

Diabetes Management: A Case Study to Drive National Policy Change in Primary Care Settings

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ABSTRACT

Despite medical advances, diabetes management remains a considerable challenge in the United States, with little to no improvement in patient outcomes and stark disparities in underserved communities. One acute challenge is that, as the US population with diabetes grows steadily—numbering 38.4 million people today—there are too few endocrinologists available to treat the disease and the burdens on primary care professionals, who treat more than 90% of cases currently, are staggering. This disconnect between need and care capacity presents what may be the greatest of many threats to the care of diabetic Americans. To understand what is required to solve this need-to-capacity mismatch, we examine the critical role of primary care professionals and propose national policy approaches to empower and improve the nation's primary care architecture for the nearly 12% of Americans who have diabetes. Policy recommendations encompass the integration of the chronic care model and the patient-centered medical home approach, expansion of workforce development initiatives, and payment reform to incentivize team-based care with the aim of ensuring equitable access to essential diabetes management tools. We urge policy makers to prioritize primary care workforce development, enhance reimbursement models, and implement strategies to mitigate disparities in diabetes care. Evidence reviewed here highlights the critical need for a comprehensive, multidimensional approach to diabetes management in primary care, emphasizing the importance of decisive action by policy makers to equip primary care professionals with the necessary resources and support to effectively address the nation's diabetes epidemic.

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Last fall, the *Washington Post* ominously reported, “[T]he United States is failing at a fundamental mission—keeping people alive.”¹ For more than 2 decades, a growing body of evidence has made clear the critical link between primary care and the health of a population.² Primary care systems care for people, rather than simply provide medical services to patients. A strong system of primary care emphasizes a person and their health as part of a community, benefits clinicians by using a team-based system of care, and incentivizes payments and payment systems that support all clinicians on the continuum of primary care. Despite long-standing evidence showing the link between investments in primary care and improved patient outcomes, reduced health system costs, and clinician satisfaction, there has been little progress in the last 20 years to bolster the nation's primary care system.³

Simultaneously, therapies and technologies have armed us with the ability to better treat disease, yet the health of our nation continues to decline. The culprit dragging down US life expectancy is the increase in chronic diseases such as diabetes, as well as associated common comorbidities such as obesity, hypertension, kidney disease, and heart disease. Compared with 2011, when 9.4% of Americans had diabetes, by 2030, an estimated 12.1% of the population will be living with the disease.⁴

Today, we have the knowledge, therapies, and technology to help people with diabetes understand their disease, monitor their glucose levels, and treat the underlying causes of their diabetes to live a longer and healthier life. Yet, studies continue to show that nationally, glycemic and blood pressure control are worsening, with some studies revealing that only 20% of diabetic people are meeting targets for controlling their blood glucose and cholesterol levels.⁵ We can improve care in these areas by empowering our primary care system to manage the complex care of the growing numbers of people with this disease.

Diabetes stands out among chronic conditions because of the complicated nature of its management. Its prevalence and high likelihood of management by

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a primary care professional (PCP) makes diabetes a prime case study to illustrate the link between a strengthened primary care system and improved health outcomes.

