

CASE STUDY:

Possible Nepal

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This case study is part of the **Accountable Care in Practice: Global Perspectives** series produced by Duke University's Robert J. Margolis, MD, Center for Health Policy and supported by the Commonwealth Fund. The series explores how organizations across the world have taken steps to improve health outcomes by adopting accountable care policy reforms within diverse organizational and environmental contexts. The aim is to assist US stakeholders to apply the results of these reforms. We consider the critical success factors with each organization's implementation process that could be translated in the US. Additional resources, including an explanation of the accountable care framework, can be found at the Duke-Margolis website.

Case Study: Possible, Nepal

Overview

Possible is a non-profit healthcare company that delivers primary care to remote, rural populations in Nepal. These communities lack access to physicians and adequate medical facilities and have high rates of communicable and non-communicable diseases (NCDs, also known as chronic diseases in the United States).

Table 1: Overview of Possible

Model	Health System	Innovations in Care	Key Outcomes
<ul style="list-style-type: none">• Non-profit, public private partnership providing primary care to rural areas• 8 years• Catchment size of 440,000	<ul style="list-style-type: none">• Decentralized• Private sector driven• High out-of-pocket spending• Primarily FFS	<ul style="list-style-type: none">• Community health workers reach patients through hub-and-spoke model; telehealth services• Portion of physician remuneration tied to performance	<ul style="list-style-type: none">• Provided health services for less than \$20 per patient• 14% of total patients with NCDs have their disease under control in the first quarter of 2017

Program goals: Reduce barriers to care for low-income groups through disease surveillance, implement early detection and prevention of infectious and NCDs, and promote patient self-management.

How this is achieved: Possible entered into a public-private partnership (PPP) with the Government of Nepal to deliver affordable, population-based care. Possible created its low-cost, integrated care model by building on pre-existing resources, such as government infrastructure and a community health worker program. Possible offers all health services free at the point of service. These services include hospital care (e.g., outpatient, inpatient, and laboratory), primary care in family practice, and home-based care for follow-up and long-term care coordination.

Results: Improvements in access to general and surgical care for patients of all demographic backgrounds, increased follow up rate for NCDs, while maintaining affordability (less than \$20 per patient on average).

Factors that supported reforms:

- Government funding, partnerships, and policy support for performance-based care
- Adaptation of existing resources (community health workers) and early investment in technical capabilities (EHR)
- Clear financial and non-financial incentives to encourage improvements in health care delivery

Relevance for US context:

The Possible case study demonstrates proof-of-concept for providing high-quality, affordable care in rural and low-income settings. Possible offers multiple best practices for US ACOs or medical homes serving low-income populations, such as how to leverage existing human resource capabilities, like community health workers, and adopt technological tools, like telemedicine, to deliver care to these populations.

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Figure 1: Translation Opportunities

