Partnerships To Provide Care And Medicine For Chronic Diseases: A Model For Emerging Markets

ABSTRACT The challenge of expanding access to treatment and medicine for chronic diseases in emerging markets is both a public health imperative and a commercial opportunity. Cross-sector partnerships—involving a pharmaceutical manufacturer; a local health care provider; and other private, public, and nonprofit entities—could address this challenge. Such partnerships would provide integrated, comprehensive care and medicines for a specific chronic disease, with medicines directly supplied to the partnership at preferential prices by the manufacturer. The model discussed here requires additional specification, using real numbers and specific contexts, to assess its feasibility. Still, we believe that this model has the potential for public health and private business to cooperate in addressing the rising problem of chronic diseases in emerging markets.

Situation In Emerging Markets

Noncommunicable chronic diseases are already the dominant cause of premature death and lost disability-adjusted life-years (DALYs) in low- and middle-income countries, and this reality is expected to continue. The burden of noncommunicable chronic diseases is higher in middle-income countries than it is in low-income countries. The burden in all countries is likely to increase with economic development.

Treatment of noncommunicable chronic diseases constitutes a profound challenge for middle-income countries in particular. Efforts by national health systems and the global health community to address this challenge have so far been modest and ineffective.

We propose a new business model for addressing the pricing of and access to advanced medicines for noncommunicable chronic diseases in emerging markets.

By “advanced medicines” we mean pharmaceutical products that are among the most effective in improving health outcomes or cutting costs. Whether a medicine is considered “advanced” for our purposes is not dependent on whether its patent protection has expired; many advanced medicines for noncommunicable diseases are off-patent and available as generics.

We use the term “emerging markets” to mean middle-income populations in middle-income countries—those with incomes or financial resources above that required for food and shelter. If the middle class means those earning US $2–$13 per day with 2005 prices at purchasing power parity, this group constituted approximately 2.6 billion people in 2005.
Our model presumes that lack of access to noncommunicable disease treatment in emerging markets is the result of deficiencies in health systems, in addition to high prices for medicines. With few exceptions, health systems and care providers in such markets fail to provide high-quality care for noncommunicable chronic diseases. The reasons include a lack of human or material resources and a perception that such care exceeds the financial resources available.

Major contributing factors are the high prices of the necessary advanced medicines and the high costs of these medicines relative to income. For example, medicine accounts for 50 percent or more of patients’ costs for diabetes care in emerging markets.\(^7,11\) High cost is especially important since most patients in emerging markets buy medicines principally out of pocket.\(^7\)

At the same time, although lower pricing of medicines for chronic diseases is necessary in middle-income countries, this alone will not be sufficient for improved treatment. Care quality will have to be raised and disease management strategies added; without these, the value of drugs for noncommunicable chronic diseases is greatly reduced.

A New Type Of Partnership

To tackle these challenges, we propose the formation of chronic disease–specific cross-sector partnerships, or “chronic disease partnerships.” These would involve major research and development–based multinational pharmaceutical manufacturers and local private, public, or nongovernmental organization (NGO) health care providers. These partnerships could improve access to high-quality health care and advanced medicines, while being a commercially and strategically attractive business initiative, rather than philanthropy.

This model should fit diabetes; cardiovascular disease; chronic obstructive pulmonary disease; epilepsy; certain cancers with long survival periods; and other noncommunicable conditions requiring long-term management and intervention. The model is not designed for infectious diseases, even when they demand similar treatment. We also do not discuss prices of and access to chronic disease medicines for poor populations in low-income markets.

Our business model reflects the current thinking on the “base of the pyramid,”\(^12-14\) which argues that multinational enterprises need new business models to expand into emerging markets and will not succeed merely by replicating or geographically extending their rich-country models.\(^12-14\)

These new models should take advantage of local strengths and resources. Multinationals will not succeed in emerging markets by simply providing missing goods or services at low prices; innovative strategies are required.