PRIMARY CARE AND DIABETES OUTCOMES

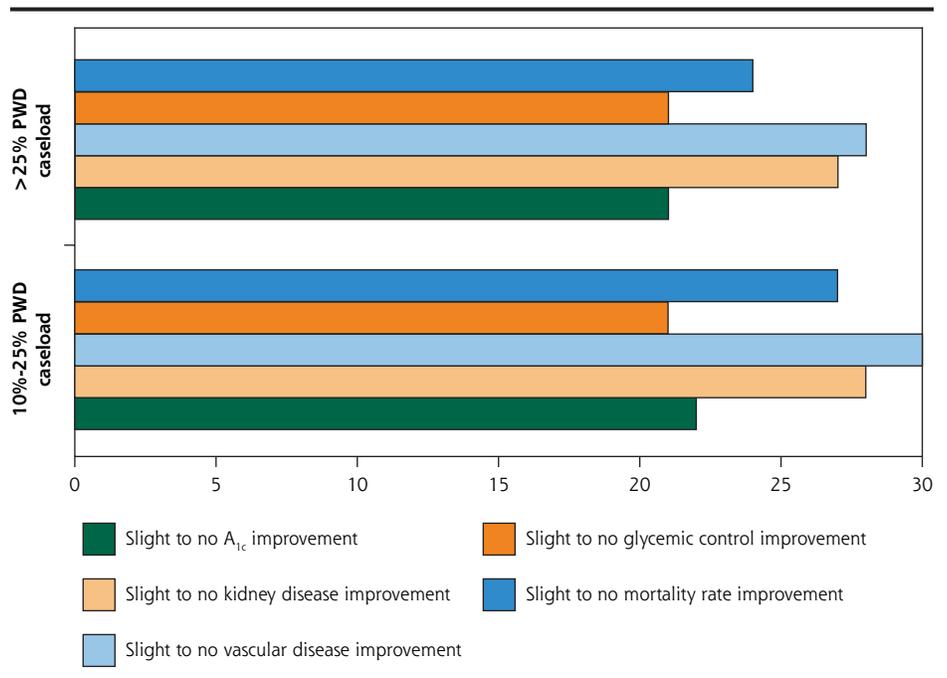
As the number of people with diabetes grows precipitously, diabetes health outcomes are generally not improving, and they are actually worsening in certain parts of the country and among specific populations.⁶ The steep discrepancies between classes of Americans in the diagnosis, management, and outcomes of diabetes and other chronic conditions is compounded by acute gaps in access to care in key US regions. Unsurprisingly, PCPs—physicians, nurse practitioners, nurses, physician assistants/associates, community health workers, and pharmacists—are working harder to keep up with the increasing needs of the US diabetic population.

Policy solutions aimed at addressing the challenges in the nation's primary care system have been proposed and tested for nearly 2 decades.⁷ There has been, however, only minimal investment in sustaining such solutions.^{8,9} For example, the temporary Medicare and Medicaid PCP payment rate increase under the Patient Protection and Affordable Care Act substantially improved primary care access, but funding expired in 2014, limiting its long-term impact.¹⁰ This underinvestment has resulted in numerous deficiencies in the nation's primary care system, many of which are having a disproportionate effect on people with diabetes.

One of the key factors driving the relationship between diabetes and primary care is the complexity of caring for people with diabetes. PCPs managing people with diabetes must consider glucose monitoring, insulin, and other medications for glucose control; additional medications for comorbidities; diet and exercise; and routine screenings to prevent common complications.¹¹ Coordination of various therapies, regular screenings, and multiple clinicians is time-intensive, especially given the likelihood that people with diabetes are managing several complications and comorbidities. Efforts to control glucose alone are labor-intensive for clinicians who are often stretched too thin to provide the services necessary to effect lifestyle changes patients need to make outside their physicians' offices.¹²

Another challenge is that diabetes is not a stand-alone condition. Ten years after a diabetes diagnosis, approximately 25% of patients have 5 or more diagnosed comorbidities.¹³

Figure 1. Primary care professionals' perceived lack of improved outcomes for PWD.



PWD = people with diabetes.

Source: John Zogby Strategies. Diabetes Care Survey. April 2023. Online survey sampling 525 primary care practitioners nationwide from April 21, 2023 to April 23, 2023. Reprinted with permission.

Margin of error: +/- 4 percentage points.

Comorbidities vary and are influenced by a person's age, race and ethnicity, gender, and presence of obesity at diagnosis.¹³ A PCP who treats an individual for diabetes is likely to be treating the same person for hypertension, heart disease, kidney disease, and/or mental health disorders. Those treatment plans must consider the complexity of an individual's overall health needs.

This complexity serves as the lens through which the stagnating outcomes for patients with diabetes are linked to a primary care system in need of reform. Through this lens, persistent problems facing the delivery of primary care—including insufficient staffing and resources, misaligned payment incentives, and barriers for nonphysician practitioners critical to the delivery of primary care—are amplified.