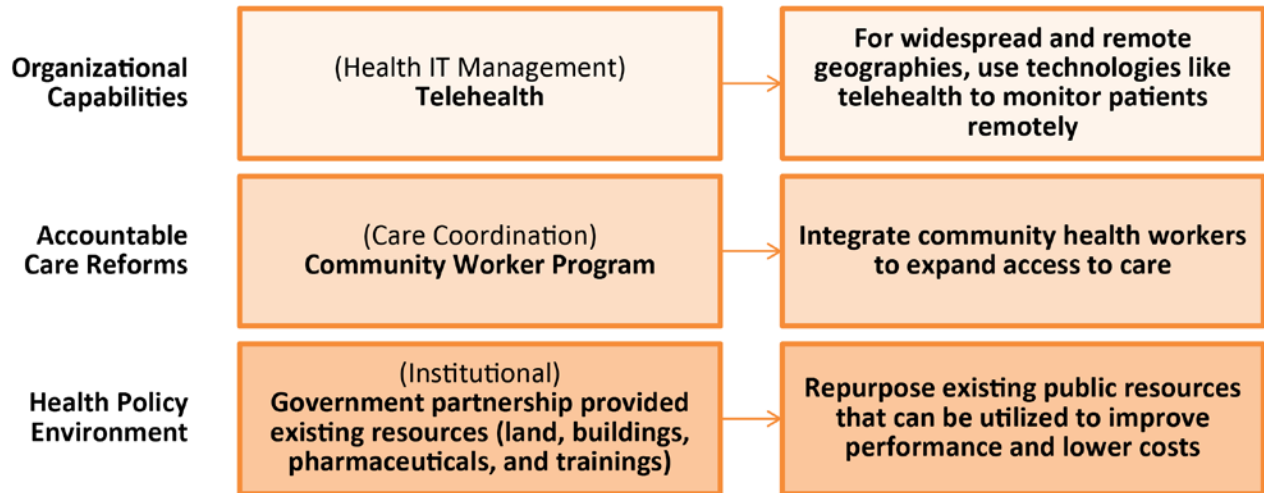


Figure 1 illustrates components of Possible’s accountable care implementation process that are relevant for US stakeholders. These include environmental factors (bottom tier) and organizational capabilities (top tier) that influence the success of Possible’s accountable care reforms (middle tier). The last column translates these lessons to a US context. Table 3 in Part IV provides additional translation opportunities.

Part 1 provides an overview of the Nepal health system context; Part II discusses Possible’s care plan using the Accountable Care Framework; Part III discusses the results of Possible’s reforms; Part IV analyzes the internal and organizational factors (in addition to those in Figure 1) that supported or hindered these reforms.

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Part I: Health System Context

NATIONAL CONTEXT

National Context

Nepal has achieved significant gains in population health in recent years. Over the period of 2000-2012, life expectancy increased by six years and maternal and infant mortality have decreased.¹⁻³ However, gaps in financing, regulation, health education, and care delivery have hindered efforts to control the burden of non-communicable diseases (NCDs), which account for 60 percent of deaths.

The absence of federal insurance and health standards has shifted financial risk to the individual and care to the private sector. This siloed spending has increased costs and lowered health outcomes.⁴ Although health expenditures account for six percent of the gross domestic product (GDP), the distribution of payments is unsustainable, with over 80 percent of spending coming from out-of-pocket payments.⁵ Additionally, other public health shortcomings, including inadequate sanitation (e.g., 54 percent lack proper sanitation facilities) and low provider-patient ratios (e.g., one doctor per 5000 people), create significant barriers for access to and delivery of care as the burden of disease shifts from communicable to NCDs.⁶

Healthcare quality also varies widely across Nepal, which is divided into districts. For example, gaps in care in Achham, one of Nepal's poorest districts, have caused the life expectancy of the district to remain more than 10 years below the national average.⁷ Citizens in Achham face a range of infectious and non-communicable diseases that require improvements in sanitation, integrated care, and increased funding for health services.

