

Expectation, Challenge, and Opportunity:
Minnesota's Community Health Centers and the Affordable Care Act

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Alex Kurt

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Dr. Larry Jacobs Humphrey School of Public Affairs Center for the Study of Politics and Governance Paper Supervisor	Date, Oral Presentation	Date, Paper Completion
_____		_____
Rhonda Degalau Executive Director, MN Association of Community Health Centers		Date
_____		_____
Jonathan Watson Public Policy Director, MN Association of Community Health Centers		Date

Introduction

Community Health Centers (CHCs) play a major role in providing primary care services – which prevent long-term complications and lead to better health outcomes – to underserved and uninsured populations in underserved and health professional shortage areas in the United States. CHC care is largely synonymous with primary care (though primary care takes place in settings outside CHCs, CHCs offer little in the way of specialization compared to private providers and large hospitals). Today, these safety net providers of health care face a potential crisis of supply and demand: the US health care system faces an increasingly large shortage of primary care physicians across the board (in and out of CHCs) due to salary discrepancies and other factors. The shortage could hit CHCs, which sit in areas traditionally underserved by physicians and serve many on the margins of the health care system, especially hard as the 2010 Affordable Care Act (ACA) creates millions of newly-insured patients and increases the demand for their primary care services. This paper poses the question: how will Minnesota’s CHCs be affected by the primary care shortage, especially in the wake of the ACA? Will demand increase too fast to be met by the supply of primary care physicians? Will they be able to operate financially if demand increases? Much of the outcome will be tied to whether the newly-insured abandon CHCs for more exclusive forms of care (primary and specialized alike).

The paper will study the effects of Massachusetts’ state-level health care reform, which contained many of the same demand-increasing pillars – an individual mandate, expansion of public coverage, and so on – as the ACA, on the state’s CHCs. It will also examine both similar and differing factors between Massachusetts and Minnesota to consider whether Minnesota’s CHCs might expect

similar results post-ACA, and consider further actions Minnesota might take to improve their CHCs' ability to adequately supply themselves with primary care physicians in the future. The analysis concludes that Massachusetts' CHCs saw an uptick in demand, as well as an increase in the number of patients served after state reform took effect; they also improved their financial margins because newly-insured patients were not leaving, and were in fact providing new insurance-based revenue to the centers. However, while some of the increased demand was clearly being met (hence the increase in patients served), CHCs in Massachusetts still reported staffing shortages; the primary care shortage did remain a challenge for the state's CHCs. Minnesota CHCs can reasonably expect an increase in demand for primary care services as the ACA leaves fewer residents without insurance, while a larger proportion of insured patients will provide more revenue (and thus operating capacity) for the state's CHCs; the shortage in supply of primary care physicians might not be sufficient to meet all of the new demand, but federal funding directed at spurring that supply (which was not available to Massachusetts' CHCs in state-level reform) could help close the gap, at least partially.

Background

Primary Care: A Primer

Primary care is a major part of the care Community Health Centers (CHCs) provide; given its important role in the health care system at large, a worsening shortage in the supply of professionals who provide it could have negative implications on both health outcomes of individuals and costs for the US health care system.

The Institute of Health defines primary health care as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and

community” with acknowledgement of a heavily-integrated health care system and interdependence among different levels of practitioners (Thomas-Maclean, Tarlier, Ackroyd-Stolarz, Fortin & Stewart, 2004). Commonly defined to include pediatrics, internal medicine, family medicine, and obstetrics and gynecology (Brooks, Cieslak, Radcliffe & Sjogren, 2008), primary care constitutes generalized services that often mark the principal consultation point between doctors and patients; it is contrasted with specialized care in which patients receive specific treatments for specific conditions or manifestations of those conditions, such as dermatologists, radiologists, and surgeons, for instance (Thomas-Maclean, Tarlier, Akroyd-Stolarz, Fortin & Stewart, 2004).

Accordingly, primary care plays a major role in the prevention, early detection, and management of chronic conditions. A 2007 study by Macinko, et al consolidated studies from 1985 – 2005 on health outcomes related to chronic conditions based on availability of primary health care. They found that, in a population of 10,000, a one-unit increase in primary health care physicians significantly predicted improved health outcomes in cancer, heart disease, stroke, infant mortality, low birth weight, and life expectancy. For all-cause mortality, the study found that a one-unit increase in primary care physicians per 10,000 population led to an average decline in mortality of 5.3 percent, which translated to 49 fewer cases per 100,000 population annually (Macinko, Starfield, & Shi, 2007). A Danish study in 2001 followed 970 diabetes patients and compared two groups: one control group receiving “usual care” and a group receiving regular follow-up, reminder systems and other in-and-outpatient services as part of a prevention-focused chronic care model (a disease management program that exists in the primary care model). Six years later, those in the experimental group showed significantly lower blood sugar levels, blood pressure, and blood cholesterol levels than those in the control group (though the mortality rate between groups remained unchanged) (Olivarius, Beck-Nielsen, Andreasen, Horder, & Pedersen, 2001).

Some contend, therefore, that primary care plays a major role in containing the cost of health care (Steinbrook, 2009) by preventing high-cost treatment for chronic conditions developed through lack of primary care. Little conclusive literature exists on the savings, or lack thereof, of primary care broadly (especially long-term); therefore analysis of some specific disease management and chronic care programs, which are designed to work preventatively and manage costs, will serve as cursory forays into the cost-effectiveness of preventative care.

Bodenheimer, Wagner, & Grumbach (2002) analyzed the effects on health outcomes and cost of care for multiple chronic care models for patients with congestive heart failure, asthma and diabetes. They found that 18 of 27 programs resulted in lower costs and lower health services utilization; nurse-directed outpatient programs resulted in a 56% reduction in hospital readmission for congestive heart failure patients, saving providers an average of \$460 per patient over the first 90 days of the program; asthma patients with outpatient support made fewer emergency room visits and accrued an average of \$628 less over one year; in multiple studies, diabetes patients enrolled in prevention-focused group care made fewer hospital visits and reduced their length of hospital stays compared to non-enrollees, though the cost of consultations and glycemic control measures was unknown in the short-term (Bodenheimer, Wagner, & Grumbach, 2002) (Sadur, Moline, & Costa, 1999).

There is not a broad consensus that preventative care saves money in the long run, meanwhile. Some have concluded that the cost of extensive screenings and preventative services can in some cases prove as expensive as specialized treatments for advanced chronic conditions. In 2008, Cohen, Neumann and Weinstein (2008) assessed the claim that preventative care unequivocally saves costs, spurred by a presidential primary contest in which health care reform was a hot topic and several candidates made this claim. Cohen, et al (2008) concluded that some opportunities exist to curb long-term costs via prevention, notably with preventable causes of death: “tobacco smoking, poor diet and physical

inactivity, and misuse of alcohol have been estimated to be responsible for 900,000 deaths annually — nearly 40% of total yearly mortality in the United States. Moreover, some of the measures identified by the U.S. Preventive Services Task Force, such as counseling adults to quit smoking, screening for colorectal cancer, and providing influenza vaccination, reduce mortality either at low cost or at a cost savings” (Cohen, Neumann, & Weinstein, 2008). But they noted conflicting data indicating that prevention of disease can in some cases increase the cost of care; for instance, the cost of extensive screenings for a disease that would only affect a small proportion of the population will likely outweigh cost savings from treatment of the disease; however, they conclude that targeting specifically at-risk populations (such as providing statins only for patients considered at risk of high cholesterol) can prove more cost-effective. Applying potentially costly preventative services intentionally and specifically can ultimately prove a cost-effective use of resources (Cohen, Neumann, & Weinstein, 2008).

That said, improving health outcomes should arguably be a higher priority than cost savings, provided the increase costs from improved primary coverage do not prohibit or reduce the quality of that coverage itself. That primary care can affect outcomes and improve the health of patients receiving it has been demonstrated.

The Role of Community Health Centers in providing primary care in the US and Minnesota Health Care Systems

CHCs are major providers of primary care services; they also play the dual role of comprising a major part of the medical care safety net in the US. Since the 1960s, they have provided access to primary and preventative care to vulnerable and underserved populations. Also known as Federally-Qualified Health Centers (FQHCs), CHCs are federally funded and therefore federally regulated. They are required to be located in medically underserved areas or serve other high-need communities; to coordinate and integrate primary care with other services including social services, mental health services, dental care, and pharmacy, as well as access to transportation for appointments; have a

community-based governance structure where at least 51% of the Board of Directors of each health center are patients of the health center; and be available to all residents in a service area regardless of insurance status or ability to pay. Nationwide in 2008, 40 percent of CHC patients were uninsured (compared with 16 percent of the population), 35 percent received Medicaid (compared to 12 percent), 71 percent were at or below 100 percent of the Federal Poverty Guideline (FPG) (compared to 17 percent), 92 percent were at or below 200 percent of the FPG (compared to 36 percent) and 66 percent were minorities (compared to 34 percent) (Access Transformed, 2008).

Minnesota's 17 CHCs (with 70 sites total) (About Minnesota's Community Health Centers) serve residents from over 50 percent of Minnesota's zip codes (there are over 800) (Community Health Center Profile, 2008). 37 percent of Minnesota Association of CHC's (MNACHC's) patients are uninsured, compared to nine percent of the state population overall; 67 percent of Minnesotans have private insurance, but only 14 percent of MNACHC patients have private insurance (Patients Insurance Status vs. State, 2008). 67 percent of MNACHC patients are below 100% of the FPG; 29 percent are below 200 percent and only 3 percent are above 200 percent of the FPG. Statewide, only ten percent of Minnesotans are below 100 percent of the FPG; 75 percent are above 200 percent (Patients Poverty Level vs. State, 2008). Approximately 57 percent of MNACHC patients are female; the largest age group served by MNACHCs is between ages 20 and 44, which constitutes 38 percent of patients. Seven percent are 65 or older, and ten percent are under age five (Patients by Age and Gender, 2008).

The benefits of CHCs are many. They provide increased access to care, especially for underserved rural, migrant and/or minority populations and those without insurance; moreover, the quality of care received is comparable and in some cases superior, based on chronic condition outcomes, than care received through more expensive providers due to CHCs' mandated focus on integration of care and multi-faceted disease management. The increase in access and emphasis on

primary and preventative care provided by CHCs has demonstrably shrunk disparities in health status and health outcomes among groups of differing socioeconomic status (Access Transformed, 2008).

