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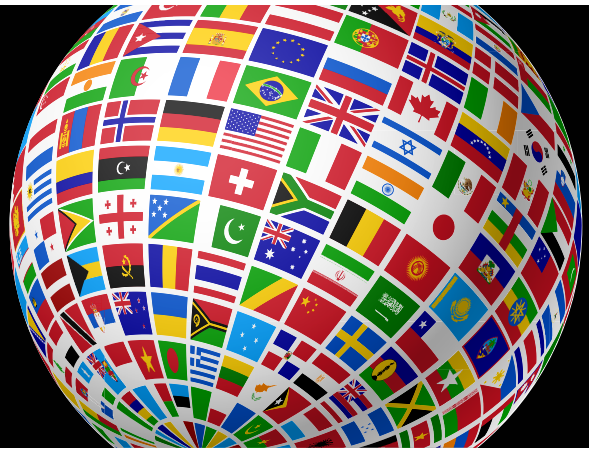
High-value health care
Innovative approaches to global challenges



Executive summary

Most health care systems around the globe need new strategies to improve outcomes and hold the line on costs. Today's leaders are looking for innovative, high-value solutions to critical challenges such as addressing social determinants of health; better aligning economic incentives with desired outcomes; putting patients at the center of care; improving chronic care management; and achieving better patient adherence to prescribed treatment regimens.

To spotlight successful strategies for producing high-value health care, the US Deloitte Center for Health Solutions talked to industry leaders and examined evidence from health system innovators around the world. Health care organizations globally—providers, payers, and life sciences companies—could benefit by adapting and adopting the successful models these groundbreaking organizations have pioneered to meet local needs and circumstances. This article's case studies illustrate how successful initiatives tend to take a multi-pronged approach and leverage new technologies, insights, and business models to connect the right patient to the right solution at the right time. Innovative technology-based solutions—software, devices, web-enabled tools—can support new health care models. But to produce real change in health outcomes and bend the cost curve, health care models themselves also must be innovative.

The quest for high-value health care

Deloitte's *2016 Global health care outlook* provides insights into emerging trends and environmental developments affecting the global health care sector.[1] In this paper we leverage those insights to examine how local and regional health systems are taking on various health care challenges. We focus on programs and initiatives that:

- Address social determinants of health
- Realign health care providers' economic incentives
- Redesign health care delivery to put patients at the center
- Improve management of chronic health conditions
- Increase adherence to prescribed medication regimens

To shed light on promising paths forward, we performed a broad-ranging literature review and consulted experts at Deloitte and organizations on the front lines of health care delivery innovation.

Vital Signs: How to deliver better health care across Europe[2]

Focusing on the European experience, a July 2016 Deloitte report identified seven "vital signs," or markers of a thriving health care system, namely: prevention and health promotion; primary care; productive hospitals; patient engagement and empowerment; palliative and end-of-life care; population health management; and partnerships among industry, providers, and academia. By measuring and tracking these signs, a country's overall health care system can be assessed and analyzed.

Addressing social determinants of health: Health Leads (United States) and Connecting to Care (Saskatchewan, Canada)

A growing body of evidence shows that social needs, including housing and other environmental factors in patients' lives, are at least as important as medical care in contributing to population health.[3] Many health conditions, including high-cost chronic illnesses such as cardiovascular disease, type 2 diabetes, and asthma, start or worsen when basic human needs—such as shelter, food, clothing, and safety—aren't adequately met.[4] Furthermore, in a typical, service-oriented health care system, people with complex and interrelated conditions, including substance addictions and behavioral health problems, are not always well served.

The Health Leads program in several US cities and the Connecting to Care program in Saskatchewan, Canada, are two innovative approaches to address social needs that significantly impact health outcomes and costs. Although their models differ, each has shown promising results in cost-control potential and health-outcome improvement by helping patients in ways that extend beyond the traditional prescription pad and office visit.