POSSIBLE BACKGROUND

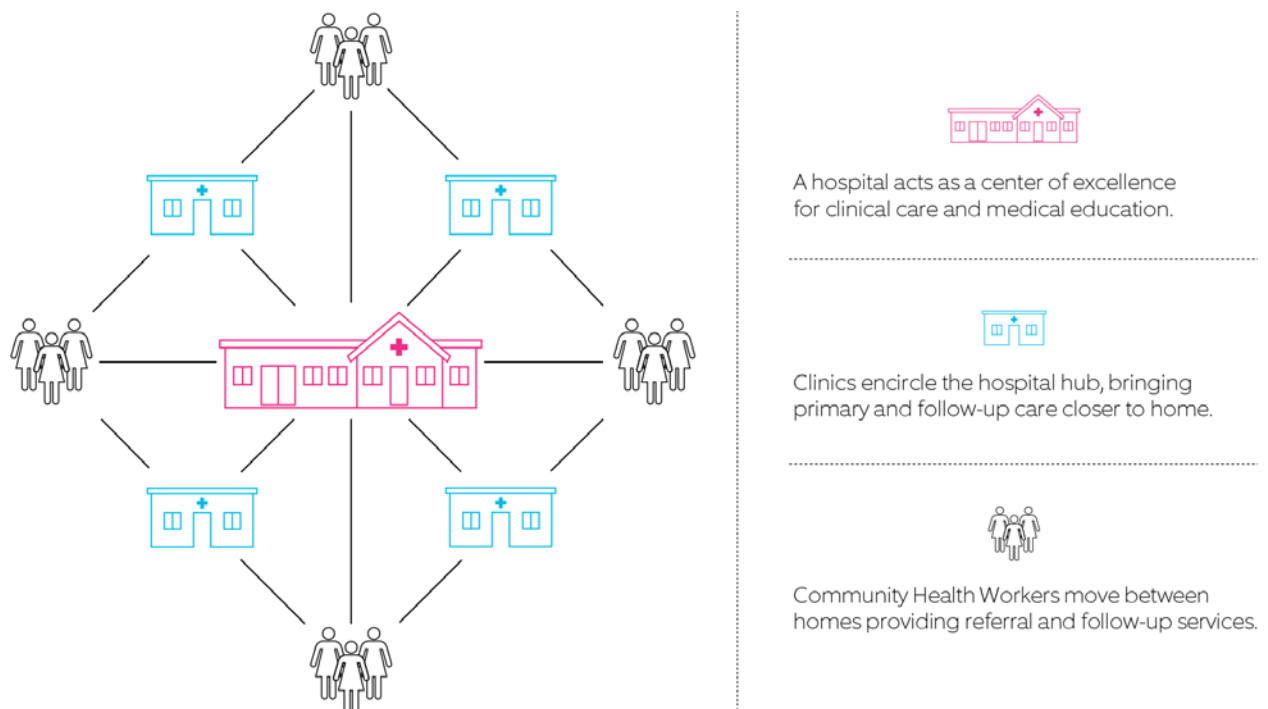
To address these issues, the Government of Nepal implemented two policy changes that created an environment conducive to health reform. First, the new constitution of the Government of Nepal included a mandate to guarantee essential health care for all citizens. Second, Nepal adopted a five-year strategy committed to developing population-based healthcare approaches. The Government of Nepal provided financial support for Possible through a PPP, which enabled Possible to experiment with new care delivery and payment models. Possible began operating in the Achham district in 2008 and currently serves two districts of Nepal: Achham (260,000 individuals) and Dolakha (180,000 individuals). In January 2016, Possible signed an agreement with the Government of Nepal to expand its model to Dolakha, a district in northern Nepal.

POSSIBLE STRUCTURE

Possible operates a hub-and-spoke model that is centered around Bayalpata Hospital, a government-owned teaching hospital that serves the majority of patients in the Achham district (Figure 2).

Case Study: Possible, Nepal

Figure 2: Possible Organizational Structure



Source: Possible

To expand the scope of care delivery in the region, Possible created a cadre of community health workers (CHW) to conduct disease surveillance and deliver care to rural patients. CHWs are a fundamental component of Possible's structure, allowing outreach to remote villages.

Possible has a horizontal management structure, with teams organized by specific areas of expertise. For example, a medical director oversees clinical care, a Community Health Director oversees community care, and an Operations Director oversees supply chain management and financials. A Community Advisory Board (CAB), comprised of 12 members from the local government, community, and other sectors in the district, provides Possible with advice on public health programs and interventions.

Possible is funded through a combination of performance-based government grants, foundation grants, individual donations, and partnerships.

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Part II: Accountable Care Reforms

This case study uses the accountable care framework to assess Possible’s reforms. The framework consists of five accountable care policy pillars: identifying and **stratifying target populations**, implementing **performance measures** related to quality and experience of care, providing data and other mechanisms to help providers identify opportunities to **continuously improve**, restructure **financial and non-financial incentives** to align payments with target outcomes, and **coordinating and transforming care** to improve delivery.