Additionally, access to primary and preventative care for those who might otherwise go without it is purported to generate huge savings for the US health care system. CHCs can 1) minimize the onset of acute symptoms from chronic conditions through increased screening and early detection and treatment, and 2) lower the cost of care for those with chronic conditions. The National Association of Community Health Centers (NACHC) reports that patients receiving the majority of their care at CHCs have personal medical expenditures that are 41 percent lower (approximately \$1,810 per person annually) than patients who rely on other provider types; this translates into savings of between \$9.9 billion and \$17.6 billion annually (Access Transformed, 2008). A separate NACHC report estimates that \$18 billion are wasted annually on unnecessary emergency room visits, and that full utilization of CHCs by eligible patients could save Medicaid \$4 billion in unneeded emergency room costs by helping prevent the onset of acute symptoms resulting from chronic conditions (Choudhry, Douglass, Lewis, Olson, Osterman, & Shaw, 2007).

Furthermore, CHCs generate economic activity and jobs in the low-income areas they serve; NACHC estimates CHCs generate \$12.6 billion of economic activity annually and produce 143,000 jobs (Access Transformed, 2008).

In short, CHCs provide better access to primary care nationwide and in Minnesota. But across the US health care system – in and out of the CHC environment – there is a growing shortage of primary care professionals. That shortage is expected to worsen as 1) the US population ages and demand for services increases, 2) fewer medical graduates go into primary care careers, decreasing the available supply, and 3) the Affordable Care Act (ACA) of 2010 take effect in 2014, increasing demand further by increasing access to both insurance and care for the uninsured (Heisler, 2013) (Lundy, 2013).

By all accounts, CHCs should be devastated by this shortage; this is especially logical given that the primary care shortage is worst in the traditionally underserved areas CHCs inhabit (Access Transformed, 2008). However, in attaining federal designation as a medically underserved area (Health Professional Shortage Area, or HPSA), CHCs – or FQHCs – are partially immune from market trends (Access Transformed, 2008). Meanwhile, CHCs in Minnesota and elsewhere will also be expected to play a major role in increasing access to care, especially primary care, when the ACA takes effect given their operation at the fringes of the insured (as well as their operation within the uninsured) population (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). Thus the ACA presents a tremendous opportunity to expand care and improve health status for millions of people, but it also presents an immense challenge to meet those expectations and the new demands accompanying them. That said, it is unclear whether CHCs would be strained if the increase in insurance coverage spurs demand for specialty care and primary care from non-CHC providers more than for community-based care.

The impending question is whether MNACHC face a shortage of primary care professionals, and how bad that shortage could be – both financially and in terms of health outcomes for the populations CHCs serve – as a worsening crisis in the existing supply of primary care physicians looms.

The Crisis: A Shortage in the Primary Care Workforce – in CHCs and Elsewhere

A Shortage of Primary Care Across the Board

The US health care system – both in and out of the community-based care context – currently has a shortage of primary care professionals. In 2010, the composition of the population of US physicians was approximately one-third primary care professionals and two-thirds specialists, a ratio many suggest is suboptimal, and which the US Health Resources and Services Administration (HRSA)

suggests was 7,000 individuals too few (there were 304,687 primary care physicians practicing in the US when the data was collected) (Heisler, 2013).

Some estimate the shortage is larger than that. In 2010, the Association of American Medical Colleges (AAMC) produced a report estimating the supply of primary care physicians in the US is roughly 9,000 individuals short of demand (AAMC, 2010). The AAMC and others expect the gap to widen; as the US population grows and ages, the demand for primary care has never been higher and continues to grow.

Meanwhile, the growth in supply of primary care physicians is not expected to keep pace with the growth of demand; this is expected to exacerbate the existing shortage of primary care. In a 2008 *Health Affairs* article, Jack M. Colwill, James M. Cultice and Robin L. Kruse write that the supply of primary care is not expected to grow at the same rate as demand for primary care in the next decade and beyond. They estimate that by 2025 the US population will grow to 349 million – and increase of 18 percent since 2005 – and that the US population over age 65 would increase 75 percent in the same period; as those over 65 seek generalist care at twice the rate (three times per year) of those under 65), it is estimated that adult patient visits will increase 29 percent by 2025. At current generalist graduation rates from medical school, Colwill, et al (2008) estimate the supply of primary care will increase 13 percent by 2025 – well below the 29 increase expected in primary care workload (Colwill, Cultice & Kruse, 2008).

However, Colwill, et al (2008) note that a decreasing generalist graduation rate (across medical, osteopathic and allopathic programs) will exacerbate the gap between supply and demand: “Residency programs produced 2,470 GIM graduates in 2005—16 percent below 1995 levels and 37 percent below the peak in 1998...much of the decline has been caused by increased subspecialization (from 52 percent in 1995 to 62 percent in 2005)” (Colwill, Cultice & Kruse, 2008). They estimate the supply of primary care

for adults will increase a mere 7 percent by 2025, accounting for the dwindling rate of generalist production, and that (Colwill, Cultice & Kruse, 2008). The AAMC estimates the shortage of primary care physicians in the US will be approximately 65,800 in 2025 (AAMC, 2010).

A study from the University of Minnesota reported that in 2007, 54 of the state's 87 counties received either a partial or full federal designation as a primary care Health Professional Shortage Area (HPSA) – 26 full counties and 28 partial counties were designated primary care HPSAs; this includes 37 percent of Minnesota's rural population. Of Minnesota's 4,261 primary care physicians in 2007, 1,286 worked in rural areas (many in community-based settings). That is 30 percent of primary care physicians – roughly the same percentage of the state population that lives in rural areas; however, not all primary care physicians are distributed according to population, leading some counties to be underserved (Brooks, Cieslak, Radcliffe & Sjogren, 2008).

As is the case elsewhere, an increasingly aged population will continue to strain Minnesota's primary care supply. The report estimated that between 2000 and 2030, those age 65 and older will grow from 12 percent to 24 percent of Minnesota's population, thus increasing demand for primary care including chronic disease management services (Brooks, Cieslak, Radcliffe & Sjogren, 2008).

A shortage of primary care will be detrimental to the health status and outcomes of individuals whose access to care has decreased; one report by NACHC stated "evidence suggests that a further disappearance of primary care services will inevitably contribute to a worsening of health outcomes, a widening of health disparities, and a rising price tag on the cost of health care" (Accessed Transformed, 2008). A 1995 study of adults in Kentucky found significant differences in the health status of adults living in HPSAs and adults living outside HPSAs in measurements of social health, mental health, and pain; HPSAs, in other words, are statistically associated with poorer health status (Kohrs & Mainous, 1995). Meanwhile, Macinko, et al's (2007) conclusion that a one-unit increase in primary care physicians

per 10,000 population definitively improved health outcomes for chronic conditions and decreased mortality by an average of 5.3 percent per year could reasonably be taken in the opposite light: that a reduction in primary care physicians could be detrimental to health outcomes and increase mortality rates, or at least fail to improve either.

The shortage of primary care could also be a major strain on US healthcare system costs, though there is no consensus on how bad that strain could be. As discussed earlier, Cohen, et al (2008) noted the uncertainty with which costs can be extrapolated given the unpredictability of disease, and that initial costs of preventative, if effective, cannot always be measured against the alternative. Conventional wisdom, meanwhile, seems to point toward an understanding that as the number of people without primary care services increases, so too will the number of more expensive late-stage and emergency treatments as previously-untreated conditions manifest themselves; emergency room visits are estimated to cost the US health care system over \$18 billion annually, and it is estimated that at least one third of visits are avoidable, meaning non-urgent or treatable in primary care settings (Choudhry, Douglass, Lewis, Olson, Osterman, & Shaw, 2007).

The uncertainty surrounding the long-term costs and benefits of preventative services make it difficult to weigh the cost of investing to create a broader primary care workforce. Steinbrook (2009) observes that “effective primary care can improve the quality of care and health outcomes and save money. But to the extent that easing the shortage of primary care physicians will require additional funds, the initial cost of reform will increase.” It seems that if the increase in primary care supply will lead to less treatment and therefore lower costs in the long term, it would be worth it, but it is difficult to gage (Cohen, Neumann, & Weinstein, 2008). And in at least one study (albeit an old one), veterans with chronic conditions discharged from Veterans Affairs hospitals who had primary care interventions during their outpatient time were more likely to be rehospitalized than those who did not have the

same intervention (Weinberger, Oddone, & Henderson, 1996), highlighting the murkiness and potential for backfire surrounding the conventional wisdom that primary care decreases costs.

Of course, the Weinberger, et al (1996) study's focus on veterans who already had chronic conditions does not disprove the notion that primary care, in potentially *preventing* such conditions, could save costs by reducing hospitalization in the long run – perhaps those veterans, had they had access to and utilized primary care earlier in life, would have avoided the initial hospitalization altogether. And perhaps the most pertinent result of the study was that the veterans receiving the primary care intervention were more satisfied with their care than those who did not (Weinberger, Oddone, & Henderson, 1996).

Causes of the Shortage, In and Out of the Community-Based Setting

There are several reasons for the current and potentially worsening shortage of primary care physicians. Perhaps most intuitively, there is less financial incentive for medical graduates to go into primary care professions than into specialty practices, especially compared to the rising cost of medical education and the subsequent financial burden it imposes on graduates. Nationwide, primary care physicians earn on average less than many specialty physicians. In 2007, the median reported salary in cardiology ranged from \$389,243 to \$435,000, and orthopedic surgeons earned a median salary of \$436,481; the same year, the median salaries in internal and family medicine were \$193,162 and \$185,730, respectively (Brooks, Cieslak, Radcliffe & Sjogren, 2008). In Minnesota, the median salary for a family physician was \$170,000 (Moscovice & Casey, 2008).

Meanwhile, the cost of graduate medical education left medical school graduates with an average of \$137,437 in debt (including borrowing for pre-medical education); also in 2007, University of Minnesota Medical School graduates had an average of \$141,691 in debt and in 2005, physicians completing family practice residencies nationwide reported a median debt of \$163,000 (Brooks, Cieslak,

Radcliffe & Sjogren, 2008). Uwe E. Reinhardt, blogging for *The New York Times*, estimated 2011 medical school tuition to average \$38,000 annually (meaning roughly \$2.5 billion is paid in medical tuition total each year) (Reinhardt, 2011).

Even for those choosing careers in primary care, options may be limited. Another AAMC report points out that, though the number of medical schools is increasing in response to increased demand, resulting in an estimated 7,000 additional medical graduates per year from 2010 – 2020, the number of residency training programs supported by the federal government cannot grow at the same pace because financial support for physician training from Medicare has been frozen since 1997 (AAMC, 2010). This is significant because federal support for medical residencies and training can manifest itself not only as available positions, but also as financial incentives for medical graduates willing to work in medically underserved areas or in understaffed positions.

