By Randall D. Cebul, Thomas E. Love, Douglas Einstadter, Alice S. Petrulis, and John R. Corlett

# MetroHealth Care Plus: Effects Of A Prepared Safety Net On Quality Of Care In A Medicaid Expansion Population

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**ABSTRACT** **Studies of Medicaid expansion have produced conflicting results about whether the expansion is having a positive impact on health and the cost and efficiency of care delivery. To explore the issue further, we examined MetroHealth Care Plus, a Centers for Medicare and Medicaid Services (CMS) waiver program in Ohio composed of three safety-net organizations that enrolled 28,295 uninsured poor patients in closed-panel care during 2013. All participating organizations used electronic health records and patient-centered medical homes, publicly reported performance in a regional health improvement collaborative, and accepted a budget-neutral cap approved by CMS. We compared changes between 2012 and 2013 in achieving quality standards for diabetes and hypertension among 3,437 MetroHealth Care Plus enrollees to changes among 1,150 patients with the same conditions who remained uninsured in both years. Compared to continuously uninsured patients with diabetes, MetroHealth Care Plus enrollees with diabetes improved significantly more on composite standards of care and intermediate outcomes. Among enrollees with hypertension, blood pressure control improvements were insignificantly larger than those in the continuously uninsured group with hypertension. Across all 28,295 enrollees, 2013 total costs of care were 28.7 percent below the budget cap, providing cause for optimism that a prepared safety net can meet the challenges of Medicaid expansion.**

**Randall D. Cebul** (rdc@case.edu) is president of the Better Health Partnership, a professor in the Departments of Medicine and of Epidemiology and Biostatistics at Case Western Reserve University, and director of the Case Western Reserve University Center for Health Care Research and Policy at MetroHealth Medical Center, all in Cleveland, Ohio.

**Thomas E. Love** is data director of the Better Heath Partnership and a professor in the Departments of Medicine and of Epidemiology and Biostatistics at Case Western Reserve University and at the Case Western Reserve University Center for Health Care Research and Policy at MetroHealth Medical Center.

**Douglas Einstadter** is a professor in the Departments of Medicine and of Epidemiology and Biostatistics at Case Western Reserve University and at the Case Western Reserve University Center for Health Care Research and Policy at MetroHealth Medical Center.

**Alice S. Petrulis** is a professor in the Department of Medicine at Case Western Reserve University.

**John R. Corlett** was vice president for government relations and community affairs at the MetroHealth System when this research was conducted. He is now president and executive director of the Center for Community Solutions, in Cleveland.

As Medicaid expansion continues under Affordable Care Act (ACA) provisions, debate continues about its likely impact on health and on the cost and efficiency of care delivery. Fueling the debate are conflicting results from studies using various methods, including recent studies emphasizing coverage expansion.[1–3]

For example, in 2012 Benjamin Sommers and coauthors documented favorable changes in population-level access to care, self-reported health status, and all-cause mortality in three states where Medicaid coverage had expanded since 2000, compared to three contiguous states with no expansion.[1] And in 2013 Katherine Baicker and colleagues reported on Oregon's 2008 Medicaid expansion that enabled poor uninsured winners of a lottery to apply for Medicaid while lottery losers were left uninsured.[2] After two years, Oregon's newly insured Medicaid patients had no significant differences in physical health and no differences in self-reported use of emergency department (ED) services, compared to lottery losers. Follow-up administrative data from Portland-area hospitals documented 40 percent higher ED use—including "preventable" use—among patients in the expansion

group,[3] compared to the uninsured control group.

Before Ohio approved its ACA Medicaid expansion in October 2013, the state had received a waiver enabling safety-net organizations in its largest county—Cuyahoga—to provide closed-panel care coverage under a budget-neutral cap approved by the Centers for Medicare and Medicaid Services (CMS). In the MetroHealth Care Plus program, the county-owned MetroHealth System and two of the county's federally qualified health centers enrolled patients with family incomes at or below 133 percent of the federal poverty level.