A closer look at the prevalence of diabetes treated in primary care reveals the outsized impact that providing care for diabetic people has on the primary care workforce as well as the lack of sufficient resources for this care in the primary care setting. Recently, the American Diabetes Association commissioned a survey by John Zogby Strategies to understand more about what PCPs are seeing in diabetes caseloads.¹⁴ As [Figure 1](#) shows, PCPs—primary care physicians, nurse practitioners, pharmacists, internists, and general practitioners such as pediatricians and geriatricians—had the same broad sentiment: over the past 20 years, many saw little to no improvement in critical measures such as glucose control, amputation (vascular disease) rates, and mortality. Although these inputs are limited to general clinician

observations, the contrast between them and the reported marked declines in US mortality—as well as improvements in survival rates—for cancer¹⁵ is notable, particularly because people with cancer get less of their health care in primary care settings during active treatment than do people with diabetes.

Relatedly, the survey data tell us that more than one-quarter of the PCPs whose caseload includes more than 10% of patients with diabetes perceive worse outcomes across all domains; in addition, these observations were consistent across PCP types (Figure 2).¹⁴ Again, these are observational generalizations. But in light of the consistency of responses across professionals, they should not be ignored.

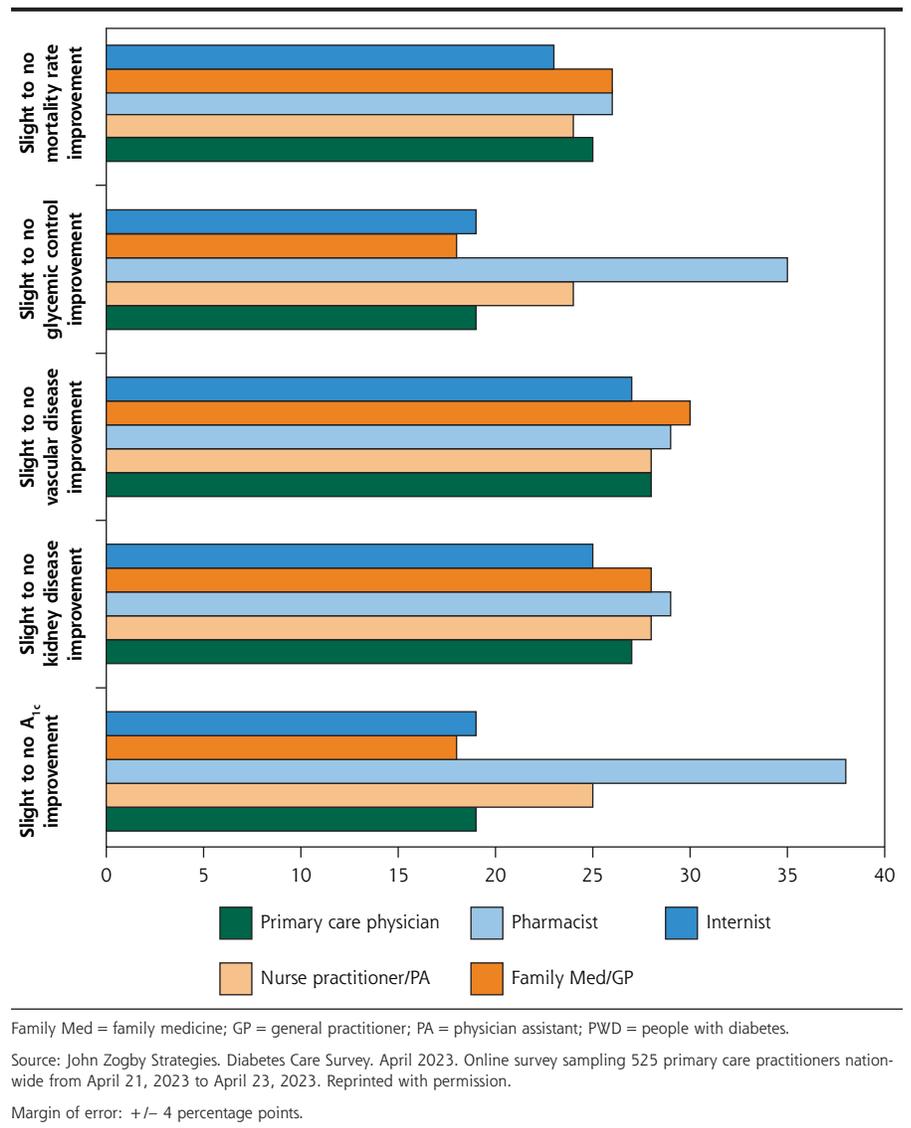
The burden on staff time to treat and support people with diabetes, who must undertake self-management outside clinician offices and for whom treatment guidelines and available interventions are constantly changing, is considerable. For those physicians, “following national recommendation guidelines for preventive, chronic disease and acute care would take a primary care physician 26.7 hours per day”¹⁶ for an average number of patients. The constraints on PCPs’ time and bandwidth impose an even greater burden on marginalized communities, where access to care resources is already limited, patient outcomes are already poor, and individuals more often seek care in the primary care setting rather than in a specialty setting.