Additionally, there is evidence suggesting the shortage of primary care physicians, especially in rural and other underserved areas, stems from low levels of initial recruitment and not from issues of retention once physicians are serving in primary care positions. A survey in the 1990s by Donald E. Pathman, Thomas R. Konrad, Rebekkah Dann and Gary Koch from the University of North Carolina found physicians in rural HPSAs had retention rates similar to physicians serving outside HPSAs; generalist physicians had an average duration of retention identical to or only slightly shorter than their non-HSPA counterparts. They concluded therefore that poor recruitment, rather than retention, was the underlying cause of primary care shortages in rural areas (Pathman, Konrad, Dann & Koch, 2004).

A similar study by Kara Odom Walker, et al, in Los Angeles found that, of 42 primary care physicians interviewed, the primary motivating factors spurring a career in primary care in an underserved area are not monetary; the three primary drivers of primary care careers, the study found, were personal motivation, career motivation, and support of the clinic/workplace. On the other hand,

those physicians not serving in underserved areas were more likely to cite lifestyle and hours as motivating factors for their choice of practice location (Walker, et al, 2010). In other words, recruitment of primary care physicians to underserved areas could be spurred by successfully appealing to non-monetary factors driving medical school graduates to serve in such positions. Given that money is unlikely, at present, to recruit new physicians to primary care roles in HPSAs (Brooks, Cieslak, Radcliffe & Sjogren, 2008), the viability of an alternative method of recruiting could prove crucial in attempting to mitigate the gap between supply and demand of primary care.

Additionally, the Council on Graduate Medical Education (COGME) and Government Accountability Office (GAO) report that the shortage in primary care physicians is being driven by a lack of opportunity; the majority of residency and medical school training takes place in a hospital, where there is greater orientation toward specialty care and there are fewer “role models” in primary care – something COGME and GAO say heavily influences medical students’ career choice: “Role models and exposure are important factors in specialty choice; therefore, hospital-based training may influence medical students toward specialties. Prior research has found that medical students exposed to federal programs that promote primary care, such as those authorized by PHSA Title VII, during their training are more likely to enter primary care” (Heisler, 2013).

Finally, medical school graduates could be deterred from primary care by additional uncompensated duties inherent in primary care practice, including serving as gatekeepers to specialty care, that do not burden specialists and which can distract physicians from patient care (Physician’s Foundation, 2008) (Newton & Grayson, 2003).

How the Affordable Care Act Will Affect the Shortage

Signed into law in March 2010, The Patient Protection and Affordable Care Act (PPACA, or ACA for short) could potentially exacerbate the shortage of primary care by lowering the uninsured rate and

thus further increasing the tangible demand for services (meaning the number of people who are able to seek care; the base number of people who *need* care will increase due to demographic changes but not due to the ACA). The law promotes preventative and primary care by both providing substantial funding for preventative and coordinated services (and requiring coverage of preventative services in new employer-based coverage, for example) and expanding access to primary care by providing for easier access to insurance for the uninsured (via regulation and a voluntary expansion of Medicaid in each state) and increased access to services for those who remain uninsured despite the aforementioned provisions, primarily via CHCs (Koh & Sebelius, 2010). The US uninsured rate in 2009 was 16.7 percent (roughly 50 million people) (DeNavas-Walt, Proctor, & Smith, 2010) and the 2010-2011 uninsured rate in Minnesota was nine percent (roughly 500,000 people) (Minnesota: Health Insurance Coverage of the Total Population, 2011). However, it is not known the exact extent to which the uninsured rate will fall, as it is unclear how many individuals will comply with the individual mandate as opposed to absorbing the penalty.

One existing model for what states (and the US broadly) might expect exists in Massachusetts, where 2006 health care reform in the state featured both an individual mandate compelling all individuals to purchase insurance and an expansion of Medicaid coverage (to 150% of the FPG in this case) (Commonwealth Care Program Guide, 2011), both features of the ACA that are expected to drop the uninsured rate and increase insurance and care access; the state reform lowered the rate of uninsured individuals from six percent in 2006 to roughly two percent in 2010 (Estimate of Uninsured, 2011). As Jesson said could happen in Minnesota when national reform takes effect (Lundy, 2013), Massachusetts' safety-net providers of primary care experienced a large wave of new demand from the newly-insured. Many were older adults who had a large amount of pent-up demand, the result of their being at risk of chronic conditions and, until then, primary care-less (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). When reform first took hold, Massachusetts adults' uninsured rate shrank quickly

from 13 percent to 7 percent, causing seven percent (compared to four percent the previous year) of adults to complain they could not find a primary care physician and went without care (Access Transformed, 2008). Indeed, primary care physicians, especially in safety-net providing environments such as CHCs, in Minnesota and elsewhere face a potential new wave of demand as the ACA takes effect in 2014.

Accordingly, part of the AAMC's (2010) calculation estimating that the US health care system will experience a shortage of approximately 65,800 primary care physicians in 2025 is its anticipating a new wave of demand for all services, including primary care, as the number of insured (and the number of uninsured with access to health care) increases when the ACA takes effect beginning in 2014: "[The ACA] is expected to make health insurance coverage available to more than 30 million previously uninsured Americans by 2014. It will also improve coverage and access to care for many others. Questions have been raised as to whether there will be a sufficient supply of physicians and other health professionals to serve the nation, especially in light of concerns that the nation was facing potentially significant shortages even before health care reform" (AAMC, 2010). Petterson, et al (2012) estimate that the ACA will increase the demand for primary care physicians by 8,000 by 2025 compared to projections without the ACA.

Some estimate that the increase in overall physician demand will spur an increase in supply, especially given some ACA provisions designed to increase physician recruitment and supply. The primary mechanism through which the ACA attempts to increase physician supply to match demand is by increasing funding for residency programs, including authorizing additional HRSA and Medicaid funding for medical residencies. The ACA also includes provisions to encourage (through grants and Medicaid funding) cross-care coordination and to train more non-physicians to provide increased care (including more funding for physician's assistants, for example) (Heisler, 2013).

The ACA also contains several provisions to promote the primary care supply and enable the existing supply to function more effectively and expand its reach. The law provides grants and additional funding for graduate medical education (GME) to support increased primary care residency training starting July 2011 and lasting five years, and funnels Medicaid funding into GME programs and hospitals providing primary care training; it also encourages increased primary care service in underserved areas by 1) authorizing grants to expand and support community-based ambulatory care training in underserved communities, and 2) enabling members of the National Health Service Corps (NHSC) – an organization offering loan repayment and scholarship opportunities to primary care providers in underserved areas – to count time spent teaching in hospitals toward their Corps requirement to encourage more primary care training. Furthermore, the ACA attempts to close salary disparities by providing a 10% Medicaid-funded bonus to physicians performing certain primary care services; additional funding and grants from the ACA encourage coordinated care to maximize the reach and scope of care given available resources in any given health care setting (Heisler, 2013).

Some say Minnesota's supply of primary care doctors will not be exempt from the new strain on demand expected to be brought by increased access via the ACA. Minnesota's Human Services Commissioner, Lucinda Jesson, said on a panel in February 2013 at the University of Minnesota Medical School's Duluth campus that Minnesota providers will face a wave of newly insured individuals when the law takes effect; she noted the percentage of uninsured in Minnesota is expected to be cut from 9 percent to 4.2 percent by August 2014. Part of this is due to Governor Mark Dayton's acceptance of the ACA's voluntary Medicaid expansion from 133% to 138% of the federal poverty guideline (FPG), which is expected to add 145,000 Medicaid enrollees in the state. Dayton has pledged to restore previously slashed funding for Minnesota's Medical Education and Research Costs (MERC) Fund, and the beneficiaries would include the Duluth Family Residency Program, which trains medical residents to serve as family practitioners in rural areas (Lundy, 2013).

How, meanwhile, could the trends widening the gap between supply and demand of primary care physicians, as well as the ACA's potentially expediting those trends, affect CHCs? We will next apply the crisis described above to the case of CHCs specifically to discern the potential challenges Minnesota's centers could face in the coming years.

Application: The Primary Care Shortage and CHCs

How are CHCs Affected by the Primary Care Shortage?

Left to market forces alone, it seems medically-underserved areas would be left to flounder in a dearth of primary care availability. Given that trends toward specialization have left even well-served areas short of primary care, underserved areas, especially rural communities, should have it worse. Fortunately, by existing in underserved areas, clinics offering services to these populations are eligible to receive Federally-Qualified status (and therefore federal funding) under section 1861 (aa) of the Social Security Act, which was amended in 1990 and led to the inclusion of the FQHC benefit under Medicare on October 1, 1991 (CMS, 2013). In receiving FQHC status, clinics are designated CHCs (they have been referred to this way for the entirety of this paper) (What is a Community Health Center?, 2010).

Still, the shortage applies broadly and CHCs are not immune. The question becomes whether they are affected disproportionately regardless of federal funding. Roughly 50 million Americans live in federally-designated HPSAs, and roughly half of uninsured Americans live within five miles of a CHC; but health centers in HPSAs are having difficulty recruiting and then retaining physicians (Forrest, 2006). That assertion is supported by a 2006 study in the *Journal of the American Medical Association*, in which Rosenblatt, et al (2006) found that primary care job vacancies were open longer in rural CHCs than in urban CHCs, and that rural CHCs had a higher proportion of primary care vacancies than did urban CHCs. The study found that among all CHC positions (rural and urban), the major barrier to recruitment and retention was low salaries, and that recruitment was heavily dependent on loan repayment programs

and NHSC scholarships; in rural CHCs, additional barriers included cultural isolation, low-quality housing and education, and lack of job opportunities for spouses (Rosenblatt, et al, 2006). At the very least, rural CHCs are more adversely affected by the primary care shortage than their urban counterparts, but overall, CHC recruitment is presented with some of the same challenges as primary care recruitment on the whole.

CHCs and the Affordable Care Act

CHCs are not left out of consideration in the ACA. An increased emphasis on primary care is a major cornerstone of the ACA; the legislation provides a 10 percent increase in primary care physician payment and other specific programs to stabilize the primary care physician workforce in the US (Goodson, 2010). And strengthening the supply of primary care physicians and, by extension, the amount of access to primary care is a vital part in expanding the social safety net (Forrest, 2006).

Accordingly, CHCs are expected to play a major role in increasing access to health care among those currently underserved and/or uninsured. The ACA provides an additional \$11 billion in funding for CHCs, including for new access points, compared to the current \$2.2 billion annually through CMS; the number of both CHC sites and patients served by CHCs is expected to double to 14,000 and 40 million, respectively, by 2015 (Arvantes, 2010). When Massachusetts instituted its own state-level expansion of health insurance in 2006, CHCs expanded much faster than other forms of care because those newly served by them were coming from the margins of insurance coverage and care access – these were the same people an expansion of care, via health care reform – is directed toward (Arvantes, 2010).

