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## Case Study

# Design and implementation of a patient navigation system in rural Nepal: Improving patient experience in resource-constrained settings



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## ABSTRACT

Patient navigation programs have shown to be effective across multiple settings in guiding patients through the care delivery process. Limited experience and literature exist, however, for such programs in rural and resource-constrained environments. Patients living in such settings frequently have low health literacy and substantially lower social status than their providers. They typically have limited experiences interfacing with formalized healthcare systems, and, when they do, their experience can be unpleasant and confusing. At a district hospital in rural far-western Nepal, we designed and implemented a patient navigation system that aimed to improve patients' subjective care experience. First, we hired and trained a team of patient navigators who we recruited from the local area. Their responsibility is exclusively to demonstrate compassion and to guide patients through their care process. Second, we designed visual cues throughout our hospital complex to assist in navigating patients through the buildings. Third, we incorporated the patient navigators within the management and communications systems of the hospital care team, and established standard operating procedures. We describe here our experiences and challenges in designing and implementing a patient navigator program. Such patient-centered systems may be relevant at other facilities in Nepal and globally where patient health literacy is low, patients come from backgrounds of substantial marginalization and disempowerment, and patient experience with healthcare facilities is limited.

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## 1. Background

"Patient navigation" has previously been defined as a means of guiding patients to prevent them from getting lost<sup>1</sup>; a strategy to improve patient outcomes in vulnerable populations by eliminating barriers to care<sup>2,3</sup>; and a program where trained and culturally-sensitive healthcare workers provide support and guidance across the care spectrum.<sup>4–8</sup>

Although the definition for patient navigators may vary across the literature, the core function of patient navigators is largely consistent: to guide patients through the continuum of care. Patient navigator programs have proven effective in multiple contexts<sup>1,3–8</sup>; the focus is

primarily on community health workers or community nurse programs that typically serve a more clinical function.<sup>9</sup> However, limited literature exists regarding the implementation of non-clinical patient navigators based at healthcare facilities within resource-constrained and rural settings of low- and middle-income countries. This implementation gap is unfortunate because non-clinical patient navigators are likely to be valuable for patient-centered healthcare design in settings of severe social and economic marginalization, where patients are often unfamiliar with healthcare settings and may benefit from assistance navigating the healthcare facilities and care delivery processes.

## 2. Organizational context

Achham is a remote district in the Far-Western Development Region of Nepal; it is the second-poorest district<sup>10</sup> among the 75

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throughout Nepal. Citizens are primarily subsistence agriculturalists (60%), however a large percentage (35%) of the population relies on migrant work in India and other countries for their livelihood,<sup>11</sup> sending remittances home to their families.<sup>12</sup> Achham's Human Development Index is 0.378, and literacy rates are 71% and 43% for males and females respectively.<sup>11</sup> There is limited infrastructure including poor roads and inadequate public sector healthcare facilities, with only 18% of the population using electricity for lighting for example.<sup>13</sup> The per capita doctor ratio is 1:7,095<sup>11</sup>; the comparable ratio in the United States is 1:413.<sup>14</sup>

Bayalpata Hospital opened in 2009 and is one of two hospitals in Achham. Bayalpata Hospital is run through a public–private partnership between Nepal's Ministry of Health and Population, and the non-governmental organization *Possible*. Bayalpata Hospital treats on average 60,000 patients per year, and, at the time of writing, has treated over 275,000 patients since opening. Bayalpata Hospital's medical provider staff includes five staff physicians (MBBS certification; Bachelor of Medicine, Bachelor of Surgery), one residency-trained general practitioner (MDGP certification; Medical Doctor, General Practitioner), one residency-trained orthopedic surgeon, 16 health assistants (mid-level providers), five senior nursing staff (with Staff Nurse degrees) and 11 junior nursing staff (with Auxiliary Nursing Midwife degrees). All providers are Nepali. Bayalpata Hospital provides outpatient (200–450 patients per day), inpatient (25-bed capacity), emergency, surgical, laboratory and blood banking, radiology (X-ray and ultrasound), and pharmacy services. Given the significant increase in service demand, Bayalpata Hospital is expanding its capacity in 2016 and 2017 to include broader outpatient services and 50-bed inpatient capacity.