The three organizations used the same electronic health record (EHR) system, which enabled them to exchange health information. All but two of the organizations' eighteen primary care practice sites had received recognition as level 3 patient-centered medical homes from the National Committee for Quality Assurance; had used nurses for care coordination; and participated in a regional health improvement collaborative, Better Health Partnership.

Better Health uses EHRs to measure and publicly report achievement on quality of care for chronic conditions, including diabetes and hypertension. This study used Better Health's data to compare changes in quality measures for these two conditions among established patients of the MetroHealth System who enrolled in MetroHealth Care Plus to changes among patients with the same conditions who remained uninsured.

## Study Data And Methods

### THE INTERVENTION: METROHEALTH CARE PLUS

▶ **WAIVER CONDITIONS:** In February 2013 CMS approved an Ohio Medicaid application for a waiver, which allowed the MetroHealth System to proceed with a coverage expansion program based in a safety-net institution.[4] Called MetroHealth Care Plus, the program provided coverage to uninsured adults ages 18–64 who had family incomes at or below 133 percent of poverty, met US citizenship or legal immigrant requirements, resided in Cuyahoga County, and were not otherwise eligible for Medicaid benefits.

MetroHealth Care Plus patients received benefits through a defined provider network that consisted of the county-owned MetroHealth System and community provider partners, including two federally qualified health centers and the region's community mental health centers. The waiver supported enrollment of up to 30,000 county residents under an allowed budget-neutral expenditure cap per member month approved by CMS.

▶ **COVERAGE BENEFITS:** The waiver allowed MetroHealth Care Plus to offer benefits for many services that were previously unavailable under the long-standing income-based rating methods used to determine health benefits and costs for uninsured county residents. Under the waiver program, no copayments were required for any service. These previously unavailable services included routine dental care, durable medical equipment, emergency and nonemergency medical transportation, short-term nursing facility services, home health services, selected additional substance abuse services, and services at the federally qualified health centers that were partners in the waiver program.

▶ **ACTUARIAL ANALYSES FOR RATE SETTING:** To prepare the waiver application, the MetroHealth System and Ohio Medicaid employed an independent actuarial firm to analyze utilization and cost data for the MetroHealth System's relevant uninsured population that were augmented by data from Medicaid. Per member month rates were estimated that accounted for utilization and unit costs for each service, including benefits for the new services described above and required out-of-network reimbursements; adjustments for services that may have been incurred but not reported; and projected trends with and without the waiver.

The actuarial methods were submitted by the state and accepted by CMS, and the associated per member month rates were modified to reflect an allowable federal budget-neutral cap on expenditures.[4] Using these methods, the expenditure cap was set at an average of $582.41 per enrollee per month. If, at the end of the demonstration period, the cumulative expenditure cap had been exceeded, excess federal funds would have been required to be returned to CMS.[4]

▶ **RECRUITMENT AND ENROLLMENT:** Marketing of the waiver program was undertaken through a variety of publicity and community outreach activities to inform relevant agencies and potentially eligible patient populations. In addition to publicity in the media to reach county residents, marketing materials were distributed to community groups and public organizations, and program representatives attended meetings to answer questions.

Two general methods of enrollment were employed, as called for in the terms and conditions that the State of Ohio imposed on MetroHealth Care Plus. The first method, applications by individuals at their own initiative, was facilitated by community agencies and the patients' health care providers. Uninsured patients who were hospitalized during the enrollment period and determined to be eligible for MetroHealth Care

Plus were invited to enroll. The second approach enabled MetroHealth Care Plus to automatically enroll patients who were determined to be eligible effective February 5, 2013, based on their current enrollment in the MetroHealth System's income-based rating program to determine health benefits for the poor.

New enrollees were given educational materials that covered a variety of topics. The materials informed enrollees how to maximize the use of their new medical and pharmaceutical benefit coverage, how to rely on primary care providers, how to present their new identification cards when seeking care, and how to adhere to providers' care instructions.