Minnesota CHC grantees have received \$37.7 million since the ACA became law (How the Health Care Law is Making a Difference for the People of Minnesota, 2012).

It is clear that CHCs will play a major role in expanding coverage; accordingly, it is clear that they face myriad potential challenges as the previously described shortage of primary care supply strains the

entire health care system post-ACA. But how big a challenge will they face? And what forms will those challenges take? We will next examine a case study from Massachusetts' own state-level insurance coverage expansion, from 2006, and its effect on CHCs for clues as to what Minnesota's centers might have in store in the coming years.

Case Study: Lessons from Massachusetts on State-Level Effects of Access-Expanding Health Care Reform on CHCs

As current trends point toward a worsening of existing primary care shortages, and the ACA poses the potential to exacerbate the shortage further, will Minnesota's CHCs be adversely affected in their ability to deliver high-quality health outcomes for the expanding populations they serve? Will additional capacity for Minnesota's CHCs attained through the ACA be able to match the increase in demand resulting from the same law? Here we examine a previous case of health coverage expansion and its effects on the CHCs of a state to glean expectations for Minnesota's CHCs.

Methods

Massachusetts enacted its own state-level health care reform in 2006, titled "An Act Providing Access to Affordable, Quality, Accountable Health Care," also called Chapter 58 (Jha, 2013). While not identical legislation, the ACA included many of the same key components as Massachusetts' program, including an individual mandate requiring coverage by law, a Medicaid expansion, insurance market reforms (e.g. guaranteed issue and coverage standards) and a state-based exchange (Kaiser Family Foundation, 2012). Because of this, the ACA is expected to have a similar effect on the expansion of access in other states as the Massachusetts legislation had on Massachusetts (Jha, 2013); within that lie lessons in the potential implications of expanded access in individual states, including those dealing with staffing, finances, and accessibility for patients. In particular, the effect of Massachusetts' reform on the

state's 34 CHCs will provide insight and potential lessons for states including Minnesota as the effects of the ACA on the primary care supply loom (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Data from multiple studies and peer-reviewed journal articles measuring the effect and impact of Massachusetts' health reform legislation, as well as reports from NACHC regarding the law's effects on CHCs specifically will provide most of the information regarding Massachusetts; for purposes of comparing Minnesota CHCs' current situation to the starting position of Massachusetts CHCs prior to the 2006 reform, the primary source of data will be MNACHC. Additional data will be drawn from the American Community Health Survey and other Census Bureau publications where applicable.

Key Definitions

CHCs, for purposes of uniformity and relevance regarding issues of federal funding stemming from the ACA, will be (and have been) synonymous with FQHCs; while the definition of a "clinic" could potentially reach beyond this level of federal recognition, including only FQHCs will provide uniformity of statistics, applicability to federal legislative issues, and relative ease of measurement and comparison.

Primary care physicians, in this discussion, will include both medical doctors (MD) and doctors of osteopathic medicine (DO), per workforce data that includes both in their definition; DOs make up a very small percentage of overall primary care physicians and will not significantly impact this research, even if contrasting to reviewed literature that included only MDs (State Physician Workforce Data Book, 2011). As noted previously, primary care practices include pediatrics, internal medicine, family medicine, and obstetrics and gynecology (Brooks, Cieslak, Radcliffe & Sjogren, 2008).

Key Considerations and Criteria for Analysis

The viability of CHCs to deliver optimal health outcomes will be broken down, for measurement and comparison purposes, into three primary categories (and some subsets thereof). They are:

Accessibility (demand for primary care in CHCs) – The biggest overall question should be whether CHCs are able to continue their mission of serving residents of the state? How will changes in the law, or in insurance structures, affect CHCs’ reach in this way? What trends exist in Massachusetts post-reform, and what trends have existed in Minnesota in terms of how many people CHCs serve? Accessibility measurements to be considered include total numbers of patients reached, percentage of the population served, and the breakdown of who is being served in terms of insurance coverage, income, etc. to assess whether the assumption that newly insured individuals largely abandon public coverage holds true. As with supply and financial considerations, both Minnesota’s current situation and Massachusetts’ “before-and-after” data will be included for comparison.

Staffing (supply of primary care in CHCs) – the concrete discrepancy between the number of primary health professionals demanded and those available measures CHCs’ ability to deliver care at the most basic level; where doctors do not exist, access to care does not exist; where there are too few doctors, access to care will be suboptimal; and so on. What were the effects of reform on staffing at Massachusetts’ CHCs? What advantages, or disadvantages, do Minnesota’s CHCs have compared to Massachusetts regarding the number of primary care physicians available and the availability of funds directed at recruiting primary care physicians?

Financial – CHCs, like any level of the health care system, must be financially viable in order to deliver care. Will CHCs in Minnesota have the resources they need to provide services as they are called upon to help expand services under the ACA? Financial factors to be considered will include the estimated per-overall and per-patient costs and revenues in Massachusetts CHCs both pre-reform and currently; CHC-specific and broader primary care-specific funding that was available to Massachusetts and will be available to Minnesota via the ACA will also be compared in order to identify whether financial trends for Massachusetts’ CHCs can be expected in Minnesota.

Additional Notes

Though this approach to the research is practical given the scope of this paper, and given the somewhat cursory nature of the topic, it will come with certain limits. To begin, existing data on the effects of Massachusetts' health reform is limited, and cannot paint a picture beyond the first handful of years of the program's effects; given that a chief concern for CHCs will be what happens after funding from the ACA runs out, the limited timeframe in which we can currently measure the effect on CHCs in Massachusetts presents a challenge to painting an accurate and thorough picture of what Minnesota can expect. Furthermore, while data exists on the effects of the Massachusetts law in general, only a small proportion is dedicated to its effects on CHCs specifically; the integrity of the data and the analysis herein would surely be more robust with additional sources, but it is a limit that must be accepted (and acknowledged in the analysis) on this topic at this time. Finally, this paper will be attempting to extrapolate a veritable forecast for one state based on what has previously happened in similar circumstances in a different state (and only one state, at that). Again, the analysis would be more robust if more states besides Massachusetts had enacted reform that could act as a model for the ACA; but for now, the results from one other state will need to suffice, albeit with an acknowledgement that a perfectly analogous comparison is not entirely possible between two states with different population demographics and distributions, and different health care systems, at two times of contrasting economic vitality.

A more in-depth analysis could break down differences in current situation and expectations for CHCs based on rural-vs.-urban settings. In this analysis, I will be addressing CHCs in the state as a collective group; I recognize they are not homogenous. A major strain on the existing data from Massachusetts is that it is, similarly, not broken down by setting; Massachusetts' CHCs will therefore be held to comparison in similarly collective fashion.

A final limitation on the data will be a lack of accurate measurement of how many newly-insured patients, after reform, continued or will continue to seek care at the CHCs where they sought care when they were uninsured. Anecdotal survey data exists from Massachusetts' CHCs, but because of patient confidentiality requirements, and because many patients could not be tracked by companies administering insurance they did not have, this will remain a major factor to consider. Patients who leave CHCs after becoming insured – especially to seek specialty care to which they did not previously have access – could potentially decrease overall demand for primary care services in CHCs specifically while further straining demand for primary and other services, as predicted, in health care settings outside of CHCs.

Results

Accessibility – The Demand for Primary Care at CHCs in Massachusetts Before and After Chapter 58

The number of patients CHCs serve, and trends in the number served, is a salient (though very generalized) barometer for how well they are coping with demand (though how well those patients are served should also be considered, space and data is limited here). In this regard, CHCs in present-day Minnesota and pre-Chapter 58 Massachusetts share some similarities and some key differences. While the proportional breakdown of sources of coverage among those served is very similar, the overall number served in Minnesota is much lower; however, Minnesota has a lower uninsured rate than Massachusetts did in 2005, which could account for at least part of this difference. Because Massachusetts CHCs were able to increase the number of people served after reform, and because Minnesota's CHCs will have the additional boon of federal funding via the ACA, Minnesota's CHC patients should not expect to suffer from deteriorating access after the law takes effect. The strain on the existing primary care shortage will worsen on some fronts, but because the ACA will primarily

increase access to forms of care outside of CHCs – those requiring insurance – the effects will be more noticeable outside the community-based health care setting *if* newly-insured individuals take advantage of new access and do not continue seeking care at CHCs; there are mixed results regarding whether that has been the case.

Overall, Massachusetts' uninsured rate dropped dramatically after Chapter 58; between 2006 and 2010 the percentage of adults with insurance in the state rose from 86.6 percent to 94.2 percent, an increase of roughly 400,000 insured residents (Jha, 2013). Though Chapter 58 was a state act and did not channel federal funding to CHCs, Massachusetts' CHCs played a role in expanding coverage (and the state was privy to funds from the American Reinvestment and Recovery Act, or Stimulus, of 2009) (Ku, Jones, Shin, Byrne & Long, 2011); they already played a much larger role in providing care prior to reform than Minnesota's CHCs currently do. Though Massachusetts' population is not much larger than Minnesota's – roughly 6.5 million, compared to roughly 5.3 million as of the 2010 Census (US Census, 2010) – the former state has 36 FQHCs providing services at 303 sites (Massachusetts, 2013) compared to Minnesota's 17 CHCs and 70 sites (About Minnesota's Community Health Centers).

In the wake of reform, Massachusetts' CHCs saw an increase in their caseload of patients, as well as an increase in the number and percentage of patients covered by public programs; meanwhile, the number of uninsured patients being served by the state's CHCs decreased, as did the proportion of CHC patients who were uninsured. From 2005 to 2007, the number of patients served in the state's CHCs jumped from 431,005 to 482,503; the percentage of CHC patients who did not have insurance, meanwhile, shrank from 36 percent in 2005 to 26 percent in 2007 (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

In addressing whether resources were strained at CHCs, we might first point to a lower proportion of uninsured patients (and fewer overall – from over 15,000 estimated in 2005 to closer to

11,000 in 2009) (Ku, Jones, Shin, Byrne & Long, 2011). We should then note that the overall caseload went up, indicating that newly insured patients were not necessarily leaving CHCs, and that CHCs therefore played a front-line role in helping expand care, rather than a steady role as the continuing provider of care to those still uninsured; in other words, reform inflated the strains on CHCs on the demand side.