Global Pricing

Pricing and availability are usually seen as the key barriers to access to medicines in emerging markets. Common medicines for chronic diseases are not reliably available in the public sector. When they are available, they often are not free or subsidized but must be purchased by patients at substantial prices.\(^7-9\) Common medicines for chronic diseases are more reliably available in the private sector, but at high cost relative to patients’ resources.\(^7-9\)

Retail medicine prices in emerging markets can even be high relative to retail prices in rich countries. One study found that prices of 132 essential medicines in Brazil were, on average, 1.9 times higher than prices in Sweden.\(^15\) High medicine prices relative to patients’ incomes and payable out of pocket worsen patients’ take-up of and adherence to medicines, health outcomes, and impoverishment.\(^16,17\)

For advanced medicines, particularly patented medicines, a key concept is “differential pricing”: Companies should sell the same medicine at low prices in poorer countries and high prices in richer countries.\(^18\) If demand is more elastic in poorer countries because people there have less to spend on health, economic theory suggests that a company should set prices at a markup over marginal cost that is inversely proportional to the price elasticity of demand. This will roughly maximize profits and expand access as much as possible without selling below cost.\(^19,20\)

Differential pricing is win-win, however, only if markets in different countries are sufficiently separate so that one country’s low price will not affect higher pricing elsewhere.\(^21,22\) This seems not to be sufficiently the case to convince pharmaceutical manufacturers to adopt differential pricing globally.\(^23,24\)

Manufacturers tend not to offer low prices in emerging markets for fear of physical arbitrage—the re-export of drugs from the original importing country for sale in higher-price markets. They also fear informational arbitrage, or bargaining by richer-country purchasers to receive lower prices closer to those that they learn are available in poorer countries.\(^25\) Consequently, many pharmaceutical manufacturers in the past have chosen to protect their high margins in rich countries by largely ignoring the middle class in emerging markets as potential customers.\(^26,27\)
A Broader Approach To Access Issues
Our chronic disease partnership model follows a broader understanding of access, as presented by Laura Frost and Michael Reich.28 Affordability is only one element of access to medicines and cannot be addressed independent of access to high-quality health care. Noncommunicable chronic diseases require complex long-term care from coordinated clinical specialties, with effectiveness indicated not by cure but rather by delaying or avoiding complications, disability, or death.1

Medicines are necessary to this care, but their effectiveness requires consistent disease management with sophisticated monitoring and adjustment. When care is poor, irregular, unavailable, or unaffordable, the optimal use of medicines is unlikely, and their benefits in health outcomes and cost savings are much reduced.29 Much public-sector chronic disease-related care in emerging markets is dysfunctional, and good-quality private care is limited or financially unreachable by the middle class and below.3,6

Because a chronic disease medicine’s value depends on its being prescribed, monitored, adjusted, and integrated with other medicines and services, a medicine can deliver less value as a result of uncoordinated care.30 Decreasing the value added by a medicine decreases the demand for it, independent of decreased demand as a result of high prices.31

Eventually, poor-quality care depresses the medicine’s value so much that patients fail to demand it, even at low prices. Advanced medicines and high-quality health care for a chronic disease are complementary goods: Consumption of one increases consumption of the other, and unavailability of one constrains demand for the other.32

The Chronic Disease Partnership Model
OVERVIEW We propose that a pharmaceutical manufacturer help establish and support enterprises in emerging markets to provide comprehensive, integrated, high-quality care, including medicines, for specific chronic diseases. Starting as networks of clinics or specialty hospitals in one area, these enterprises could grow rapidly, possibly through franchises.

A pharmaceutical manufacturer would not provide comprehensive care and medicines on its own. Rather, it would partner with local health services providers and resources; advocacy or support groups; and other actors, including governmental entities, NGOs, or private businesses. Global NGOs or institutions with relevant expertise could provide support and technical guidance. Several pharmaceutical manufacturers, with complementary rather than competing medicines and roles, could participate in a single enterprise.

Participation in a chronic disease partnership should be commercially and strategically attractive for a pharmaceutical manufacturer and other commercial actors. Such participation would shift the manufacturer’s business model from simply responding to demand for medicines, mainly for high-income groups, to actively supporting an enterprise that provides both health services and related medicines.

The chronic disease partnership model may be especially timely from the perspective of major multinational pharmaceutical manufacturers. Facing diminished profitability and growth prospects in rich-country markets, these companies are increasingly focused on expanding their sales and other activities in emerging markets, which formerly played only a minor role in their core businesses.23,33,34 These companies are searching for business models allowing them to benefit from the growing appetite of emerging markets for advanced medicines, especially for chronic diseases.35,38

The chronic disease partnership model responds to this search. We present the basic principles of our model below.