Overview

Health Leads	Connecting to Care
Launched in 1996 as a test program in Boston, Health Leads today is a $17.5 million organization serving patients through hospital clinics and community health centers across the US.[5] Health Leads works with health care providers to establish interventions that address patients' unmet social needs, including food and housing, by connecting them to local community resources.	Launched as pilots in the cities of Regina and Saskatoon in 2015 with initial government funding of 1.5 million Canadian dollars, Connecting to Care builds on the "hotspotting" approach, which mines administrative data to identify the subset of patients who account for an outsized proportion of health care utilization and costs.[6] According to the Saskatchewan Health Quality Council, one percent of Saskatchewan's patients accounted for approximately 21 percent of hospital costs.[7] Connecting to Care uses proactive outreach to prevent hospitalizations and emergency room (ER) visits by focusing on timely use of community-based services, including support for medical, mental health, and addiction treatments, as well as assistance with social needs.

Approach

Health Leads	Connecting to Care
Patients who visit hospitals or clinics partnering with Health Leads are screened for social problems likely to affect health, such as home utilities that have been shut off or inadequate nutrition. Providers refer patients to a trained workforce, such as community health workers or college students. This workforce uses Health Leads Reach™, the organization's proprietary social needs case and resource management tool, to search for and connect patients to local social service organizations to help with their non-medical needs. Follow-up with patients, through phone calls and HIPAA-compliant texting and email, ensures that barriers are removed and confirms that connections to these resources are made. Integration of Health Leads Reach with the provider's electronic health records can help increase care coordination throughout a health system as well as with other provider organizations.	A team of providers, including a nurse, counselors, and wellness advocates, coordinates and oversees personalized plans for each patient in the Connecting to Care program. Patients are selected on the basis of their prior health care use and identified needs, as well as health care provider referrals. Technology plays a critical role in the program, including use of electronic health records (EHRs), connections with community support partners, and mobile phones to check in with clients, when needed, such as reminding enrollees of upcoming appointments.

Outcomes

Health Leads	Connecting to Care
In 2016, nearly 600 workforce members connected more than 16,000 patients and their families to social service resources. Health Leads-supported clinicians were 70 percent more likely than their peers to report that their clinic has adequate support in securing needed resources for patients. This increased connectivity to social support has improved health and patient satisfaction outcomes. An internal evaluation of Health Leads-supported clinics found that chronic conditions improved when social needs were better met, with meaningful improvements in risk factors like patient cholesterol and blood sugar levels.	While the two pilot projects' formal evaluations are not yet publicly available, the Regina pilot has reportedly seen reductions in both ER visits and hospitalizations. One patient's hospital inpatient days were reduced by 84 percent (from 120 days in the previous year to 20); each day spent out of the hospital versus in it saved an average of 1,400 Canadian dollars.[8]

Lessons and implications

The Health Leads model, which focuses on connecting patients to community resources and integrating their social needs with health care services, could be ideal to replicate in programs where health care providers share in savings attained through improved patient health and hospitalization reductions. In the same vein, the Connecting to Care program shows that liaisons focusing on an individual's needs, rather than the provision of a particular type of medical service, can be effective in averting costly hospitalizations and ER admissions. Both of these innovative approaches show that addressing non-medical as well as medical needs and, more generally, treating patients holistically, rather than just addressing their symptoms, can result in meaningful improvements in health outcomes and potential cost reductions.

Alignment of providers' economic incentives: Gesundes Kinzigtal (Germany) and the Pacific Business Group on Health's C-section reduction program (California, US)

Reimagining and reconfiguring economic incentives so that providers are rewarded for doing the right thing at the right time to support their patients' health remains a critical frontier in the push towards high-value care. Germany's Gesundes Kinzigtal and California's Pacific Business Group on Health Caesarean-section (C-section) reduction program are two examples of successful provider incentive realignment.

Overview

Gesundes Kinzigtal	Pacific Business Group on Health C-section reduction program
Founded in 2005, Gesundes Kinzigtal is a joint venture between a network of physicians in Kinzigtal, Germany, and a Hamburg-based health care management company, OptiMedis AG. Its population-based integrated care initiative is a shared savings model that has demonstrated both cost and quality improvements.	In 2014, a California-based purchasing cooperative known as the Pacific Business Group on Health (PBGH) sought to improve maternity care outcomes and costs by reducing the C-section rate in three member hospitals. Between 1997 and 2008, C-section rates rose nationally by over 60 percent (from 21 percent to 33 percent). When a C-section is, on average, twice as expensive as a vaginal birth, the total cost of this trend can rise quickly.[9] The fact that physician reimbursement is significantly higher for C-sections versus vaginal births (in California, $19,000 versus $11,500), has been cited as one reason why efforts to reduce the C-section rate have had little success.[10] The PBGH C-section initiative is one of the first to demonstrate notable success in reducing the overuse of C-sections.