▶ **SITES AND CARE DELIVERY:** MetroHealth Care Plus enrollees accessed care coordination services through primary care–based patient-centered medical home sites within the MetroHealth System (which had twelve sites) or one of the two federally qualified health centers (which together had six sites). As noted above, all but two of the eighteen sites had received recognition as level 3 patient-centered medical homes from the National Committee for Quality Assurance before the waiver program commenced and used EHRs from the same vendor (EpicCare, in Verona, Wisconsin), which enables vendor-specific health information exchange (described elsewhere).[5]

Enrolled patients who had established relationships with primary care providers maintained them. Other patients were encouraged at enrollment to select a patient-centered medical home and primary care provider in the network. Because the demonstration provided support for nurse care coordinators, these caregivers were able to use the EHR system to contact patients, monitor them, and provide problem-centered care plans.

Twice yearly all care sites measured and publicly reported their adult patients' achievement on diabetes and hypertension standards as part of Better Health, one of sixteen collaboratives nationwide supported by the Robert Wood Johnson Foundation's Aligning Forces for Quality initiative.[6]

The MetroHealth System's 732-bed county-owned hospital, the region's principal safety-net provider, served as the preferred site for inpatient care and referral outpatient care for all MetroHealth Care Plus enrollees. Other area hospitals entered into out-of-network payment arrangements with MetroHealth Care Plus, including necessary ED services. The program's third-party administrator provided claims reports, daily enrollment file exchange with MetroHealth Care Plus, and communications with MetroHealth Care Plus's medical director (Alice Petrulis, one of the authors).

**STUDY GOALS AND PATIENT ELIGIBILITY** In our primary analyses, we examined changes in care and intermediate outcome measures among a subset of MetroHealth Care Plus enrollees with diabetes, hypertension, or both in 2013 who were uninsured and who were established patient-centered medical home patients who received care within the MetroHealth System during 2012. We used prespecified eligibility and quality criteria established by Better Health.[7]

Patients with diabetes were eligible for inclusion in our study population if they were ages 18–63 in 2012 and made at least two visits to the same practice in both 2012 and 2013.[8] Patients with hypertension (defined by *International Classification of Diseases*, Ninth Revision [ICD9], codes 401–405.9 on the EHR problem list) were eligible for inclusion in our study if they were ages 18–63 in 2012 and made at least two visits to the same practice over the two-year period, including at least one visit in each measurement year.[9] We compared 2012 to 2013 changes for MetroHealth Care Plus enrollees who met the diabetes and hypertension criteria to changes among continuously uninsured patients who met the same eligibility criteria but were not enrolled in the MetroHealth Care Plus program.

In secondary analyses, to detect potential declines in performance on quality measures that were not publicly reported by Better Health, we tested for analogous differences-in-changes (differences-in-differences) in the provision of vaccinations, cancer screening, and depression screening or monitoring. We also report 2013 total costs of care (a summary of all paid claims for services rendered during the program) compared to the CMS-approved budget-neutral cap.

**ENDPOINTS, MEASURES, AND DATA SOURCES** The primary study endpoints were quality of care and intermediate clinical outcomes for patients with documented diabetes, hypertension, or both, as required for Better Health public reporting.[7] All data were obtained from the EHR. As described elsewhere,[10] composite standards for diabetes care and clinical outcomes have been reported twice yearly since 2008.

The four measures in the diabetes care composite standard are checking the patient's hemoglobin A1c, monitoring or managing renal dysfunction using a urine microalbumin screen or prescribing an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB), performing a dilated eye examination, and administering a pneumococcal vaccination. Except for the vaccination, measured as "ever received," all measures pertain to the relevant twelve-month interval, which for this study was either 2012 or 2013.

**13+**

**Percentage points**

MetroHealth Care Plus patients with diabetes improved over 13 percentage points more on the diabetes composite standard than did members of the continuously uninsured group.