Three additional pieces of evidence support this hypothesis. First, many of Massachusetts' CHCs reported that many of their newly insured patients (contributing to the overall increase in caseload) had previously been their uninsured patients (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009); newly insured patients reported retaining CHC care because of its convenience (79 percent of those using CHCs) and because "they appreciate the services received" (Ku, Jones, Shin, Byrne & Long, 2011). Second, even as the rate of uninsured individuals dropped in the state, the percentage of the state's remaining uninsured population receiving care at CHC increased from 22 percent in 2006 to 36 percent in 2007 (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009); that rose to 38 percent in 2009 (Ku, Jones, Shin, Byrne & Long, 2011). While the percentage of low-income (below 300 percent of the FPG) adults without insurance dropped dramatically between 2006 and 2007, from 23.6 percent to 12.5 percent statewide, the percentage of those receiving care at CHCs in Massachusetts dropped much less steeply, from 40.1 percent in 2006 to 30.4 percent in 2007 (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Third, perhaps most notably, the proportion of patients being treated in Massachusetts' CHCs who were covered by public programs – this would include many of the newly-insured as public coverage was expanded to them – rose after Chapter 58, even as the total number of patients treated also increased. The proportion of Medicaid/SCHIP users being served at CHCs increased from 38 percent to 42 percent from 2005 to 2007; in that same period, the percentage of CHC patients being covered by Chapter 58 programs CommCare and MassHealth (Commonwealth Care, 2013) increased from zero to

five percent; those with private insurance – which would have also been made more accessible to the previously uninsured, though fewer uninsured were on the threshold for qualifying for private coverage than for public coverage, presumably – increased from 18 to 19 percent *as overall patients increased* (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). The number of publicly-covered patients in Massachusetts CHCs increased from roughly 15,000 to over 20,000 between 2005 and 2009 (Ku, Jones, Shin, Byrne & Long, 2011).

Taken together, these indicate that chapter 58 increased demand for primary services at CHCs; meanwhile, the continual uptick in caseload might indicate that CHCs in Massachusetts were able to meet demand with adequate supply. This will be explored in more depth in the next section. While the biggest effect of reform was to increase the number of insured individuals, meaning the biggest new strains on the health care system would have been for specialty services and other care outside the scope of CHCs, CHCs' caseloads increased as well, and the breakdown of coverage for those served by CHCs indicates that plenty of newly-insured patients remained at CHCs (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009) (Ku, Jones, Shin, Byrne & Long, 2011).

What, then, can Minnesota's CHCs expect in terms of providing care and access as the ACA takes effect? While we cannot comprehensively predict the outcome with certainty, there are clues as to whether Minnesota's CHCs will experience outcomes in the wake of the ACA similar to those experienced by Massachusetts' CHCs in the wake of Chapter 58 in terms of the demand of CHC primary care services.

The insurance coverage breakdown of those served by CHCs in Minnesota is similar to that of Massachusetts' CHCs prior to reform, and while Minnesota currently has fewer CHCs per capita and serves fewer people overall, the state's CHCs have consistently increased their cases in the last decade-plus; that is, demand has gone up. Recall that prior to Chapter 58, 36 percent of Massachusetts CHC

patients were uninsured and 38 percent were covered by public programs (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009); in Minnesota, as of 2008, 37 percent of CHC patients were uninsured and 43 percent were enrolled in public programs (Patients Insurance Status vs. State, 2008). Meanwhile, those public programs in Minnesota include coverage similar to MassCare and Commonwealth Care; General Assistance Medical Care (GAMC) and Minnesota Care provide coverage for low-income Minnesotans who do not qualify for other public programs (Chun, 2010) (Minnesota Care, 2012) (Brooks, 2013). This could indicate that Minnesota's demand for CHC care will actually not increase as drastically as Massachusetts', for whom five percent of the uptick in demand was attributable to those covered by new public programs (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009) (Commonwealth Care, 2013).

At the same time, Minnesota CHCs serve (and have served) considerably fewer people than Massachusetts', but their cases have increased from 79,901 in 1999 to 154,961 in 2008 (1999 – 2008 Total MNACHC Patients). Looking ahead to supply, this might indicate Minnesota's CHCs have a lower capacity to handle cases overall – they do, concretely – but Minnesota also currently has a lower uninsured rate at nine percent (Patients Insurance Status vs. State, 2008) than Massachusetts did prior to reform, at over 13 percent (Jha, 2013) and thus has lower overall demand for community-based primary coverage.

Taken together, these factors indicate similarities in delivery of care via CHCs in Minnesota currently and Massachusetts prior to reform, albeit in different proportions relative to state population – something that could be attributed to Minnesota's lower uninsured rate. Given Massachusetts CHCs' increase in demand post-Chapter 58, indicates Minnesota's CHCs should expect one after federal reform takes effect, albeit a potentially less-drastic one given Minnesota's public coverage is already more extensive than Massachusetts' prior to Chapter 58. More individuals will have access to care at CHCs due

to reform; the biggest obstacle will be whether CHCs can continue to cope with demand after federal funding – which will be a boon in the state’s CHCs’ attempts to meet the demand – dries up.

One additional note – it has yet to be seen whether Minnesota’s newly-insured under the ACA will retain CHC coverage at the same rate as occurred in Massachusetts. This is unpredictable - in serving as a principal means of access to care for the uninsured, CHCs in Minnesota might not experience the same extent of an increase in demand as means of care that require insurance; increasing insurance rates and access, after all, is the primary aim of the ACA. The real issues of access could be for the newly insured as venues of primary care requiring insurance will experience significant upticks in demand.

Staffing – The Supply of Primary Care in CHCs in Massachusetts, Before and After Chapter 58

The most poignant metric for how CHCs in any state can cope with increased demand relative to the supply of primary care physicians is to examine that supply itself. Does reform that emphasizes expanding access to health care emphasize primary care enough to effectively recruit a higher proportion of the workforce to that field overall? Does reform emphasize the role of CHCs enough to effectively draw primary care physicians – new and veteran alike – to underserved areas and CHCs? In examining the cases of Massachusetts and, going forward, Minnesota, what were the outcomes in Massachusetts regarding the shortage of primary care physicians in CHCs, and how might Minnesota’s CHCs fare? What advantages in primary care staffing does either state possess in this comparison? Massachusetts’ CHCs were able to keep up with demand, though the supply became increasingly strained and staffing remains a substantial barrier to expanding access further; but access *was* expanded. While Minnesota’s existing supply of primary care physicians is proportionately smaller than Massachusetts’, this disadvantage could be cancelled out by other advantages of the state’s expanding access and primary care demand under a federal, and federally-funded, law.

While the demand was increased for primary care in Massachusetts CHCs, some evidence suggests the strain was not too excessive for the supply to match it. A study of Medicare-eligible patients from 2004 to 2009 found that, after reform, preventable hospitalizations for chronic conditions decreased by 101 per 100,000 population, compared to a reduction of 83 in control states, indicating Chapter 58 had not had a deleterious effect on health outcomes affected by primary care access (Joynt, Chan, Orav, & Jha, 2013). Though this study does not tell us anything about the effect of reform on access to primary care for the uninsured specifically, it is at least one indication that, overall, Massachusetts' reform did not create a significant strain on primary care resources, contrary to reports that more adults (seven percent, compared to four percent prior to reform) self-reported that they were going without primary care after reform (Access Transformed, 2008).

On the contrary, a study through 2009 found that overall non-emergency room ambulatory hospital visits increased for both hospitals overall and especially for safety net providers; safety net hospitals (whose revenue comes from serving publicly-covered patients and who also serve the uninsured) saw these visits increase nine percent from 2006 to 2009; non-safety net hospitals saw a four percent increase. This indicates that, to some extent, the supply of primary and preventative services may not have matched increasing demand; while overall patients served in primary settings can indicate an uptick in accessibility, hospital stays are less voluntary and do not correlate as closely with insurance coverage. On the brighter side, meanwhile, overall inpatient admissions rose only two percent for both safety net and non-safety net hospitals during the same period, indicating the supply of preventative care may not have been as overmatched in some cases, regions, etc. (Ku, Jones, Shin, Byrne & Long, 2011).

Despite having increased patients' accessibility to care in the wake of Chapter 58, each CHC in Massachusetts visited by Ku, et al (2009) for their Kaiser Foundation report indicated that a shortage of

available, qualified providers remained a major problem in providing care. The authors of the report stated “health care reform has made the general shortage of primary care practitioners more apparent in Massachusetts” (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Massachusetts’ CHCs have been able to relatively keep up with increased demand for primary care – if not close the gap – since reform by taking some innovative (and some other, less-innovative) measures. Many CHCs increased provider salaries by up to 50 percent; others have utilized NHSC-placed medical graduates and international medical graduates who earned special visa status to live and work in the US in exchange for practicing primary care in health centers. The Massachusetts League of Community Health Centers began an in-state initiative mirroring the NHSC, designed to attract new medical graduates to work in CHCs by alleviating some of their student loan burden. Other centers, meanwhile, attempted to make more efficient use of primary care physicians available by creating waiting lists and excluding patients who do not live in a given CHC’s service area (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Still, that more patients were able to be served in Massachusetts’ CHCs means the state’s health care reform was successful in attempting to expand care; even if staffing remains a significant obstacle to care, and potentially a barrier to attaining coverage for all residents, the overall situation was improved purely in terms of access to care (information on the health outcomes of those served, with the exception of aforementioned data on hospital visits and readmission, as well as information on the effects of reform on disparities of access and coverage among racial and socioeconomic lines, is not included here for scope and space purposes). At this rate, we might reasonably say Massachusetts’ state health care reform proved beneficial, if not a fix-all, for expanding access to primary care via CHCs; an increase in the demand for care forced CHCs to maximize their available supply and spurred the

development of new means to increase that supply, including utilizing existing funnels for the supply of primary care physicians for CHCs.

How might Minnesota's CHCs fare in terms of primary care supply to meet increased demand?

Two pieces of evidence point to two separate conclusions. First, Massachusetts has an advantage in the sheer number of primary care physicians available. In fact, Massachusetts has the highest rate of primary care physicians per capita of any state, at 132 primary care physicians per 100,000 population overall. Minnesota's rate per capita – 103.8 per 100,000 residents – is still well above the US median (90.5 per 100,000) but still far below the proportion of Massachusetts residents who provide primary health care services (State Physician Workforce Data Book, 2011). Prior to considering the effects of additional funding and programs to spur primary care physician recruitment to CHCs resulting from the ACA, Minnesota sits at a disadvantage compared to Massachusetts in terms of raw supply of the primary care workforce.

That said, Minnesota will be subject to ACA programming that was not available to Massachusetts as it took on state-level reform (though, to reiterate, they have since gained federal stimulus funds) (Ku, Jones, Shin, Byrne & Long, 2011), which could spur the supply of primary care physicians in Minnesota in ways that Chapter 58 did not for Massachusetts. Minnesota CHC grantees have been granted \$37.7 million thus far under the ACA, of which significant portions (as well as portions of the 2009 Recovery Act) have been designated to recruit primary care physicians by expanding funds for (and therefore the reach of) the NHSC. These funds have already taken effect – as of September 2012, 228 NHSC members were providing primary care services in Minnesota, up from 67 in 2008 (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). However, an ongoing concern will be whether this spur in supply remains sustainable once funding from the ACA – which is finite – ceases.