A strong system of primary care would support a team-based approach to helping people with diabetes manage their care over time, taking into consideration increasing medical complexity. Yet, PCPs face myriad challenges that act as roadblocks to that care—at best, increasing health care costs for people with diabetes¹⁷ and at worst preventing the most vulnerable people with diabetes from accessing the information, therapies, and technologies that exist to help them maintain a healthier life.¹⁸

POLICY RECOMMENDATIONS

As the 2021 National Academies of Sciences, Engineering, and Medicine report on primary care points out, primary care is unlike most other types of medical care because it is intended for every person to use throughout their lives.¹⁹ It

Figure 2. Perceived lack of outcome improvements for PWD among practice professional type.



follows then that a strong system of primary care is the most effective and appropriate way to manage the health of people with diabetes, who range from young children to seniors, and who can be found in every demographic in every community in the country. To build a primary care system that effectively supports the needs of diabetic people, policy reforms must be comprehensive and include measures to bolster the workforce, align payment policies to support team-based care, and prioritize the reach of the primary care system to medically underserved populations.

Prioritize Team-Based Care

Numerous studies show the clinical benefit of team-based approaches to care for people with chronic conditions, including diabetes.^{20,21} The Community Preventive Services Task Force has recommended a team-based approach to care

of people with type 2 diabetes based on the review of clinical evidence on outcomes of patients that shows improvements in A_{1c} , blood pressure, and lipid levels.²² Involvement of other members of a primary care team in follow-up care for people with diabetes decreases the number of individuals who are “lost” after clinician interactions and therefore at an increased risk of developing complications. Yet federal policies, including those that support PCPs through payments, continue to undervalue the importance of nonphysician clinicians in the primary care setting.^{10,23} Moreover, research shows that nurse practitioners,²⁴ physician assistants/associates, pharmacists,²⁵ and other advanced care practitioners²⁶ help reduce A_{1c} levels, begin and adjust medications without physician approval, and generally improve clinical outcomes for people with type 2 diabetes in primary care settings.²⁷

Several clinical models can be particularly helpful for diabetes care. The chronic care model (CCM), for example, a long-standing and highly regarded model of care delivery, brings together communities, health systems, self-management support, care delivery systems, decision support, and clinical information systems to improve care for people with chronic conditions.²⁸ Where health care systems implement the CCM approach into primary care practices, studies show substantial A_{1c} reductions and improvements in preventive care measures for people with diabetes by, among other processes, supporting diabetes self-education through primary care clinicians and establishing patient-centered goals.²⁹

The patient-centered medical home (PCMH) took this approach further, establishing a primary care model prioritizing comprehensive, person-centered, coordinated, and accessible care, and building better relationships between patients and care teams. Research shows that PCMHs reduce emergency department visits while simultaneously increasing office visits, drive quality improvement and more effective use of primary care, and decrease costs to the health care system, including and especially to Medicare.³⁰

Public-private partnerships involving primary care teams, hospitals, health departments, universities, pharmaceutical companies, and health plans can support uniform, comprehensive clinician training using the CCM and PCMH for better diabetes management. Such integrated training can leverage limited numbers of endocrinologists, informing primary care teams about changing standards of care and clinical protocols. Additionally, focusing training resources on medical assistants and other members of a primary care team can improve patient outcomes by increasing access to preventive care. For example, relying on the CCM and PCMH to develop a protocol for foot examinations and tracking individuals for follow-up care leads to improvements in A_{1c} levels, blood pressure, and foot screenings—helping prevent expensive, unnecessary complications such as amputations.³⁰ Congress and the executive branch have tools to incentivize CCM and PCMH approaches in primary care by funding clinician training and information sharing across health care systems about best practices and patient needs.