FORM AND MISSION A chronic disease partnership would be a stand-alone entity. It would provide integrated health care services and medicines for a specified noncommunicable chronic disease, as well as common complications and related illnesses. Integrated care would include consultations, medicines, diagnostic tests, procedures, and therapies, delivered as a package by teams of doctors, nurses, pharmacists, and other health care workers.

Each partnership would serve patients in a specific geographical area. The partners would jointly agree on the content of the package of services and medicines provided, based on local needs and conditions.

CHRONIC DISEASE PARTNERSHIP INPUTS A chronic disease partnership would require inputs from several sources. Its key function would be to collect and organize required inputs into an integrated care and medicine delivery system.

Many inputs would be obvious and tangible: physical infrastructure and equipment; health workers; patient outreach and education systems; managerial, administrative, and information technology functions; and pharmaceuticals and other consumables. “Softer,” less obvious inputs would also be important—such as support from local NGOs, patient or community groups, health worker unions or professional organiza-
tions, and even large local employers. Support by the Ministry of Health and other regulators would be critical.

**Status as a Partnership** A chronic disease partnership would not be a partnership in the legal sense, but rather in the sense that it would organize and align the interests and activities of diverse stakeholders or partners. The core partners would be the providers of key inputs, each of which would be supplied on arm’s-length terms agreed upon with the partnership.

In this way, the partnership would serve as a general contractor, with its partners as subcontractors functioning according to contractual relations. Partners that are commercial entities—including nonprofit entities partly run as businesses—would supply inputs to generate revenues and profits for themselves. Noncommercial partners, such as NGOs or governmental entities, would supply inputs to further their respective social missions or meet their public obligations.

The chronic disease partnership itself would be nonprofit. The commercial partners would derive profits from their own provision of goods or services to the partnership. The partnership would not seek to generate profit for itself and would instead be focused solely on its mission to deliver high-quality care and medicines.

**Revenue from Third-Party Providers or Purchasers** A chronic disease partnership could earn revenues from third parties that have obligations to provide care for the relevant chronic disease. Most emerging markets have many such third parties: public health systems, social insurance schemes, private health insurers, and even private for-profit hospitals and clinics. Many of these are unable to care for the chronically ill on a clinically effective and financially feasible basis.

These third parties would contract with the chronic disease partnership to provide its care and medicines to their patients. These parties’ willingness to enter such arrangements would depend on whether the chronic disease partnership’s care constituted good value for the money.

**Revenue from Patients** A chronic disease partnership could also receive direct payments from patients. With few exceptions, health care spending in emerging markets is dominated by out-of-pocket payments at the point of service for care, or at the pharmacy for medicines.

These payments typically include substantial user fees, even in government-operated facilities. Patients can also pay high markups for medicines prescribed and dispensed by hospitals or physicians. What’s more, patients are also often required to make under-the-table payments directly to health workers.

Whether or not out-of-pocket payment is sound from a public health perspective, or fair politically, ethically, or economically, middle- and lower-income groups in emerging markets are very familiar with buying their care out of pocket. A chronic disease partnership receiving such payments from patients would resemble other sources of health care in that country.

Because a chronic disease partnership would treat conditions that are often asymptomatic for extended periods, with high variability as to the timing and extent of complications and costs, the partnership could charge flat periodic payments, rather than fees for specific services or medicines. This type of payment would add a risk-pooling or social insurance element to the concept. Flat periodic fees could also improve outcomes through more-consistent use of medicines and related clinical support by patients, who would no longer need to ration medicines or care to control short-term costs.

**Organization and Cost Structure** A chronic disease partnership would provide care and medicines systematically, following evidence-based guidelines and protocols; using health workers at their highest level of competence; and integrating functions, specialties, and information. Several impressive for-profit providers in India exemplify this approach, delivering high-volume high-quality care at reasonable costs. Examples include Narayana Hrudayalaya Hospitals,41 Dr. Mohan’s Diabetes Specialties Centre,42 the Aravind Eye Care System,43 and LifeSpring Hospitals.44

The chronic disease partnership model could combine this type of care delivery with the provision of advanced medicines obtained at low prices. The result would be comprehensive, chronic disease–specific care systems that are more rational, cost-effective, and efficient than those in rich countries, along the lines that advocates of “frugal innovation” in emerging markets have suggested.15

Clinical care providers will be key core participants in chronic disease partnerships. We believe that lower cost levels can be achieved in emerging markets than in US or Western European systems, even apart from the partnership’s access to advanced medicines from its pharmaceutical manufacturers at low prices.

