The Affordable Care Act (ACA) of 2010 authorized the Agency for Healthcare Research and Quality (AHRQ) to establish a national Primary Care Extension Service (PCES) that would facilitate practice transformation and improve the delivery of primary care. The law stipulates that the PCES will use community-based health extension agents to “provide support and assistance to primary care providers to educate providers about preventive medicine, health promotion, chronic disease management, mental and behavioral health services, and evidence-based and evidence-informed therapies and techniques.”

The PCES is modeled after the US Department of Agriculture’s Cooperative State Research, Education and Extension Service (Cooperative Extension). Launched in 1914, the Cooperative Extension uses local agents linked to regional hubs of land grant universities to disseminate new innovations and technologies developed by agriculture experts. The program has been highly successful in helping rural farmers adopt evidence-based agriculture models, leading to dramatic increases in food productivity and decreased costs.

The PCES seeks to apply the principles of the Cooperative Extension service to primary care to disseminate and implement innovations in the field of medicine. Several national leaders have recently shared their vision for which resources would be useful to primary care providers through the PCES. Grumbach and Mold saw the PCES providing a wide range of technical assistance to community practices related to the Chronic Care Model, electronic
health records (EHRs), management of patient panels, and team-based care. As described by Meyers and Clancy, the PCES would strengthen the endangered foundation of primary care by supplying community-based teams to help with quality improvement. These teams would: (1) provide practices with services, such as care management, (2) connect practices with community resources, (3) provide practices with quality improvement technical assistance, and (4) partner with practice-based research networks and medical schools to trial new approaches, with participating practices informing the research questions.4

While many experts have commented on the need for the PCES to transform primary care, no study has directly asked primary care providers which aspects of the PCES would be most beneficial. We conducted a statewide survey of primary care providers in Pennsylvania to assess their needs from the PCES both generally and in comparison with the aforementioned models. Pennsylvania is one of four states funded by AHRQ to develop a PCES with the goal of helping primary care practices spread innovative models of care such as the patient-centered medical home (PCMH) model. The PCMH is a team-based approach for coordinating comprehensive medical care, led by the patient’s primary care provider. It has emerged as a transformative model to enhance primary care delivery and is linked to improved quality of care, better patient experiences, and a net savings in total health care expenditures.5,6 While there are extensive PCMH pilot programs throughout the United States and widespread enthusiasm for the model, only a small minority of the nation’s 353,000 primary care physicians have been involved in a medical home initiative. As a result, there is a limited understanding of the resources desired by primary care practices seeking to implement the PCMH and what support and assistance might be offered by the PCES.

Pennsylvania’s PCES aims to apply lessons learned from the Chronic Care Initiative,7 a multi-stakeholder statewide practice transformation effort. The PCES will help spread the PCMH model to Pennsylvania’s largely rural and underserved practices by leveraging the preexisting infrastructure of the PA Area Health Education Center (AHEC) and other quality improvement organizations. PA AHEC consists of a network of more than 1,000 primary care physicians in seven geographical regional centers, each affiliated with a medical school.

As the effort is broadened to encompass more sites, it is necessary to assess what support services are most beneficial to primary care providers to help them facilitate practice transformation. Our survey identified the resources most and least desired by primary care providers.

Methods
A 70-question survey developed by researchers at Penn State University College of Medicine, the statewide hub for PA’s PCES, assessed which services primary care providers in PA desired for practice transformation. The survey questions were based on six domains that emerged from a literature review on the PCES as well as discussions and comments from primary care provider organizations and partners throughout PA. These domains included: (1) Quality Improvement, (2) Practice Management, (3) Patient Care, (4) Medical Records, (5) Financial Management, and (6) External Partnerships and Collaborations. Several additional questions were included as “Other Services.” These included: (1) assistance in applying for PCMH recognition, (2) assistance with jointly hiring PCMH support staff (care managers, social workers, etc) with other practices, (3) networking with colleagues to learn best practices, and (4) participating in practice-based research. The survey collected demographics and included space for comments. It was approved by Penn State University College of Medicine’s Institutional Review Board.

Primary care providers that practiced in PA were invited to participate. The survey asked them to indicate, on a scale of 1–5, which areas of the PCES would most help their practices. The survey was distributed to approximately 6,800 providers via email and mailing lists supplied by PA AHEC, the Office of Continuing Medical Education at Penn State’s College of Medicine, and other state partners including the Department of Health, PA Association of Community Health Centers, health plans, PA Medical Society, PA Academy of Family Physicians, and PA Chapter-American Academy of Pediatrics. Survey responses were collected between June and October 2012 via the online REDCap survey system or as a paper copy by fax, mail, or email. There was no cost to participate; respondents who completed the survey were entered in a drawing for an iPad 2.