Develop an Adequate Workforce

Team-based care models benefit primary care practices only if they are fully staffed with a range of professionals offering people with diabetes a treatment plan, counseling through lifestyle changes, technology assistance, and follow-up to support disease management. Federal policies exist to increase the likelihood of a medical student's choice of primary care as a specialty, and more must be done to broaden the financial pathways to support that choice. For example, Congress can expand existing programs such as the National Health Service Corps to increase loan forgiveness for physicians and other health care professionals who enter and remain in primary care practice for a period of time.

Consideration can also be given to supporting innovative training programs that aim to increase the number of primary care physicians who practice in underserved or rural areas. The University of Kentucky's College of Medicine, for example, piloted a Rural Physician Leadership Program in 2009 with the aim of bolstering the number of physicians practicing in rural parts of the state. According to the University, 92% of program graduates from Kentucky remained in the state, showing the value of localized efforts to increase the primary care physician workforce.³¹ Congress can also fund the build-out of primary care teams, addressing clinician concerns about insufficient time and resources to offer individuals adequate support to manage diabetes.³²

The primary care physician-specific workforce shortage underscores the centrality of other clinicians on primary care teams who likewise need more resources. Resource shortages are partly driven by outdated Medicare and Medicaid policies that may not reimburse practices for the full range of diabetes treatment and management services.^{33,34} Nearly 25 years ago, a now-discontinued Human Resources and Services Administration-funded pilot program showed that people with diabetes who received collaborative drug therapy management services from pharmacists in these networks achieved substantial improvements in A_{1c} levels, blood pressure, and cholesterol levels.³⁵ Improved patient outcomes based on collaborative, pharmacist-driven care persist today, with more recent studies showing that pharmacist-involved collaborative care leads to improvements in these measures as well.³⁶

Institute Payment Reform

The benefits of team-based primary care for people with diabetes are apparent and extensive, and Congress and the executive branch can incentivize this model in primary care by increasing reimbursement through health care programs for clinicians and their community partners. Recognizing that adequate reimbursement for all members of a primary care team improves patient support and care management, the Centers for Medicare & Medicaid Services has twice revised reimbursement policies to increase payments for services provided by “auxiliary personnel” such as community health workers and care navigators.³⁷ Congress and the executive branch should consider payment models to prioritize care

coordination and to help primary care clinicians form partnerships with specialists and receive support from other primary care clinicians and community-based resources.

Government reimbursement policy should also prioritize preventive care to improve the quality of life of people with diabetes and minimize costs by reducing common, costly, preventable procedures to address diabetes complications, in particular, amputations. Eighty-five percent of diabetes-related amputations are preventable,³⁸ and amputees with diabetes experience a substantially elevated risk of mortality after limb loss: 1 in 10 die within 30 days of surgery and 1 in 6 die within 90 days.³⁹ There has been meaningful clinical progress in amputation prevention in recent years allowing clinicians to intervene early in cases of peripheral artery disease and critical limb ischemia to prevent amputation with minimally invasive procedures that improve blood flow and address lower limb neuropathy. These procedures are generally not covered by federal health insurance programs, however, and routine tests for these vascular conditions are not adequately covered either.^{40,41}

Another payment area that deserves consideration is the lack of Medicare coverage for services that pharmacists provide. During the COVID-19 pandemic, when it became dangerous or difficult for many people with diabetes and others to get care in more traditional settings, reliance on and trust in pharmacists as health care professionals grew substantially.⁴² Today, there is a pharmacy within 5 miles of nearly every American, and pharmacists play a valued role in the care continuum.⁴² What pharmacists can do is controlled by their state pharmacy boards, but many boards allow them to administer vaccines and tests for communicable viruses, and some even permit pharmacists to prescribe continuous glucose monitors (CGMs).^{43,44} Although physicians are reimbursed for their services and nurse practitioners are as well, albeit at a reduced rate, pharmacists do not get paid to provide services they are allowed to provide.⁴⁵ As with all clinicians, this reality undercuts what could be a more robust effort for pharmacists to provide important care for people, and incentives for doing more of the things that pharmacists are already permitted to do makes common sense and accrues to diabetic patients' benefit.