**Governance** A chronic disease partnership would be governed to avoid control by any single partner or set of partners with common interests. The partnership would fail in its mission and also in furthering the interests of its partners if it were perceived as captive to a particular stakeholder or merely an agent of a multinational corporation.
**ROLES OF A PHARMACEUTICAL MANUFACTURER**

A pharmaceutical manufacturer’s principal role in a chronic disease partnership would be to supply its medicines to the partnership at prices and on terms negotiated between the company and the partnership. For medicines with low marginal production costs—in other words, most medicines other than biologics—the pharmaceutical manufacturer could price its products at a flat amount per patient, or even a flat amount for all of the partnership’s requirements over a specified interval, instead of the usual per pill or per dose basis.

This pricing strategy would benefit both the partnership and the manufacturer in budgeting and the certainty of cash flows. This in turn would compensate the manufacturer for the supply of its medicines at low margins and reward the partnership for obtaining the medicine exclusively from the manufacturer.

The manufacturer would supply medicines directly to the partnership, rather than through normal distribution channels. This would avoid a sizable cost, since markups over manufacturers’ prices in emerging markets are usually high in both the public and private sectors. In fact, these markups are often a larger component of patients’ costs than the manufacturer’s selling price.3-9

The pharmaceutical manufacturer could be an important catalyst and organizer of a chronic disease partnership. It could also provide clinical and disease management expertise regarding the relevant chronic diseases. The cost to a pharmaceutical manufacturer of nonmedicine inputs could be incorporated into the price of medicines to the chronic disease partnership, much like marketing expenses. Alternatively, the manufacturer could be paid separately for these inputs.

**MULTIPLE PHARMA PARTNERS** A chronic disease partnership with multiple pharmaceutical manufacturer partners having complementary product portfolios might fare better than a partnership with a single corporate partner. Besides supplying a broader range of needed medicines, having multiple pharmaceutical partners would demonstrate that the partnership is not captive to a particular manufacturer.

**DIFFERENTIAL PRICING** A chronic disease partnership would constitute a distinct, segmented market for a pharmaceutical manufacturer, reducing the two arbitrage risks, mentioned above, which typically limit differential pricing. The risk of seeing its lower-price drugs sold at higher prices in other markets would be greatly reduced, because the pharmaceutical manufacturer would supply its medicines directly to the chronic disease partnership and know how they were used.

The risk to companies of having their lower partnership prices used against them in negotiations with other buyers would be limited, for three reasons.

First, patients and health systems procuring chronic disease treatment from the chronic disease partnership would purchase care and medicines as a single integrated package. The prices to the partnership would therefore remain opaque. Second, because the drug maker would not use per pill or per dose prices in most cases, its prices to the partnership would not be comparable to those in other markets. Finally, the company’s relation with the partnership would be broader, more complex, and longer term than that of a mere provider of medicines, and thus not comparable to its supplier relationships in rich-country markets.

A pharmaceutical manufacturer could set its price to the partnership on two different bases. One could be at the profit-maximizing point where marginal cost equals marginal revenue, treating the partnership as a distinct market. A second could be at prices closer to marginal cost, if the company wished to focus on market expansion rather than immediate profit, or if there were competition from other suppliers or substitute products.

In an emerging market, the difference between the profit-maximizing price and one closer to marginal cost would be small, especially relative to the distance between marginal costs and actual prices in rich countries for on-patent products. For the pharmaceutical manufacturer, even thin margins on sales of medicines to chronic disease partnerships should be attractive, because the profit generated would be purely incremental.

**USE OF GENERIC MEDICINES** In addition to advanced medicine, treatment of chronic diseases requires many medicines, mostly available as unbranded generics in emerging markets. These generic medicines are, however, often underused in emerging markets, especially among middle-class patients, because of concerns about quality and efficacy.34,46,47

Patients and prescribers have no way of evaluating on their own which unbranded generics are of good quality and which are not. Accordingly, they tend to choose more-expensive branded generics as a proxy for quality. A chronic disease partnership could evaluate and monitor medicine quality and save costs by procuring high-quality, low-cost generics, and then provide these medicines to patients as part of its care package. Patients concerned about medicine quality would worry far less about products dispensed directly by a chronic disease partnership than about products purchased independently in
the retail marketplace.