Approach

Gesundes Kinzigtal	Pacific Business Group on Health C-section reduction program
Gesundes Kinzigtal has contracts with two German sickness funds to manage the health of about 35,000 people. Although only about a third of the eligible residents have actively enrolled in its integrated care program, Gesundes Kinzigtal is responsible for the health outcomes of its entire covered population, regardless of enrollment status. Gesundes Kinzigtal providers share the savings with its sickness fund payers when costs fall below nationally determined benchmarks.[11] Although based on a fee-for-service (FFS) compensation structure, provider financial incentives are aligned to health outcomes through performance bonuses tied to losing weight, quitting smoking, or improving clinical measures of health, such as A1c for diabetic patients.[12]	The PBGH initiative relies on a four-part strategy: • Redesigning payment systems to eliminate provider payment incentives favoring C-sections over traditional delivery • Leveraging data for quality improvement, including providing doctors with feedback on their C-section rates relative to their peers • Implementing consumer education and decision support • Revising health benefits to provide coverage for midwives and doulas

Outcomes

Gesundes Kinzigtal	Pacific Business Group on Health C-section reduction program
A study conducted using data from 2004-2011 found that there was a decline in overuse, underuse, and misuse of health care in the Kinzigtal region, as well as improvements in patient experience.[13] Cost growth has also slowed: the Gesundes Kinzigtal integrated care initiative generated 16.9 percent savings in overall health care spend between 2006 and 2010. A drop in hospital admissions led this cost decrease: Between 2005 and 2010, emergency hospital admissions increased by only 10.2 percent for patients in the Kinzigtal region, compared with 33.1 percent in a similar region.[14]	The initiative succeeded in reducing the use of C-sections by 20 percent in a single year, for a savings of $5 million; furthermore, the program saw no increase in reported complications.[15]

Lessons and implications

The Gesundes Kinzigtal approach of aligning provider incentives with desired health and spending outcomes could provide valuable lessons in countries such as the United States, where the accountable care movement seeks to incentivize health care providers to engage in population health management.[16] Likewise, the PBGH initiative's success could be replicated elsewhere. Indeed, the California HealthCare Foundation announced in 2016 its plans to help at least 60 hospitals—a quarter of all those in the state—launch similar programs, and it provided funding to create a toolkit leveraging lessons from the PBGH initiative.[17] These innovative models show that, when provider incentives are aligned so that they more directly benefit from quality improvements and cost savings, the cost curve can be bent and health outcomes can be maintained—and even improved.

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Patient-centered care: Kaiser Permanente HealthConnect (California, US) and Ribera Salud (Spain)

Research indicates that patient-centered care can improve the experience for patients, their families, and their health care team members.[18] As Kaiser Permanente's HealthConnect and Spain's Ribera Salud initiatives show, this patient-centered care delivery, potentially enabled by new health information technology (HIT) solutions, could help improve health outcomes and lower costs.[19]

Overview

Kaiser Permanente HealthConnect	Ribera Salud
Kaiser Permanente, an integrated managed care consortium based in Oakland, California, has invested more than $4 billion since 2004 in HealthConnect, a health information system geared towards optimizing the patient experience and giving patients the tools they need to manage their own health.[20]	Launched in Valencia, Spain in January 1999, Ribera Salud is an integrated care company with a patient-centered orientation. In this initiative, the regional government maintains ownership of public hospitals and health care facilities but engages Ribera Salud as a private contractor to manage and maintain primary, acute, and specialist care services in exchange for a fixed annual capitation payment.

Approach

Kaiser Permanente HealthConnect	Ribera Salud
An important system component is the web-based portal, My Health Manager, a personal health record system used by half of the health plan's adult members. The portal provides patients with a way to review their medical records, schedule appointments, and consult health care professionals through e-mail, video, and audio technology.[21] If desired, patients have the option to obtain test results directly, as soon as they become available, without waiting for review by and outreach from their physicians. Furthermore, patients can receive automatic and secure messages with prompts intended to foster adherence to treatment regimens, as well as regular reminders to aid in appointment scheduling.	Ribera Salud uses a tightly integrated clinical and business model with considerable consumer choice, a rigorous management culture that adheres to high standards of quality and consistency, and a networked health information system shared among all service providers. Since Ribera Salud is responsible for the cost when consumers seek care outside the system, providers have strong incentives to maintain high levels of clinical and customer service quality.