In short, Minnesota has a disadvantage in terms of primary care physicians per capita compared to Massachusetts; however, the former state will enjoy the advantage of federal funding to support efforts at expanding demand. Whether the legislation can sufficiently spur a market-driven supply for primary care has yet to be seen; whether Minnesota can match or even exceed Massachusetts' success in utilizing existing supply and further spurring the creation of additional supply to meet – or at least sufficiently satisfy – the increased demand for primary care post-reform could depend on the ability and willingness of health care providers in the state to develop and utilize methods that create additional supply, streamline the use of existing supply to maximize efficiency, and/or restructure existing supply and the way care is delivered to increase the reach of safety net primary care – even potentially outside the CHC setting. I will briefly discuss potential options following the conclusion of the case study analysis.

Financial – Sustaining Supply to Meet Demand

Assuming supply and demand can be reasonably matched, a further obstacle to the continued provision of primary care services by CHCs is the financial viability of those CHCs. Can the centers operate at a level that keeps up with demand? Do they have the infrastructure and technology to provide necessary services? And do (and will) states' health care systems have the financial wherewithal to increase the number of primary care physicians and place more of them in CHCs? Encouraging signs come from Massachusetts, whose CHCs actually became more financially viable after reform; the key takeaway is that increases in revenues spurred by an increase in the number and proportion of insured patients more than offset the ongoing cost of treating uninsured patients. Minnesota's CHCs appear poised to experience similar financial growth, at least as long as federal funding from the ACA is present (such funds were not present for Massachusetts after Chapter 58); however, the major questions remaining are whether various factors will offset – namely, whether newly-insured patients will vacate

CHCs or remain there, bringing revenue with them – and whether enough of the financial boon headed for CHCs post-ACA is directed at increasing the availability of primary care in those centers, lest the otherwise increased financial capacity go to waste. Plans abound, but we cannot yet tell whether they will be effective.

Massachusetts' CHCs saw both their revenue and costs (total and per-patient) increase from 2005 to 2007, after Chapter 58 expanded coverage and created an uptick in demand for care. Fortunately, revenues increased more than costs and the state's CHCs' financial margins increased after reform. Total revenues rose roughly 14 percent in both 2006 and 2007, from \$348.3 million in 2005 to \$396.3 million in 2006 and \$450.8 million in 2007. Per-patient, revenue rose from \$862 million in 2005 to \$916 million in 2006 and \$934 million in 2007. These increases were the result not only of overall increases in the volume of patients served (see the next section), but also from a \$10 million annual boost in payment rates coming from MassHealth, the state Medicaid and SCHIP program (Commonwealth Care, 2013) (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Overall costs for Massachusetts' CHCs rose 11 percent in 2006 and 15 percent in 2007, increasing from \$350 million in 2005 to \$389 million in 2006 and \$446 million in 2007; adjusted for medical inflation, per-patient costs rose less steeply (thus accounting for the increase in patients served) from \$812 in 2005 to \$898 in 2006 and \$924 in 2007 (increases of four and three percent, respectively) (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). The result of reform was overall positive on the financial margins of Massachusetts' CHCs – though FQHCs are nonprofit, they carry debts and surpluses from year-to-year and each factors into their operational costs. In 2005, the state's CHCs lost \$1.7 million (a -0.5 percent margin); in 2006 they made \$7.8 million in 2006 and \$4.9 million in 2007 (proportional margins of positive 2.0 and 1.1, respectively). Results were not uniformly positive, however, as the aforementioned margins are aggregate measurements; Massachusetts' CHCs had 2007

financial margins ranging from under negative 20 percent to over positive 20 percent, with a median of positive 0.5 percent (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Meanwhile, Minnesota's CHCs in 2011 showed a margin similar to Massachusetts' in 2005. All centers reported a total financial cost of \$134,864,037 that year, including donations (Financial Costs, 2012) and reported patient-based revenues (including public and private coverage) of \$79,803,412 collected (though \$131,278,365 was charged) (Patient Related Revenue, 2012) and other revenues totaling \$52,228,134 (Other Revenues, 2012). That totals \$132,031,546 in revenues collected for a loss of \$2.8 million, or a margin of roughly negative two percent. That is not ideal as they seek to deal with increases in demand, but recall that 1) Massachusetts' CHCs saw similar margins before increases in public coverage increased their patient-based revenues, and 2) federal funding via the ACA will improve Minnesota CHCs' financial situation further, at least as long as that federal funding lasts.

More clues lie in where the revenues and costs came from, and how that shifted after Chapter 58. The largest increase in overall and per-patient revenue for Massachusetts' CHCs were from patient revenues from MassHealth and Commonwealth Care, a public program for low-income residents who do not meet eligibility for other programs (Commonwealth Care, 2013); the proportion of revenues from these sources rose from 40 percent in 2005 and 2006 to 46 percent in 2007 (a 30 percent increase for that category), offsetting a 12.4 percent decrease in state and local grants and a four percent decrease in state indigent funding, and accompanying a modest, four percent increase in federal grants during the same period (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). By increasing accessibility to public programs, most notably through a state Medicaid expansion (Kaiser Family Foundation, 2012), Massachusetts set the stage for increased revenues in its CHCs as previously uninsured patients who still sought care at FQHCs now brought revenue to the centers via public programs, as opposed to bringing minimal revenue in as uninsured patients (The Commonwealth Fund, 2009). CHCs in the state reported

that many of their patients who were newly insured after reform had previously been uninsured patients at the same centers (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009).

Legislation signed by Governor Mark Dayton in February guarantees that Minnesota will voluntarily adopt the ACA provision expanding Medicaid to those under 65 earning 133 percent of the FPG (roughly \$15,000 annually for individual adults); this is expected to expand some form of public coverage (since newly-Medicaid eligible individuals will be able to move off state programs such as MinnesotaCare, other public programs will also be able to reach more residents) to 35,000 childless adults in Minnesota (Brooks, 2013). Overall, the ACA is expected to expand coverage to between 298,000 and 382,597 of the state's uninsured adults – roughly 90 percent of the 423,085 currently uninsured (Todd-Malmov & Golden, 2013) (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). Because Minnesota's CHCs serve a population disproportionately consisting of uninsured individuals – 37 percent to the state's overall nine percent (2008 MNACHC Patients Insurance Status vs. State), revenues from newly-insured individuals could provide a major revenue boost to centers in the state, provided the newly insured who previously utilized CHCs continue seeking care at CHCs; it is certainly feasible that, enabled by new coverage, they will seek more specialized care and care outside of CHCs to which they did not previously have access.

The Medicaid expansion provides a potential additional boon for Minnesota's health care system on the whole, and CHCs by extension. Because the federal government is covering the cost of the expansion – 100 percent initially, and 90 percent in the future – it is expected to save the state roughly \$129 million in the first two years of the ACA's taking effect; this is expected to offset the cost of shifting approximately 145,000 Minnesotans from MinnesotaCare and onto Medicaid; the shift will also allow more Minnesotans to be covered by MinnesotaCare (Brooks, 2013). Overall, the increase in the insurance rate should provide increases in revenue for Minnesota's CHCs compared to treating

uninsured patients. The largest question, though, will be whether the remaining uninsured come out of the woodwork and begin seeking treatment from CHCs, and if so, whether it will be to an extent that offsets increased revenues (additionally, we should consider to what extent the newly insured will vacate CHCs and deprive them of potential revenue); Minnesota's CHCs, serving 154,961 patients, of whom 37 percent, are uninsured, as of 2008 (1999-2008 Total MNACHC Patients) (2008 MNACHC Patients Insurance Status vs. State), are only serving approximately 57,000 of Minnesota's uninsured - small portion of the 423,085 currently uninsured (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). How many are being, and will be, left out, is difficult to predict and could affect the outcomes.

Overall, signs appear positive that Minnesota's CHCs can expect a boon in revenue after the ACA, though questions remain about the extent to which it will be offset by other factors. Furthermore, Minnesota's CHC grantees have been granted \$37.7 million thus far in additional funds from the ACA, of which \$3.6 million will go toward new access points, which help offset the cost of treating the uninsured by establishing new CHC locations and providing primary services (theoretically lowering the rate of emergency and other expensive care), and \$15.4 million will go toward expanding capital (HHS awards Affordable Care Act funds to expand access to health care, 2011) (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). But what good is increased funding and the subsequently increased operating capacity in the absence of primary care doctors to keep up with that increased capacity? It seems possible that, absent major shifts in medical workforce trends, CHCs could have more money, and perhaps match the uptick in demand, but not cover the gap in primary care. The ACA does contain some provisions to fund an increased supply of primary care: \$200,000 will support the National Health Service Corps, which helps repay student loans for health care professionals who temporarily serve in HPSAs, primarily at CHCs (How the Health Care Law is Making a Difference for the People of Minnesota, 2012); additionally, the ACA includes 5-year project grants to expand primary care residency

availability in states (Catalog of Federal Domestic Assistance). These sources of funding, however, along with some of the solutions they produce – notably, the placement of NHSC physicians into HPSAs – are temporary. To reiterate, Minnesota’s CHCs may well experience financial soundness as health care coverage at the margins expands with the ACA – at least keeping up with demand, based on how Massachusetts’ CHCs fared under similar circumstances – but much remains to be seen about how various factors will (or will not) offset, whether the primary care shortage is further strained by CHCs’ increased capacity, and whether the ACA’s financial solutions for spurring primary care migration to CHCs has a significant, and lasting, effect.

Analysis

What Massachusetts Did Right

The major takeaway for CHCs in the wake of Massachusetts’ state health reform efforts is that CHCs saw an uptick in demand via expanded access (due largely to the newly insured *not* abandoning CHCs in droves), a subsequent improvement (on aggregate) of their financial margins, and, though staffing remained suboptimal following the expansion of access and therefore demand for primary care at centers, steps were taken that allowed at least some of the new demand to be met. As the ACA – a federal attempt at health reform whose policy design largely mirrors Chapter 58 – takes effect, Minnesota can draw on several lessons from Massachusetts in aiming to match the supply of primary care at CHCs with the coming increase in demand.

First, Massachusetts expanded its safety net care access in addition to merely making private insurance more accessible. In creating CommCare and MassHealth, programs that expanded access to public coverage (Commonwealth Care, 2013), Chapter 58 created the double policy benefit of covering

more individuals (making all forms of care, including specialized care, more accessible to the newly-insured) and generating a source of revenue (compared to treating the uninsured) via public coverage; wherever the newly insured sought care, they would provide more revenue, and that they largely continued seeking care at CHCs (where they had previously sought care as uninsured individuals) provided a major boon to CHCs as they dealt with higher caseloads post-reform (Ku, Jones, Shin, Byrne & Long, 2011) (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). As a result, CommCare and MassHealth constituted five percent of CHC revenues in the state after reform, and overall public-coverage revenues increased from 40 percent to 46 percent of CHC revenues after Chapter 58 (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). From the perspective of financial capacity alone (excluding physical staff numbers), expanding public coverage provided more capital for CHCs to operate while simultaneously making their primary services more accessible.