The mean score and standard deviation were calculated for each question. Questions were subsequently ranked according to mean score, with a focus on the 10 highest and lowest ranked questions. Responses were compared to each survey question by the following factors: practice size (one–four versus ≥ five), type of practice (private versus hospital/residency/Federally Qualified Health Center (FQHC)), PCMH status (NCQA versus non-NCQA recognized), PA Chronic Care Initiative member (yes versus no), and provider specialty (family physician versus internal medicine versus pediatrician). For each factor, mean responses were compared to each question using a t test (ANOVA model for provider specialty training). The Bonferroni correction was applied to the P values obtained from each of the 50 t tests conducted per factor.

Results
Surveys were received from 556 primary care providers across Pennsylvania, with at least one response from each of Pennsylvania’s 67
consistent with previous reports. These comments are financial commitment required to be NCQA (4.2); NCQA (3.8)
PCMH-recognized practices and non-PCMH-recognized practices were noted in provider needs based on three questions. Non-NCQA recognized practices were more likely in practice transformation. The 10 most desired services from the PCES are presented in Figure 2. No significant differences were noted in provider needs based on practice size, practice type, or provider specialty. Significant differences were noted between NCQA PCMH-recognized practices and non-NCQA PCMH-recognized practices on three questions. Non-NCQA recognized practices were more likely than NCQA-recognized practices to want help recruiting new patients (Non-NCQA mean (3.2); NCQA (2.7) \( P=.0002 \)), improving collections (Non-NCQA (3.6); NCQA (3.1) \( P=.0005 \)) and increasing overall revenue (Non-NCQA (4.2); NCQA (3.8) \( P=.0005 \)).

The general theme of survey comments was concern over the time and financial commitment required to become a PCMH. These comments are consistent with previous reports.\(^5,10\) **Discussion**

In general, our survey findings align with several previous studies that have identified facilitators and barriers to transitioning to a PCMH.\(^11\) In our analysis, we compared our respondents’ preferences to the services proposed under the PCES models articulated by Grumbach and Mold\(^6\) and by Meyers and Clancy.\(^4\) The six domains needed to construct a PCES that emerged from the literature are: (1) Quality Improvement, (2) Practice Management, (3) Patient Care, (4) Medical Records, (5) Financial Management, and (6) External Partnerships and Collaborations. Of these services, our respondents saw external partnerships, financial management, practice management, and quality improvement as most useful, whereas medical records were viewed as least useful.

**Most Desired Resources From the PCES**

Two of the top 10 resources, (#1) Identifying and coordinating referrals to mental health services and (#6) Identifying and collaborating with local community resources, fall under the External Partnerships and Collaborations domain. While linking to outside specialty resources, including mental health, were proposed in both Meyer and Clancy’s and Grumbach and Mold’s vision of the PCES, it is noteworthy that this is the most desired service by responding primary care physicians. These findings correspond with a recent paper by Phillips et al, suggesting that as the PCES has evolved, many elements included in the ACA, such as integrating primary care with public health and community resources, have become increasingly important in practice transformation.\(^15\) Primary care providers’ frustration with making mental health referrals and poor access to specialized mental health care is well documented.\(^16,17\)

A 2009 survey found that 75% of PA primary care physicians referred at least one adolescent patient to behavioral health services in the past year for suicidal ideation or behavior but only 24.9% of those surveyed reported that they can always or often quickly get mental health service appointments for these patients.\(^18\) These findings suggest that linking primary care physicians to mental health services and other community resources must be a key component of the PCES.

Strategies for improving financial and practice management comprise five of our survey respondents’ top 10 most desired services from the PCES: (#2) improving office efficiency, (#3) improving revenue, (#7) improving staff satisfaction, (#9) improving pay for performance, (#10) coding correctly. These are key components of both visions for the PCES and were shown to be important in the National Demonstration Project (NDP) on the medical home model. Nutting et al concluded that transformation to a PCMH depends on a practice’s capacity for organizational learning and development, which includes an infrastructure of healthy staff relationships, a strong practice leadership.\(^19\) Many physicians resist the change due to a lack of training, misaligned financial incentives, under-reimbursement, and time-consuming procedures.\(^19\) Yet, while the initial financial burden of the PCMH may be seen as a barrier, transition to PCMH can improve efficiency and quality of care without increasing operating costs.\(^22\) The concern over time and financial commitment presents a challenge for the PCES to educate practices about potential return on investment in PCMH implementation. The remaining three of the top 10 services fall under the domain of Quality Improvement: (#4) Strategies to help implement evidence-based clinical guidelines, (#5) Improve patient self-management, and (#8) Making changes in clinical and administrative processes to improve quality. These responses correspond to both of the proposed PCES models and echo a historic difficulty among practices in implementing evidence-based guidelines.\(^20\) It is noteworthy
that primary care providers involved in practice facilitation, like that offered through the PCES, are 2.76 times more likely to adopt evidence-based guidelines (21). Under Grumbach and Mold’s vision for the PCES, quality improvement and best practice information will be disseminated to local practices through state or regional hubs connected to a university-based center of excellence and other partners well versed in promoting evidence-based care. Our results suggest that developing such a network is highly desirable to primary care physicians.