STRATIFICATION OF PATIENT POPULATION

Each quarter, CHWs engage in proactive, home-based case investigations to identify high-risk patients, with a particular emphasis on rural pregnancies, infant malnutrition, and NCDs. Patients can be enrolled into Bahmni, an open-source electronic health records (EHR) platform, at all sites of care (home, clinic, hospital). This allows providers to track an individual’s care over time and facilitates the long-term management of NCDs.

MEASURING HEALTH SYSTEM PERFORMANCE

Possible has adopted six Key Performance Indicators (KPIs) that are designed to improve outcomes for the entire system and can be collected in rural impoverished areas. The KPIs adhere to local and national health agendas and are incorporated into the performance-based financing agreement with the Government of Nepal. An internal impact team at Possible evaluates KPIs on a quarterly and annual basis to improve care quality. Team leaders can also propose additional indicators. Table 2 provides a summary of the KPIs.

Table 2: Key Performance Measure

Key Performance Measures	Description	Data Source	Linked to Payment	Frequency of Measurement
Surgery Access	Percentage of days when surgical services are fully available to patients	EHR	Yes	Quarterly
Equity	Ratio of hospital service utilization of marginalized patients vs. general catchment population	EHR	Yes	Quarterly
Institutional Birth	Percentage of women giving birth in a healthcare facility with a trained clinician	EHR	Yes	Annually
Chronic Disease Follow-Up	Percentage of NCD cases successfully followed-up in our catchment area	EHR	Yes	Quarterly
Outpatient Use	Frequency of healthcare service utilization among our catchment population	EHR	Yes	Quarterly
Contraceptive Prevalence	Percentage of reproductive aged women who delivered in the past 2 years using contraceptive methods	EHR	Yes	Annually

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MECHANISMS FOR CONTINUOUS IMPROVEMENT

Possible uses Asana, an online project management tool, to track progress for specific tasks and projects. Over 80 metrics are tracked, including HbA1c (diabetes), blood pressure (heart disease), and CD4 count (HIV/AIDS). The results are aggregated and analyzed by the operational team and used to improve, for example, handwashing practices, malnutrition screening, or NCD protocol adherence. Possible also publicly publishes a quarterly and annual impact report that provides KPI progress and financial information (Figure 3).

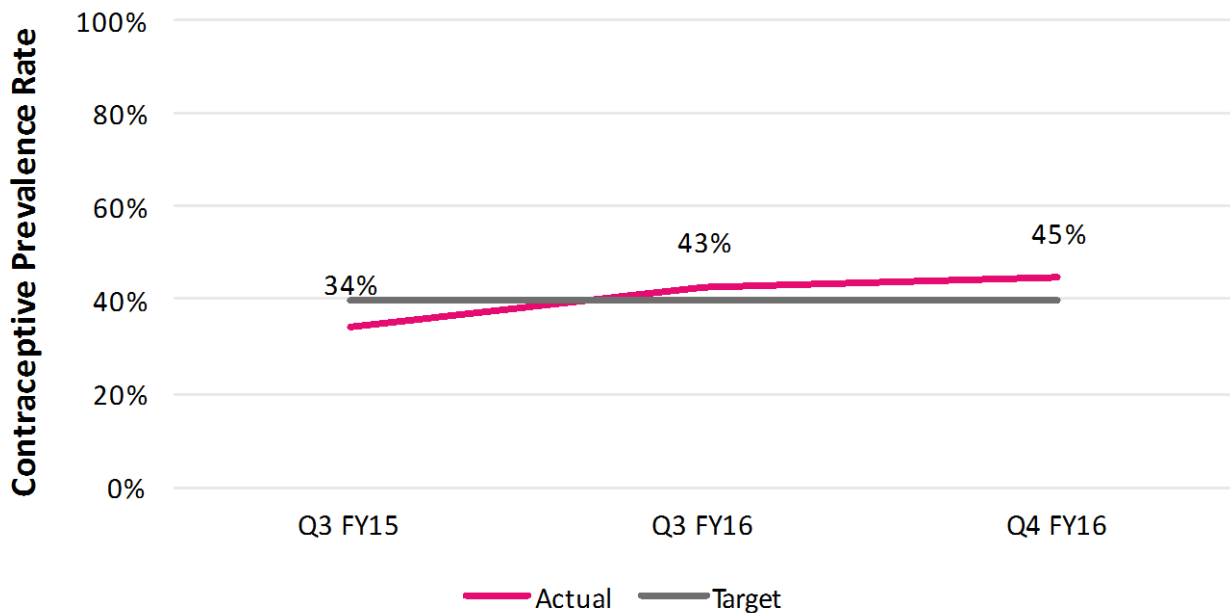
Additional activities include weekly one-on-one manager meetings and a patient satisfaction survey that is currently being piloted. Responses will be analyzed by using descriptive statistics across socio-demographic groups.