In terms of spurring the supply of staff to meet the demand for CHCs' primary services, Massachusetts was innovative in recruiting and retaining staff – something CHCs reported remained a major challenge as demand rose post-reform. CHCs sought to maximize their supply of primary care physicians by raising salaries and offering incentives beyond standard federal programs such as NHSC, including offering work visas for international medical graduates and creating a state-level loan assistance program similar to NHSC (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009). Spurring the supply of primary care to match demand was not a direct result of Chapter 58, however, and while Massachusetts' CHCs were able to meet at least some of the increased demand, the efficiency-oriented strategies they had to adopt necessarily excluded at least some of the new demand (it is difficult to tell how much demand went unmet) and health outcomes may have suffered as a result due to less attention per patient from primary care physicians. By providing some funding directly intended to spur the supply of primary care, the ACA could help CHCs in states perform better as the federal law takes effect (How the Health Care Law is Making a Difference for the People of Minnesota, 2012).

Where Minnesota and Massachusetts Overlap

Minnesota has taken some steps to help ensure the successful management of new demand for primary care by its CHCs post-ACA. Many of these are similar to the steps that helped Massachusetts' centers meet – at least partially – the increased demand they faced after state reform. Chief among them is the expansion of public coverage – optional in the case of the ACA, whose clause requiring an expansion of Medicaid was made optional in the US Supreme Court's 2012 ruling on the legislation (A Guide to the Supreme Court's Decision on the ACA's Medicaid Expansion, 2012). Minnesota voluntarily adopted the expansion, which, coupled with the pre-existing program MinnesotaCare (Brooks, 2013), should provide revenue boosts to Minnesota's safety net-level provider, including CHCs, in the same manner as Massachusetts' expansion of public programs and its own Medicaid threshold (Commonwealth Care Program Guide, 2011).

Minnesota's willingness to exert state-level influence supplementing and bolstering federal efforts reflects a feature of Massachusetts' own state efforts that bode well for community care providers as they aim to cope with new strains, according to Patrick Holland, a health care specialist and director of the Boston office of Wakely Consulting. "Massachusetts was in a good position. They had a big network of CHCs, of doctors, and a lower uninsured rate. There is an entire boutique industry in the state in terms of the safety net – it's well-funded and they do really good work. It's clearly part of the culture," he says. "CHCs face a business challenge, potentially. It's always a challenge attracting physicians to rural areas. They will have to make use of [physician assistants and nurse practitioners]." He emphasizes that the challenge will be more poignant for CHCs in states that do not accept the ACA's Medicaid expansion and will need to "play more like a commercial provider" to compete in the insurance exchange. "Minnesota and Massachusetts have similar cultures of doing what's right," he

continues. “That won’t be the case in other states” (P. Holland, personal communication, April 23, 2013).

Meanwhile, Massachusetts’ CHCs largely saw their newly-insured patients stay in the community setting for primary care; Deanna Mills, Executive Director of the University-Community Health Care Center in Minneapolis, says that will also be the case in Minnesota, at least in urban settings. “A lot of uninsured individuals are already being seen somewhere. It’s not that they are going without care right now, at least in the city,” she says. “Once they’re covered, the difference for use won’t be that we have lots more people. It will be that there is money attached to their visits instead of CHCs having to keep scrambling for grants and so on...while I don’t know a lot about the situation in rural clinics, in some places CHCs are the lone provider, beyond just the safety net. So their situation will probably be largely the same” (D. Mills, personal communication, May 6, 2013).

How Minnesota Can – and Is – Taking Additional Steps

The biggest cause for optimism in Minnesota CHCs’ ability to deal with increased demand for primary services is that Minnesota, via the federal ACA, is taking further steps to increase the supply of primary care physicians in the state as reform sets in. Recall that Minnesota sits at a disadvantage compared to Massachusetts in terms of primary care physicians per capita, with 103.8 per 100,000 residents compared to 132 in Massachusetts (State Physician Workforce Data Book, 2011); however, federal funds directed at recruiting primary care physicians, and especially recruiting them to work in underserved areas where CHCs provide care, will be a feature of Minnesota’s attempt at reform (again, via a federal law) that was not present for Massachusetts’ state-level efforts. Minnesota CHC grantees have received \$37.7 million thus far under the ACA, of which significant portions (as well as portions of the 2009 Recovery Act) have been designated to recruit primary care physicians by expanding funds for (and therefore the reach of) the NHSC. Recall that as of September 2012, 228 NHSC members were

providing primary care services in Minnesota, up from 67 in 2008 (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). It has yet to be seen whether this will have a large enough effect to meet increased demand, as well as whether the effect will be lasting; will physicians recruited under NHSC remain in CHCs after their assignment has ended (not all Teach for American members remain teachers, to be certain)? And what happens when federal funding via the ACA ends?

Supply of primary care physicians aside, Minnesota CHCs will have a federal funding advantage in building the capital necessary to handle increased demand. Of the \$37.7 million that has been sent to the state's CHCs, \$3.6 million has been designated to help offset the cost of treating the uninsured by establishing new access points (new centers) in underserved areas currently unserved by a CHC and reducing the need for emergency, hospital, and other non-safety net care for underserved residents of those areas (HHS awards Affordable Care Act funds to expand access to health care, 2011) (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). An additional \$15.4 million is going toward expanding capital (How the Health Care Law is Making a Difference for the People of Minnesota, 2012). Still, whether the expansion of capital is effective will hinge on whether Minnesota CHCs are adequately supplied with primary care physicians – something that could require an alternative solution.

Outside the Box: Expanding the Scope of Community-Based Care

Meeting the demand for primary health care services in community settings could require expanding our understanding of what comprises that supply. One option is expanding the scope of practice of non-physicians – notably physician assistants (PAs) and nurse practitioners (NPs) – to allow them more practicing responsibilities, for example, or to allow them to perform more duties in the absence of a physician; Minnesota has begun experimenting with expansion of scope of practice in the dental setting, establishing a position called “dental therapist” – a mid-level dental practitioner

comparable to a PA – which saw its first certifications earlier this year (Rosenblum, 2013) (Scandrett, 2009).

Expanding the scope of primary care practice would conceivably allow for more primary care services to be rendered, especially in settings such as CHCs where the supply of physicians alone might not meet the overall demand for services. For example, PAs in Kentucky are advocating for legislation loosening the state’s requirement that they spend 18 months under the supervision of a physician – the most stringent state requirement. Massachusetts has expanded their scope marginally, allowing PAs to bill patients and insurers directly for their services, generally at 85 percent of the doctor’s rate (thus saving the physician from time-consuming paperwork) (Beck, 2013).

Such expansion of scope could be especially timely not only as demand for services grows – especially in rural and other underserved areas that have trouble attracting physicians – but also as the number of PAs balloons and offers an increasingly viable means to cover gaps between demand and supply. According to the American Academy of Physician Assistants, the number of licensed PAs in the US has doubled in the last decade to 86,500, and is expected to grow an additional 30 percent by 2020 (Beck, 2013). Similarly, the number of NPs grew steadily for several decades and offers potential to help CHCs cover the gap between supply and demand; but while NPs perform a range of primary care services, their independence is limited, which has the potential to inadvertently require additional time, and additional stretching of resources, on the part of physicians (Sherwood, Brown, Fay, & Wardell, 1997).

Perhaps the most compelling argument in favor of expanding the scope of practice of non-physicians is that many primary care physicians themselves have expressed that the scope of services expected from them is too broad. In a 1999 study, long before the shortage in primary care was as exacerbated as badly as today, 30 percent of primary care physicians reported that the scope of practice

required of them had grown in the previous two years; 24 percent reported that the scope was greater than it should be (St. Peter, Reed, Kemper, & Blumenthal, 1999). As the scope of practice expands and stretches thin existing primary care physicians – in all settings, CHCs included – expanding the allowed responsibilities of an increasing supply of non-physicians who are nonetheless largely qualified to provide primary health care services seems an intuitive solution to help match the supply of primary care overall in CHCs to the increasing demand.

That said, expanding the roles of non-physicians carries the plausible risk that diagnoses that might be made by highly-skilled and veteran physicians could be missed by PAs and NPs, whose medical training is less extensive. This is presumably not always the case – many of my friends in medical school can attest that a veteran nurse is a far more competent practitioner than an MD fresh out of school starting his or her residency; however, where highly-skilled physicians might make diagnoses that ultimately guide care effectively, a missed diagnosis can lead to complications and ultimately to higher costs for the health care system in the long term when an untreated condition manifests itself as an acute symptom. Therefore expanding the scope of care, as outlined above, will require caution and an effective system for feedback; effective metrics determining the health outcomes and costs resulting from expansion of primary care roles for PAs and NPs will be a crucial piece of such a policy.

In addition to expanding our understanding of what constitutes the supply of primary care, relaxing our understanding of a setting in which community-based primary care can take place could help alleviate the gap between supply and demand, both merely by changing the scope of our consideration of the problem and, more substantially, by spurring the development of alternative resources when recruiting physicians to CHCs is insufficient to cover the difference. Community health workers (CHWs) are public health workers and not (necessarily) physicians; however they provide a range of services – including lifestyle and diet consultation and keeping in regular contact with patients,

accompanying them to appointments, etc. – that can serve to both improve the health outcomes of patients directly (as in the case of lifestyle consultation) and maximize the effectiveness of care received in a CHC setting (as in the case of accompanying patients to appointments, providing follow-up, etc.) (O'Brien, 2012). Beyond the theoretical implications of incorporating CHWs into consideration of primary care supply, a 2010 study demonstrated that CHW presence in patients' treatment improved health outcomes and health care access overall (Rosenthal, Brownstein, Rush, Hirsch, Willaert, Scott, Holderby, & Fox, 2010).