**IMPORTANCE OF LOCAL PARTNERS** Local entities would play essential roles in a chronic disease partnership. Doctors, nurses, and other personnel, together with infrastructure, would be essential components of the enterprise and would also determine how the partnership operates in the local context. Existing models for integrated chronic disease treatment, such as the Chronic Care Model, stress the key role played by informed patients and communities, and the importance of care that “patients understand and that fits with their cultural background.”

Current “base of the pyramid” literature likewise stresses the need to create innovative connections between businesses and their local communities.

Local partners thus would help create and mediate relationships between the chronic disease partnership and its key stakeholders: patient populations, health care workers and organizations, local and national governments, and existing public- and private-sector health care providers. In addition, because a partnership’s revenues are unlikely to come solely from direct payments by patients, local actors would need to help persuade the public sector and social insurance schemes to support or fund their patient population’s receipt of high-quality chronic disease treatment from the partnership.

**DEFINING ‘SUCCESS’ AND SCALING UP** Success for a chronic disease partnership would consist of a new entity delivering high-quality chronic disease care to a patient population at cost levels consistent with the resources available to them, and producing positive health outcomes. At the same time, a successful chronic disease partnership would generate positive financial returns for the commercially oriented partners and positive social returns for the noncommercial partners.

Successful chronic disease partnerships could grow rapidly, more like a profitable business than a government- or donor-funded program, for several reasons. First, the potential markets for care by a chronic disease partnership are huge. Second, all partners would benefit, whether through advancing commercial or noncommercial goals. Third, the structure and organization of a partnership could become highly standardized, allowing for rapid expansion.

One possible strategy is franchising chronic disease partnerships for specific chronic diseases, with common care delivery systems and consistent quality and cost-effectiveness.

**Conclusion**

The chronic disease partnership model is intended to be practical, commercial, and realistic for the stakeholders involved. It is presented here as a blueprint for pharmaceutical manufacturers and others to consider and apply.

We agree that the blueprint requires additional specification, using real numbers and specific contexts, to assess the model’s feasibility. We also recognize that any application will require adaptation to local conditions, based on many factors. These factors include the selected chronic diseases, the relevant medicines, the operation and financing of health care in the emerging market, the capacities of local partners, and the willingness of pharmaceutical manufacturers to invest in a complex initiative based on a new business model.

We believe that this model has the potential to harness shared interests between public health and private business to address the growing challenge of chronic diseases in emerging markets.

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**NOTES**


4 Low-income countries, as classified by the World Bank, have annual per capita incomes below US$975; middle-income countries’ incomes range from that level up to US$11,905.


7 Mendis S, Fukino K, Cameron A, Laing R, Filipe A, Khatib O, et al. The availability and affordability of selected essential medicines for...
Goroff’s current work and research interests, combining his corporate and legal background with his public health training, address cross-sector partnerships between commercially driven private-sector entities and mission-driven public sector and civil-society groups.

Reich and Goroff note that in writing their *Health Affairs* paper, they sought approaches through which “Big Pharma companies could expand their presence in emerging markets, while meeting the public health challenges of chronic diseases.” They point out that their collaboration “is itself a cross-sector partnership,” whereby they “have shared aims and values, but divergent perspectives and strengths, in one case grounded in extensive commercial experience and in the other in the global health community.”

Reich is the Taro Takemi Professor of International Health Policy and director of the Takemi Program in International Health at the Harvard School of Public Health. Reich’s long-standing interests in public-private partnerships are reflected in his previous work, including helping the Japanese government in preparing its global health proposal for the 2008 G8 summit in Tokyo. He has also served on scientific advisory groups for the Schistosomiasis Control Initiative, the International Trachoma Initiative, and the Special Programme for Research and Training in Tropical Diseases.

Reich received a doctorate in political science and a master’s degree in East Asian studies from Yale University. His current research addresses the political dimensions of public health policy, health system reform, and pharmaceutical policy. His recent books include *Access: How Do Good Health Technologies Get to Poor People in Poor Countries?*; *Getting Health Reform Right: A Guide to Improving Performance and Equity;* and *Public-Private Partnerships for Public Health.*