ADDITIONAL IMPROVEMENT MECHANISMS

Quarterly employee objectives, weekly morbidity and mortality conferences, reporting of adverse events, monthly impact dashboard review process, daily data sweeps within Bahmni (EHR platform).

Every week CHWs also collect patient encounters, allowing Bayalpata Hospital staff to monitor patients remotely.

Figure 3: Example of KPI Annual Report



Note: This KPI encompasses uptake methods of contraception including intrauterine devices and implants, condoms, and contraceptive pills. Source: Possible

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FINANCIAL AND NON-FINANCIAL SUPPORTS

Possible uses financial incentives to align payments with performance at two levels.

At the **system level**, the PPP contract provides baseline funding and applies an additional 20 percent reward or penalty to Possible based on the six KPIs and other metrics. Because KPIs are based on population health needs, this incentive encourages health services to meet a specific standard of care.

At the **individual level**, Possible promotes employee compensation practices that strengthen the public sector (in accordance with Article II of the World Health Organization's NGO Code of Conduct).⁸ All employees receive a competitive salary and benefits. Salary is also partially tied to professional performance evaluation and is not volume-based. Possible also offers employees non-financial benefits to create a culture of improvement. Examples include a maximum manager to staff ratio of 1:5, required weekly meetings between managers and their direct employees, and an emphasis on career development and growth.

CARE COORDINATION AND TRANSFORMATION

Possible utilizes several health IT platforms to coordinate care. The online project management tool Asana helps Possible manage teamwork and create a culture of transparency between staff who are based in the US and Nepal sites.

Additionally, Possible developed and implemented Bahmni, an open-source EHR platform that can be used across the entire spectrum of care, integrating the **hospital** (where human, technical, and wireless resources are concentrated), **primary clinics** (which have limited assets), and **patients** (through a mobile platform). Bahmni is designed specifically for the Nepali health system, and requires minimal technical expertise on the part of the user. The platform can handle a high volume of patients who are dispersed across a wide geographic area, and providers can use the modules for disease management and care tracking to identify gaps in care delivery. Bahmni has been deployed in two districts to date, with Possible currently working to scale the platform nationally.

Possible also instituted multi-disciplinary teams to optimize care delivery. For example, Possible built on the Female Community Health Volunteer (FCHV), a Nepali program that has delivered care for 25 years, by recruiting and training local Community Health Worker Leaders (CHWL) for longitudinal control of NCDs. CHWLs are based in their local communities, conduct case-finding home visits, and build relationships with local clinics.

USING TECHNOLOGY TO REMOTELY TRACK PATIENTS

Nepal's geographically-isolated terrain hinders disease surveillance efforts.