Outcomes

Kaiser Permanente HealthConnect	Ribera Salud
Kaiser Permanente has reported that many of its regional systems already conduct more than half of visits virtually.[22] Patient satisfaction with this mode of interaction is overwhelmingly positive. For urgent but non-life-threatening cases, Kaiser Permanente reports satisfaction rates of over 90 percent for patients who receive care and advice by phone or secure video.[23] Furthermore, health outcomes appear to have improved. Diabetes patients who used the portal to order medication refills showed a six percent improvement in medication adherence, as well as lowered LDL levels, compared to patients who did not use the system.[24]	Several recent studies found that the average cost per patient was between 23 and 38 percent lower in the areas where Ribera Salud operates relative to other regions in Spain.[25] Ribera Salud evaluations have shown significant successes relative to other hospitals in the area, including: • Important improvements in care for elderly patients with chronic care needs over a two-year period (2012-2014), including 28 percent fewer inpatient hospital admissions, 16 percent reduction in ER visits, and 26 percent fewer hospital readmissions[26] • Higher outpatient major surgery rates: Eighty-five percent of major surgeries were undertaken as outpatient procedures at Ribera Salud compared to 76 percent overall in the Valencia region[27]

Lessons and implications

Kaiser Permanente's HealthConnect experience shows the tangible benefits of HIT-enabled care models that put patients in the driver's seat and provide tools and resources that can help them take more active ownership of their health care. Similarly, Ribera Salud demonstrates the feasibility and value of putting the patient front-and-center, and of bridging the traditional silos of primary, community, and hospital services, among which a patient's preferences and identity can be lost. While advanced information systems are important components of both delivery models, the true innovation—and that with potential to be replicated elsewhere—is structuring care delivery to better enable patient choice and provide tools to manage their own health.

Patient-centered care delivery, potentially enabled by new HIT solutions, could help improve health outcomes and lower costs.

Addressing inadequate management of chronic health conditions: CASALUD (Mexico) and Blueprint for Health (Vermont, US)

Chronic health conditions, also known as non-communicable diseases, are prevalent, expensive, and deadly. The US Centers for Disease Control and Prevention (CDC) estimates that half of all adult Americans suffer from at least one chronic condition—such as heart disease, stroke, cancer or diabetes—and that one in four people suffers from two or more.[28] Chronic cardiovascular disease, chronic respiratory disease, and diabetes account for more than 25 percent of deaths globally.[29] Eighty-six percent of US health care spending is for individuals living with one or more chronic health conditions and statistics from other high- and middle-income countries paint a similar picture.[30]

Mexico's CASALUD and Vermont's Blueprint for Health initiatives, described below, illustrate different approaches to improving chronic care management.

Overview

CASALUD	Blueprint for Health
The Carlos Slim Foundation (Fundación Carlos Slim) launched the CASALUD model in 2008. Its goal was to reengineer the delivery of primary care services in Mexico by providing mobile health tools, building clinician capacity, and training clinicians to improve non-communicable disease (NCD) management by applying technology innovations that better engage patients and health care professionals.[31] CASALUD is innovative for taking health care to where the patients are, rather than requiring patients to seek-out services themselves.	Established in 2008 and expanded and refined over time, Vermont's Blueprint for Health is a state-led, nationally recognized initiative aimed at transforming the way primary care and comprehensive health services are delivered and paid for. Its patient-centered medical home (PCMH) approach uses multidisciplinary care teams to strengthen primary care for patients with chronic health conditions; this keeps patients in better health and reduces costs by minimizing the need for hospitalizations and expensive medical procedures. Participants in the initiative include the state's three major commercial insurers, Medicaid, Medicare, the state of Vermont itself, and a large self-insured employer. As of December 2014, 58 percent of the primary care practices licensed in Vermont were operating as PCMHs.