The ACA contains provisions to spur the presence of CHWs, including investments in health workforce training, public health infrastructure, new public health programming, and health workforce analysis and planning (via the creation of the independent National Health Care Workforce Commission) (Morrissey, 2011). Likewise, Massachusetts' Chapter 58 contained provisions to develop the public health workforce, which overall helped address many disparities of outcomes and access among underserved populations (in and out of the CHC setting); however, CHWs faced challenges from not being officially integrated as professionals in the health care workforce – they effectively work as advocates from the outside (Anthony, Gowler, Hirsch, & Wilkinson, 2009). Methods for integrating CHWs as a formal part of the CHC structure, including offering reimbursement for their services and establishing a credentialing body, could help maximize their work and effectively spread the access to primary services, in some form, both in and out of the formal CHC setting, in turn cutting down on the shortage of primary care supply. Minnesota is actually a leader in this case, having adopted a comprehensive policy to foster the development and utilization of CHWs (Minnesota Community Health Worker Project, 2008) and having made CHWs' services reimbursable under Medicaid (Rosenthal, Brownstein, Rush, Hirsch, Willaert, Scott, Holderby, & Fox, 2010).

Both the expansion of the scope of practice by non-physicians and the integration of CHWs into the health care workforce can, rightfully, expand our definitions of the available supply of primary care in the community setting, as well as expand our understanding of what constitutes that community setting. If CHCs are designed to reach certain populations where they live, expanding services available both in *and* outside the formal walls of a CHC can further aid in making primary care available to all who need it. Currently, according to the National Institute for Health Reform, Minnesota is a state with high prospective demand for primary care professionals and simultaneously restrictive scope-of-practice allowance laws (Carrier, Yee & Stark, 2011).

Additional Analysis and Issues

While we can attempt to glean clues about the direction Minnesota's CHCs fortunes will go as the ACA sets in based on a prior case, there remain numerous unpredictable factors that convolute one's ability to accurately predict what will occur; the behavior of a state population and its health future are both impossible to forecast with complete accuracy. To begin, while it was largely the case that newly insured who were receiving care at CHCs prior to being covered retained their CHC care, due primarily to proximity (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009), the implications of expanding access to more exclusive care across the board (in and out of the community setting) are harder to predict and could have broader implications for the distribution of labor and resources across the entire health care system and CHCs by extension. Put simply, a one-unit increase in the number of patients covered will not necessarily lead to a one-unit increase in the demand for care, especially as the newly-insured gain access to specialized treatments. This could alter the balance in the supply of primary-vs.-specialty practitioners (Davis, Schoen & Stremikis, 2010), which until now has been discussed on the assumption that the balance would remain unaltered as federal funding promoting primary professional recruitment affected the supply. The scope of demand itself will matter for Minnesota's providers. A

recent study of newly-covered Medicaid patients in Oregon found that newly-insured patients indeed sought a broader range of medical services (Baicker, et al, 2013).

Minnesota's early (and pioneering) forays into expanding its scope of practice through creating a mid-level dental practitioner – dental therapist (Rosenblum, 2013) (Scandrett, 2009) – illustrate an instance of the expanding scope of demand; this highlights the cloudiness facing those who would attempt to predict health care system outcomes as both the scope of care demanded and the evolution of the makeup of practitioner supply evolve while more of the state's residents enter the health care system. The addition of the supply of specialized (in this case dental) care can in some ways help meet what expounded demand results from better access to services for the newly insured; on the other, it partially negates what advantage Minnesota's health care system as a whole might have – *post-ACA* – in meeting new demand due to its lower initial uninsured rate compared to Massachusetts (Patients by Age and Gender, 2008). In other words, Minnesota might be better-equipped to meet increased demand before it increases due to the ACA than Massachusetts was prior to Chapter 58, but because the mechanism (expanding scope of dental practice) was in place before reform set in, said advantage could be a non-factor as Minnesota's system copes with an influx of patients.

Meanwhile, in considering the supply of primary care and CHC resources in particular, it is crucial to remember the human element – clinics and their resources are at the mercy of their management, and resources can be mismanaged. To assume that CHCs will bring maximal returns on investment as money flows into them post-ACA would likely be too optimistic. In *Strategic Management of Health Care Organizations*, Linda E. Swayne, W. Jack Duncan and Peter M. Ginter (2008) write that “health care has had difficulty in dealing with a dynamic environment, holding down costs, diversifying wisely, and balancing capacity with demand’...only a structured strategic management approach that recognized the value of emergent thinking could make sense of that rapidly changing environment.”

They make the case that such strategic management is no exact science. Meanwhile, Louis C. Gapenski and George H. Pink (2010) point out that as the ACA brings cash into CHCs across the country, little is written into the reform law that dictates how that money should be used; while this allows for maximal freedom of strategic management in CHCs, it also allows for the most potential error and mismanagement of resources. Such room for error has spurred NACHC to offer a slew of information to members on financial operations and management to help ensure that CHCs nationwide are run as efficiently as possible (Financial/Operations Management). Additionally, the Bureau of Primary Health Care (BPHC) requires CHCs to report on certain financial performance measures, including the change in net assets to expense ratio and their long-term debt to equity ratio (BPHC). If additional funding, and additional access points, are to mean more effective and/or further-reaching care for CHC patients, the systems managing CHCs will need to be streamlined as funding flows in. Whether this occurs sufficiently will be a major factor in post-ACA outcomes for CHCs and their patients; the perceived effectiveness with which CHCs handle their cash could have popular and political implications for the renewal of funds.

This will be especially crucial for Minnesota CHCs as the state advances its health care payment reform away from fee-for-service and toward a shared savings system, such as accountable care organizations (ACOs). Mills says she believes Minnesota is so far ahead in adapting to access issues – having taken on Medicaid expansion and developed Minnesota Care prior to the ACA’s taking effect in 2014 – that the biggest looming issue for CHCs in the state will not be issues of capacity but rather issues of financial management as Minnesota proves a leader in payment reform. “Under [ACOs], we will sign a contract with the [Minnesota] Department of Human Services to integrate our health care delivery systems, and then we will get a chunk of funding to treat everyone instead of receiving our revenue through fee-for-service,” she says. “In the shared savings program, if we [CHCs] can save money in the system, we will get a piece of it” (D. Mills, personal communication, May 6, 2013). This could create

staffing concerns anew, as the accountable care model makes investments in primary care physicians (due to the cost savings they can potentially provide) more attractive to providers outside the CHC setting and medical students are more heavily recruited to serve as primary care physicians by private insurers and non-CHC hospitals.

Furthermore, CHCs in Minnesota and elsewhere will require adaptations to their delivery systems if they are to maximize their capacity to provide effective care and do so with the efficiency demanded of a new payment system and of taxpayers who help determine their political viability. The integration of multiple forms of care for complementary conditions will be a key consideration in this effort; for instance, CHCs serving populations on the fringes of the health care system as safety net providers will benefit (as will, more importantly, their patients) from the effective integration of primary and mental health care, the latter of which has only gained recognition as a key element in health care (rather than as a separate entity) relatively recently (Collins, Hewson, Munger & Wade, 2010). Additionally, better information systems will be required as patients on the fringes of the insurance system go through the “churning” process as the ACA takes effect, wherein many on the threshold of Medicaid eligibility bounce between Medicaid coverage and low-level coverage packages gained from the insurance exchange (Sommers & Rosenbaum, 2011); as patients move between plans and are subject to variable eligibilities, information technology systems capable of tracking their information efficiently will be crucial to the effective functioning of safety net care providers. Significant investments of capital aimed at improving infrastructure (including technology infrastructure) – not simply investments aimed at bolstering staffing – will be crucial to the effectiveness of CHCs moving forward into the era of the ACA.

Lastly, briefly, this analysis has made no consideration of undocumented residents and their effect on demand or aggregate outcomes, either for the residents themselves or for CHCs. Of the over 9

million undocumented immigrants in the US, Minnesota was estimated to have under just over 20,000 as of 2002 (Passel, Capps & Fix, 2004) – though Pew estimated the number to be roughly 95,000 in 2010 (Peters, 2010) – mitigating the effect on Minnesota’s health care industry and CHCs compared to some other states as the ACA expands coverage but the undocumented remain excluded. Nonetheless, this merits consideration in a separate or more thorough analysis. The presence of migrant patients at CHCs – be they documented or otherwise – serves as a reminder that CHC staff will need to be sufficiently diverse and culturally sensitive (in addition to being sufficiently large in number) in order to provide effective care. As many urban CHCs serve large migrant and first-generation-American patients (for example, West Side in St. Paul serves a large Hispanic population, and CUHCC serves a large Somali population), staffing concerns for centers will extend beyond simply recruiting to 1) recruiting a diverse workforce (as well as a workforce fluent in languages other than English) that can serve a diverse set of clientele and 2) training all providers to provide treatment compatible with varying cultural practices and sensitivities.

Conclusion: Optimism Clouded by Uncertainty

Despite what conclusions we might glean from Massachusetts’ CHCs in the wake of Chapter 58, it is important to bear in mind that the effects of the ACA on Minnesota’s CHCs cannot be predicted with complete accuracy. There is tremendous uncertainty inherent in attempting to predict the movements and outcomes of a matter as unpredictable as health and in a body as collectively unpredictable as the residents of an entire state; the expansion of the scope of demand as coverage expands and the variability of management effectiveness as new funding flows to CHCs and Minnesota’s CHCs turn their attention to payment reform are chief among these factors. Still, we can discern from the outcome in Massachusetts that Minnesota’s CHCs – thanks in large part to a state government that is willing to

adopt policies compatible with the ACA's goal of expanding coverage – will be well-equipped to handle the expansion of care and access as the ACA sets in, especially given the presence of federal funding that was not available to Massachusetts' CHCs in the mid-2000s. The larger question for Minnesota could be 1) how CHCs can manage the expansion efficiently as payment reform looms, and 2) what will happen when that federal funding, which is finite under the ACA alone, runs out.

States looking to follow the path of Minnesota and Massachusetts in assuaging the burden on their safety net primary care providers created by the ACA would do well to adopt two policies. First, expand public coverage as much as possible, including accepting the voluntary ACA Medicaid expansion and, additionally, enacting state-level public coverage to cover more individuals between the Medicaid ceiling and private coverage or better packages on the exchange. Doing so will have the dual effect of increasing patient revenues for CHCs, thereby improving their capacity to provide and their financial solvency, and helping ease the effect of churning by catching more individuals whose volatile financial and (by extension) insurance situations might otherwise have them flipping between Medicaid and the exchange. Both should improve the efficiency of CHCs, which will be crucial under new payment models. Second, states should enact policies expanding the scope of care, allowing PAs and NPs more responsibilities earlier in their career and investing in the training and recruitment of community health workers; such an undertaking, however, must be accompanied by an effective method of measuring whether health outcomes suffer and (in turn) health care costs rise due to misdiagnoses, etc., by health professionals with less formal training than physicians.

This much is clear, in the meantime: CHCs, this very vulnerable but very important pillar of the health care system in each state, and in the US overall, are flourishing, in the scheme of things, because state and federal governments recognize and devote attention to them. What challenges CHCs face, at

least in states such as Massachusetts and Minnesota, should seem relatively manageable given that advantage.

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