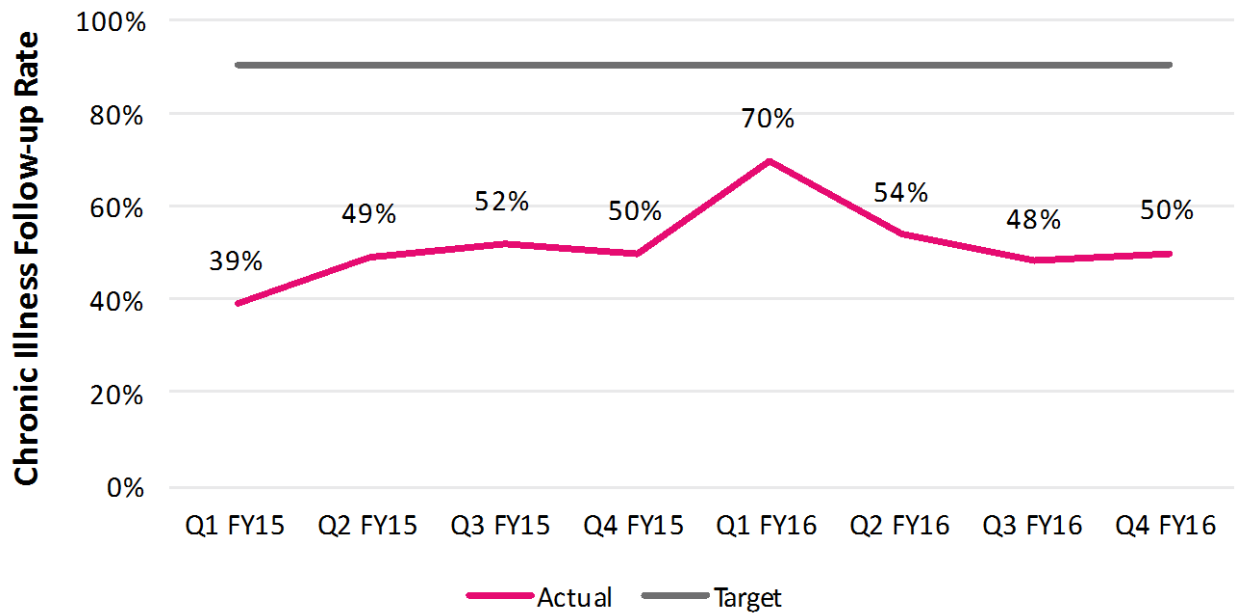
To overcome this, CHWs visit remote villages frequently and use cell phones to track community disease trends. Information is then aggregated in a central repository.

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Part III: Results of Accountable Care Innovations

Possible has met the majority of its KPIs, including achieving 100 percent access to surgery and equal access to care for patients of all demographic backgrounds. Over the past decade, Possible has provided health services for less than \$20 per patient to over 350,000 individuals. Their success demonstrates the feasibility of delivering low-cost, high-quality care in a rural setting. See Figure 3 above and Figure 4 below for examples of how Possible has met KPI benchmarks.

Figure 4: Chronic Disease Follow-Up KPI



Source: Possible

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Part IV: Implementation Barriers and Translation Opportunities

This section identifies key components of Possible’s reforms, including internal and external factors that facilitated Possible’s implementation of their model, and offers translation opportunities that could support further reforms in the US (provided in Table 3). This section also discusses some of the challenges that Possible faced.

