, especially from representatives in the specific target group (age, gender, diagnostic category). The developed world has turned its back on radio, but this medi-



**Fig. 6.** Implementation: Engagement of traditional healers (left) and current local healthcare professionals (right) by teams contemplating implementation of advanced diagnostic methods and/or modern treatment entities.

um still reaches large sections of the population globally and can be used to educate, recruit, and provide feedback. Interestingly, because of “leap frogging” over landline use to rapidly adopt mobile phone technology, LMICs have a broad and inexpensive network, and there is already an appetite for health applications via cell phone texts to educate, provide health reminders, and call for care (Fig. 5).

Conscientious community engagement is central to any implementation process. The relevance of new ideas needs to be explained so that it is understood, but unless an idea also resonates broadly, the required buy-in for effective and sustained delivery is unlikely. Hence, team building and integration of traditional beliefs and practices in parallel with modern approaches is often constructive (Figs. 6, 7, 8). Including community health workers (e.g., village health teams) helps understanding and acceptance of new ideas, as they are an important and effective part of the healthcare delivery system in many LMICs.<sup>10</sup> The educational background of such staff is variable and differs by region, but is often limited; however, they work effectively because of their links to the community and because their training is focused on a few priority healthcare areas (e.g., malaria, hypertension, diabetes).

In the context of implementation, it is crucial to develop effective ways to provide skills training by evaluating what works and why it is important. Any new method should be evaluated for efficacy. We have shown that staff in rural areas with limited healthcare education can be taught to collect data of diagnostic quality and acquire new therapeutic knowledge and skills using an appropriate workshop format weighted towards haptic learning (learning by doing).<sup>7</sup>

## Conclusion

PIR provides a framework for generating the understanding required to prioritize what elements of modern urologi-



**Fig. 7.** Program implementation and scale-up: Facilitate implementation and expansion by training local clinic staff in new diagnostic/evaluation approaches and treatment paradigms proven relevant to local need, to ensure they are within the capacity of local services to use reliably and implement sustainably.

cal care should be offered and how they can be delivered effectively in diverse settings and within the wide ranging capabilities of existing health systems.

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**Fig. 8.** Treatment implementation and scale-up: Ensure broad access to cost-effective therapeutic medications through government purchasing and distribution logistics in parallel with healthcare provider education.

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**Correspondence:** Dr. Lynn Stothers, Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada; [lynns@mail.ubc.ca](mailto:lynns@mail.ubc.ca)