**Least Desired Resources**

As envisioned, the PCES would provide small and rural practices with technical assistance for EHR and HIT support; however, six of the 10 least desired services in our survey concern EMRs. Our findings are likely reflective of the dramatic increase in EMR utilization over the past 5 years. In 2012, 72% of US and 71% of Pennsylvania office-based physicians used EMR systems, up from 48% nationally in 2009. Much of this has been facilitated by federal efforts to create a network of Regional Extension Centers to support EMR adoption. Monetary incentives for providers achieving meaningful use likely also accelerated EMR adoption. Moreover, practices that have not yet implemented EMR are unlikely to desire this resource based on perceived barriers including uncertainty about costs and return on investment, computer literacy skills, and increased documentation time.

Although EMR services are seen as least desirable, the PCES will likely need to play a role in maintaining an EMR support infrastructure with regional extension center funding nearing its end. Providing some level of regional EMR support through the PCES also will be important, with half of physicians practicing in small practices that face significant financial and technical challenges when implementing and utilizing advanced EMR functions. Solo and two-physician practices are significantly less likely than larger practices to use information technology processes, including EMRs, electronic prescribing, and chronic illness registries. However, we found no significantly different mean responses between smaller practices (< five providers) and larger practices for any of the EMR support questions, possibly further indicating the success of the PA Regional Extension Center Program.

The remainder of the lowest ranked resources was: (#3) Implementing group visits, (#4) Recruiting new patients (marketing), (#8) Managing human resources, and (#10) Participating in practice-based research. Despite the potential efficiencies and peer support afforded by group visits, most providers continue to feel more comfortable with the one-to-one patient visit model.
This may explain the lack of interest in assistance with implementing group visits. Given primary care workforce shortage projections and the influx of patients expected to be seeking primary care under the Affordable Care Act, it is not surprising that respondents were not interested in support to recruit new patients. The lack of interest in assistance with managing human resources is puzzling, considering the importance of team-based care in the PCMH and the fact that one of the most desired services was help in improving staff satisfaction. Although AHRQ has long supported practice-based research, our findings indicate that participating in research is a low priority for primary care providers. Future studies should explore some mechanism to foster greater interest in linking universities and
local practices to better facilitate research efforts.

Interestingly, practice needs were consistently rated with no significant differences based on most demographic variables (practice size, practice type, and provider specialty), suggesting a broad consensus on the types of services that are desired from a PCES. The significant differences in need for revenue enhancement assistance between NCQA-recognized PCMH providers and non-NCQA-recognized PCMH providers may be because there have been financial incentives in PA tied at least in part to practices achieving NCQA PCMH recognition.30,31

A limitation to our study is our inability to reliably calculate the survey response rate due to the third-party distribution of the state-wide survey. Another limitation is that the research was conducted in just one state. However, Pennsylvania is a large state with geographic and demographic diversity reflective of the United States, and surveys were returned from every one of PA’s 67 counties. Moreover, while the sample size may be small, our survey responses appear roughly representative of primary care providers both in Pennsylvania and nationally. Compared to Pennsylvania’s 2010 licensure renewal survey data22 and the American Medical Association Masterfile 2010,30 our survey responses are roughly proportional in terms of provider specialty (more family physicians than pediatricians and general internists). In terms of practice size, 55% of our survey respondents reported practicing in solo or small practices (two–four providers) versus 47% of US physicians in practices with five or fewer providers in a 2008 survey by the Center for Studying Health System Change (HSC).34 Both our survey and the HSC survey showed similar distribution in terms of practice in community health centers (4% in our survey versus 3% in HSC’s survey) and academia (6% in residency programs in our survey versus 7% in medical schools/universities in HSC’s survey). In terms of practice type, our survey responses are similar to data from a 2011 American Medical Association Report,35 a September 2012 survey of US physicians by The Physicians Foundation,36 and the HSC survey. Those reports found just under half of US physicians practicing in private, independent practices while just over half of respondents to our survey reported being in private, independent practices.

Conclusions

This is the first survey to ask primary care providers what services they want to receive from a PCES. This study is unique in that it takes a “demand” side approach, asking practices what they need, rather than the more traditional “supply” side approach, where suppliers of services package the assistance they think practices need. As such, the results will be helpful in guiding further development of the PCES to be responsive to the needs of the primary care community, particularly in terms of behavioral health coordination, practice management, and quality improvement services. This study also demonstrated significant interest by primary care providers in accessing services from a PCES. Developers of the PCES may want to replicate this survey in their service areas and consider qualitative studies that enhance their understanding of primary care providers’ needs in a rapidly changing health care landscape.

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Corresponding Author: Address correspondence to Dr Gabbay, Joslin Diabetes Center, One Joslin Place, Boston, MA 02215. 617-309-2470. Fax: 617-309-2574. robert.gabbay@joslin.harvard.edu.

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