Approach

CASALUD	Blueprint for Health
CASALUD deploys innovative technologies such as its MIDO® Mobile Module Cart, an all-in-one, self-contained system (and standardized training) that facilitates a proactive approach to disease detection and offers promise in preventing or slowing the rate of disease progression. The technology is made available to participating primary care clinics and includes tools to measure and track blood pressure, blood glucose, and weight, which are particularly relevant for patients with diabetes and cardiovascular disease, conditions increasingly widespread in Mexico. The MIDO® Backpack is its portable version, containing technology and tools designed for worker mobility. This unit enables health care workers to assess chronic conditions in patients' homes or in public areas where people congregate, such as the metro in Mexico City or markets in less urban areas.[32]	The Blueprint for Health approach to care is holistic rather than disease-oriented, with multidisciplinary care teams typically including nurse coordinators, behavioral health counselors, and social workers.[33] Blueprint for Health participation requires that primary care practices have a strongly patient-centered approach. This means that some practices have to make changes in how they work, including investing in HIT.

Outcomes

CASALUD	Blueprint for Health
The Carlos Slim Foundation convened a strategic partnership with the Ministry of Health to deploy the CASALUD Model nationwide. To date, it is operating in more than 130 clinics in 27 states. One of its innovations, the Chronic Disease Information System, a database for capturing patient data on chronic disease care, operates in more than 12,000 clinics in 32 states.[34] CASALUD has reported improvements in patient self-management, clinician disease management, and informed clinical decision-making. It is currently analyzing data to show its improvements in outcomes and cost savings.[35] The potential impact is sizeable, given the large number of Mexicans suffering from non-communicable diseases including diabetes and cardiovascular disease. For example, diabetes is implicated in 14 percent of deaths in Mexico, with direct and indirect health care costs representing more than $1 billion annually.[36] In addition, the Carlos Slim Foundation has pushed a public agenda of transparency and accountability, making the results of its operation publicly available on its website.[37]	On average, patients using program-affiliated practices had lower annual expenditures (by $482) compared to those who did not, according to the program's 2015 annual report. A large proportion of the reduction in total expenditures was due to decreases in inpatient spending.[38] In 2014, patients in Blueprint practices had lower hospitalization rates and lower expenditures for pharmacy and specialty care. Furthermore, Blueprint participants scored better than non-participants on nine of 11 metrics used by the program to track effective and preventive care (e.g., cervical cancer screening, breast cancer screening, low back pain, diabetes indicators).[39] Based on the programs' first-year success, the state decided to increase payments to providers to further incentivize and support physician participation.[40]

Lessons and implications

CASALUD showcases the potential of an innovative, usable, technology-enabled care delivery model to treat patients where they are, rather than in more traditional care settings. The success of the CASALUD model could interest health care organizations and providers in areas with remote and difficult-to-reach populations, both in rural and urban environments. And because new payment models offer shared savings for improved health outcomes for all members of a particular population, including underserved groups, the realignment of economic incentives can help build the business case for investment by philanthropic and public service organizations and, potentially, by health care organizations.

The Blueprint for Health model demonstrates the potential of a PCMH model to manage chronic care conditions. Its "hub and spoke" system—which features a coordinating, patient-focused team that takes the lead in chronic care management and pulls in specialists and other care providers for their insight and services as needed—can serve as a roadmap for any health system interested in developing or refining a patient care model with a strong chronic care component.

Improving adherence to prescribed medication regimens: "Polypill" solutions in Europe and Latin America, Welldoc's BlueStar mobile application in the US

As the number of people living with one or more chronic conditions has increased, so, too has the number of complicated daily medication regimens needed to manage and treat these conditions. In the United States alone, 32 million people take three or more prescribed medicines daily.[41] Unfortunately, patients all too frequently don't take their medicines according to schedule.[42] With the cost of non-adherence estimated at up to $300 billion annually in the US and nearly $500 billion worldwide—including costs from avoidable hospitalizations, nursing home admissions, and premature deaths—innovative solutions are essential to countering the avoidable adverse health outcomes that drive-up health spending.[43]

A cardiovascular "polypill" and WellDoc's BlueStar app, described below, show how innovative technologies can enable workable solutions when other types of interventions alone, such as education or outreach, have produced only limited success.