Table 3: Translation Opportunities

	Component	Success Factor	Translation Opportunity
Organizational Competencies (from provider perspective)	Health IT	Telehealth system facilitates disease surveillance in rural areas	Incorporate digital care platforms and social media to expand provider bandwidth
	Governance and Culture	Developed a Community Advisory Board to advise on public health programs and interventions	Ensure community perspective and patient voice is embedded into model in a meaningful way
	Care Coordination	Use of community health workers for home-based investigations and care delivery	Embed members of multidisciplinary care teams in the patient’s social setting
	Quality and Process Improvement	Dedicated personnel for quality improvement; quarterly performance publications	Invest in transparent performance reporting to demonstrate and celebrate improvement while identifying challenge areas for further work
Accountable Care Policies (from multi-stakeholder perspective)	Population	Identifies at-risk patient through home visits	Proactively reach out to communities—including conducting home visits—to stratify high-risk individuals
	Performance Measures	Indicators track system-wide outcomes and processes, based on feasibility of implementation, tied to physician remuneration	Include indicators that reflect system-wide performance and are feasible to implement
	Continuous Improvements	<ul style="list-style-type: none"> Clinical and process-related data tracked to improve adherence to protocols Quarterly and annual impact reports provides KPI progress and financial information 	<ul style="list-style-type: none"> Ensure measures and processes are adaptable to the changing needs of patients and challenges of the system Define responsibilities clearly and develop educational resources to close knowledge gaps between team members
	Financial & Non-Financial Incentives	<ul style="list-style-type: none"> 20% of government PPP contract is tied to performance Employees receive competitive salaries and opportunities for growth 	Competitive salaries, a flexible management model, and clear expectations can facilitate adoption of new payment structures to gain traction and displace the existing fee-for-service model
	Care Coordination and Transformation	<ul style="list-style-type: none"> Community health workers reach patients through hub-and-spoke model Telehealth system to regularly monitor remote patients 	Providers that operate in low-resource areas could use existing resources to conduct site visits and provide longitudinal homecare services by leveraging technological tools
Health Policy Environment (from policymaker perspective)	Institutional	Government partnership provided existing resources (land, buildings, pharmaceuticals, and trainings)	Repurpose existing public resources that can be utilized to improve performance and lower costs
	Regulatory	Public Private Partnership provided performance-based grants	Continue to promote financial incentives that align payment with performance
	Political	Establishment of a patient advisory board and embedding health workers in the community	Institutionalize channels of communication for community members to shift dialogue from “patient” to “person”

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CHALLENGES

Re-Aligning Incentives for Care Delivery

The lack of federal regulation or insurance in Nepal shifted care delivery to the private sector, which was funded by a fee-for-service system at the point-of-care. This payment model encourages negative provider behaviors such as overmedication and episodic care interventions, which are ineffective at controlling NCDs and pose severe financial hurdles to patients.

Inadequate infrastructure and regulation to quality deliver care in remote areas

Rural communities in Nepal suffer from a lack of healthcare resources, which are primarily concentrated in the urban capital city of Kathmandu. A lack of government-mandated standards for population health at the district level coupled with underfunded quality improvement initiatives has limited efforts to monitor care delivery.

Possible provided the source data for this document and is responsible for the accuracy of the content. Please contact Duncan Maru (duncan@possiblehealth.org) for further questions or comments.

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References

1. Nepal: WHO Statistical Profile. The Global Health Observatory: The World Health Organization; 2015.
2. *Nepal: Neonatal and Child Health Profile*. World Health Organization.
3. *Maternal mortality in 1990-2015: Nepal*. World Health Organization.
4. Maru D, Uprety S. The High Costs of Nepal's Fee-for-Service Approach to Health Care. Vol 2016: Health Affairs; 2015.
5. Nepal. The World Bank 2015.
6. Caffrey M, Chilvers R, Martineau T. Human Resources for Health. In: Population MoH, ed. NHSSP: HRH Technical Working Group; 2013.
7. Office R. District Profile: ACCHAM. In: Office FC, ed: United Nations; 2013:1-18.
8. *NGO Code of Conduct for Health Systems Strengthening*. World Health Organization;2008.
9. Nolte E, Frølich A, Hildebrandt H, Pimperl A, Schulpen GJ, Vrijhoef HJ. Implementing integrated care: A synthesis of experiences in three European countries. *International Journal of Care Coordination*. 2016;0(0):1-15.