More specifically, with respect to CGMs, merely 1 state—Idaho—allows pharmacists to independently prescribe CGMs,⁴⁶ and only a limited number of others allow them to do so in collaborative or consultative agreements with other prescribing clinicians.⁴⁷⁻⁵² Because CGMs are widely recognized for their benefit in managing blood glucose levels and controlling diabetes, there should be additional research to evaluate whether pharmacy-based CGM prescribing has yielded improvements in patient outcomes. If so, more state policy makers should consider allowing for this prescribing authority, and Medicare should likewise reimburse it.

Address Social Determinants of Health

Underpinning many of the proposed policy solutions to bolstering the primary care system for the sake of improving

outcomes for people with diabetes are the disparities in access to adequate care experienced by racial and ethnic minorities as a result of social determinants of health.

Improving access to high-quality primary care for people with diabetes among medically underserved populations would have an outsized impact because a greater proportion of racial or ethnic minority individuals with diabetes are seen in primary care practices as compared with specialist offices.⁵³ A recent study showed that among diabetic people, individuals from “racial and ethnic minority groups were substantially less likely to attain high-quality diabetes care” and therefore experienced “racial disparities in diabetes related health outcomes, including higher rates of both acute and chronic complications.”⁵⁴

A 2022 American Diabetes Association white paper on the associations among health care coverage, geographic location, and CGM access showed that individuals covered by Medicaid were the least likely to receive a CGM, especially if they were part of a historically marginalized group.⁵⁵ Medicaid enrollees taking insulin were 2 to 5 times less likely to receive a CGM than those covered by commercial insurance.⁵⁵ This access gap was greater among individuals who were part of historically marginalized groups and individuals living in more rural parts of the country—especially those on Medicaid.⁵⁵ Although states drive their own Medicaid coverage policies, the Centers for Medicare & Medicaid Services should require improved and more uniform Medicaid coverage policies for CGMs and other similar diabetes technologies within Medicaid as a vital health equity and diabetes management measure.

In addition, to improve access to high-quality diabetes care for racial and ethnic minority groups with higher diabetes prevalence, there must be more practitioners in primary care settings and Community Health Centers—especially clinicians from racial and ethnic minority groups. Lack of trust in the health care system and medical professionals can hinder care for these groups, and studies show that having a professional of the same race or one with whom a person identifies can reduce mortality.⁵⁶ Congress should leverage existing programs, such as the Graduate Medical Examination program, to attract candidates for primary care residency among racial and ethnic minority groups.

Finally, culturally appropriate self-management support should be a key consideration of PCPs who treat diabetic people from racial and ethnic minority groups, and cultural factors should be built into programs administered and evaluated by the federal government. Food preparation and perceptions of diabetes and chronic disease should be considered when tailored diabetes self-management education and support programs are designed, implemented, and evaluated in primary care settings. For example, studies of culturally appropriate interventions for underserved Hispanic patients with type 2 diabetes have shown that, across modalities, cultural tailoring improved disease management and patient outcomes, including A_{1c} levels and medication adherence.⁵⁷ Racial and ethnic minority groups and rural populations also need a seat at the

table with clinicians, community organizations, and other partners to address barriers to care access and design community-based services such as “cooking classes, exercise programs, nutrition counseling and self-monitoring assistance.”²⁸

CONCLUSIONS

It is evident that rapidly growing numbers of Americans with diabetes rely on primary care for diabetes management, and PCPs who are in short supply have limited resources to meet this challenge. Where PCPs work in teams that expand opportunities for interdisciplinary collaboration and community partnerships, access to care, diabetes self-management, and patient outcomes improve. But advanced, team-based primary care cannot flourish when clinicians lack resources, training, and support. Policy makers can equip primary care teams with the tools they need to confront the nation's diabetes epidemic more successfully. There is a measure of urgency for policy leaders to create or expand programs to attract, train, and retain health care professionals; deploy PCPs to rural and historically underserved communities; and tackle financial incentives, regulatory hurdles, and social care shortcomings that impede a robust, national network of primary care teams resourced to address the full spectrum of care needs of people with diabetes.



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Key words: primary care; access to care; team-based care; diabetes management; self-management; health equity; health care workforce; health policy; social determinants of health; vulnerable populations; clinician payment; payment reform; clinician education; health outcomes

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