Overview

Polypill	BlueStar
Combining drugs commonly prescribed together in a single pill—a "polypill"—helps patients adhere to their prescribed treatment regimens.	The BlueStar app, developed by WellDoc, is one of the first mobile applications approved for use by the US Food and Drug Administration to manage type 2 diabetes, and is eligible for reimbursement by a growing number of insurers when prescribed by a physician.

Approach

Polypill	BlueStar
A cardiovascular polypill is being used in some European and Latin American countries. The polypill includes a fixed-dose combination of a blood thinner (aspirin), a cholesterol-lowering drug (simvastatin), and an angiotensin-converting-enzyme inhibitor that works to stabilize vessel walls and blood pressure (ramipril).[44] The cost for this pill is low: in Latin America, for example, it costs between $14 and $18 per month.[45]	The BlueStar technology helps patients better adhere to their treatment plan, while also providing clinical decision support to the patient's provider (in the form of direct information uploads) to direct and optimize treatment decisions. The technology also enables patients to self-manage their diabetes through real-time motivational, behavioral, and educational coaching.

Outcomes

Polypill	BlueStar
A trial in Argentina, Paraguay, Italy, and Spain showed that this polypill resulted in 66 percent adherence to the treatment regimen, a 10 percent improvement over patients taking the three drugs separately. Polypill users experienced improvements in blood pressure and cholesterol management.[46] A recent study showed that in the UK, combining three cardiovascular drugs into a single pill could improve adherence approximately 20 percent over 10 years, thereby preventing 15 percent of cardiovascular events per 1,000 patients, compared to patients taking each drug singly. Economic analysis showed that the drug could be affordably priced at up to £12 per month.[47]	Research findings have shown BlueStar to be an effective tool for engaging patients in improving their diabetes-related outcomes. Studies have documented high degrees of patient engagement among both younger and older users of the app, as well as persistent use across all user age groups. Outcome improvements so far have been encouraging. The app has been shown to reduce blood glucose in users by 1.2 percent, and reduce A1C by about two percent.[48]

Lessons and implications

The cardiovascular polypill and the BlueStar app are technology solutions that health care providers and organizations can leverage in new business models to deliver high-value health care. While positive, the research on these solutions' effectiveness is quite new. If coupled with effective and aligned provider incentives and a strong emphasis on patient preference, or a strong team-based approach for understanding and addressing all of the factors impacting a patient's health, these technologies have the potential to solve the seemingly intractable problem of treatment adherence, a critical component of improved chronic disease management.

Multiple, multi-pronged routes to success

This article's case studies are a sample of innovative approaches being used to address some of today's key problems facing health systems around the world. Many of the approaches could inspire local initiatives by other health care providers, health plans, and governments.

Strong leadership and stakeholder support are essential to making an initiative work. With technology-aided solutions like the polypill or apps like BlueStar, prospective payers and physicians would benefit from education to help them understand how such solutions could help particular patient subgroups, as well as optimal ways to integrate them into a high-value health care delivery model.

Despite the potential challenges and requirements of replicating and implementing localized versions of the models illustrated here, doing so could be an important step forward in the quest to deliver high-value health care. Models that take a multi-pronged, technology-enabled approach may be most likely to yield success, since today's health challenges are complex and interrelated:

- Health Leads and Connecting to Care show that addressing social, non-medical needs can help improve patient health and reduce costs.
- Gesundes Kinzigtal and the Pacific Business Group on Health demonstrate that providers can lower costs when they share in the financial savings, or when financial incentives are aligned with doing the right thing at the right time.
- Kaiser Permanente's HealthConnect and Ribera Salud show that when health care consumer choice is expanded—encompassing preferences such as whether they want to interact with providers in person or virtually, or whether they prefer one clinic over another —health outcomes may improve and costs may fall.
- Vermont's Blueprint for Health and Mexico's CASALUD demonstrate that rethinking primary care and prevention strategies to better meet the needs of patients with chronic conditions may reduce costs and improve health outcomes.
- Technology-enabled solutions like a polypill or an app designed to help manage a chronic condition have the potential to improve treatment adherence, particularly if implemented as part of a high-value health care delivery model.

As they design care models for the future, health care providers and health plans in the US and abroad can learn and benefit from the experiences of those who have already forged new paths towards the common goal of delivering higher-value health care.

Models that take a multi-pronged, technology-enabled approach may be most likely to yield success.

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