### 3. Problem

Patients at Bayalpata Hospital, owing to social and economic marginalization, low health literacy, and a lack of extensive prior healthcare experience, have historically had difficulty accessing and navigating the hospital's services. Challenges in access and navigation led to inefficiencies in care delivery, long wait times for patients, and an overall negative patient experience. This problem has grown over time as the hospital's capacity has expanded and new departments have been added. Fig. 1 demonstrates the complexity of a patient's care process at Bayalpata Hospital, as of 2015.

Staff at the hospital – specifically the nurses, mid-level practitioners, physicians, and lab and radiology technicians – increasingly became concerned about the challenges of complexity of care for the hospital's patients. Informally, the staff repeatedly

presented these concerns to the hospital leadership, with anecdotal experiences from numerous patients over a period of four years. The hospital leadership, including the medical director and other clinical leadership, felt strongly that these concerns needed to be addressed, and out of these discussions grew the plans for a patient navigator program. Due to limitations in financial and human resources, neither formal needs assessment was conducted, nor were formal focus group discussions held with the patients or staff. Despite this, the leadership felt that the anecdotal reports directly from staff and indirectly from patients were sufficient to initiate a program.

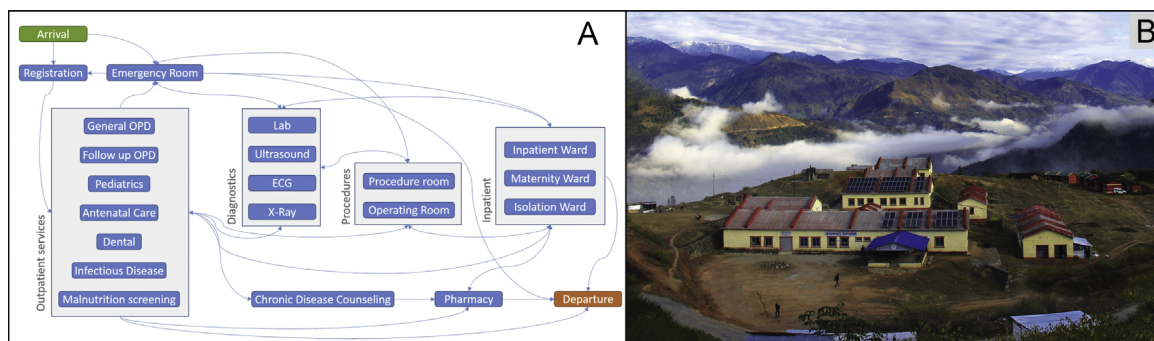
In the following sections, we describe some of the problems faced by the patients of Bayalpata Hospital; these problems led to the development of our current patient navigation program. Two case descriptions, from prior to the initiation of the patient navigation program, are included in Box 1, which are representative of many of the challenges faced by patients during their care delivery at Bayalpata Hospital.

#### 3.1. Inefficient patient flow

Patients were frequently confused as to what the next physical steps in their care process were, including which department or building to visit and where to receive lab results, radiology services, or medications. This led to long and disorganized queues, overcrowding outside of examination rooms, and obstruction of through-traffic in the corridors. The care providers were often forced to become involved in crowd-control, and interruptions during consultation sessions were frequent as patients were consistently in need of assistance.

#### 3.2. Uncoordinated and confusing provision of care

While the patients often intended to go where the providers instructed them, they became confused while physically moving through the hospital complex, arriving at incorrect places and waiting in incorrect queues, unaware that they were in the wrong place. In other instances, the patients did not understand the requests of the care provider (often having never encountered an “X-ray” or a “laboratory” in their lives thus far), and were unable to determine if they were in the correct place, regardless of signs or other directions. The logistical details of Bayalpata Hospital operations, typical of healthcare institutions in Nepal, dictate that patients must go to one location to have tests performed, a second location to receive test results, and then ultimately return to the original care provider for interpretation and discussion. This three-step process further exacerbates the navigation challenges. These and similar inefficiencies led to significant delays in care, and in



**Fig. 1.** (A) This map depicts the multiple potential pathways that a patient may follow throughout the care delivery process at Bayalpata Hospital. A patient may move between the outpatient buildings, the diagnostic buildings, and the inpatient and surgical buildings, in addition to moving between each of the multiple buildings in those three larger departments. These inter-departmental and inter-building movements may happen across a span of hours or days, depending on the care needed for each patient. (B) An aerial view of Bayalpata Hospital demonstrating multiple buildings throughout which patient care is provided.

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