The diabetes care composite standard is reported as an "all or nothing" patient-level standard. In other words, each patient-centered medical home site receives credit for the percentage of its patients who met the criteria for all four of the measures in the relevant twelve-month period.[10]

The diabetes outcome composite standard is based on the following five measures: good Hb A1c control (<8 percent), good blood pressure control (<140/90 mmHg),[11,12] good control of low-density lipoprotein (LDL) cholesterol (<100 mg/dl or the prescription of a statin), good weight control (body mass index <30), and nonsmoking status. Successful achievement of the patient-level outcome composite standard requires that at least four of the five standards are met.[10]

For patients with hypertension, our all-or-nothing composite care standard consisted of checking blood pressure at every visit and annually measuring serum creatinine and LDL cholesterol.[9,13] As above, good blood pressure control was defined as less than 140/90 mmHg.[9]

To detect potential declines in performance on quality measures that were not publicly reported, possibly as a result of paying less attention to the nonreported standards than to the reported ones, we examined as secondary clinical endpoints the timely receipt of selected preventive services not included in Better Health's publicly reported care standards. These preventive services included providing a tetanus booster for patients ages 18–64 if they had not received one in the previous ten years, mammography for women ages 50–64 if they had not received a mammogram during the previous two years, a Pap test for women ages 21–64 if they had not received one within the previous three years, and colon cancer screening for people ages 50–64 if they had not completed a fecal occult blood test in the previous year or had sigmoidoscopy within the previous five years or a colonoscopy within the previous ten years.

In addition, in 2012 MetroHealth established a protocol for another preventive service: yearly screening for depression and monitoring via the Patient Health Questionnaire (PHQ)[14] for those with a depression diagnosis (ICD-9 codes 296.2–296.39, 300.4, or 311 on the EHR problem list).

Total costs of care of MetroHealth Care Plus enrollees were compared to the budget-neutral expenditure cap, since there were no cost data available among the continuously uninsured comparison group for their care at unaffiliated health care organizations. We used claims paid through MetroHealth Care Plus's third-party administrator to determine utilization rates per 1,000 enrollees per year for selected service categories and total costs of care for all patients across all sites for the period February 5–December 31, 2013.

Costs were summarized per member month across all enrollees and compared to the CMS-approved budget-neutral cap. We used the duration of each person's enrollment to calculate the number of member months at the patient level. Total per member month costs were calculated by dividing the sum of all member months by the total cost associated with adjudicated claims from the beginning of the waiver program through mid-2014.

**STATISTICAL ANALYSIS** Our difference-in-changes estimates[15] compared 2012-to-2013 changes for patients enrolled in MetroHealth Care Plus who met the diabetes and hypertension criteria to changes over the same period for those who were continuously uninsured. We accounted for random patient effects via linear mixed-effect models, which we fit using R, version 3.1.2. As an example, for the diabetes outcome composite standard, the change from 2012 to 2013 in MetroHealth Care Plus was 4.7 percentage points, while the same change in the continuously uninsured was −3.7 percentage points, making the difference-in-changes 8.4 percentage points. We used heteroskedasticity-consistent sandwich estimates of the variance-covariance matrix to formulate confidence intervals.[16,17]

The MetroHealth System's Human Privacy Board approved this investigation's data collection and submission protocols.

**LIMITATIONS** Several limitations of this investigation should be noted. The 3,437 eligible MetroHealth Care Plus enrollees in this study accounted for over 44 percent of all MetroHealth Care Plus enrollees with diabetes, hypertension, or both, but for only 12.1 percent of the total MetroHealth Care Plus enrollment of 28,295 patients (online Appendix Exhibits B and C).[18] Both MetroHealth Care Plus enrollees and the comparison group were adults with documented hypertension, diabetes, or both in both 2012 and 2013 and had sufficient continuity of primary care within the MetroHealth System to be eligible for Better Health's public reporting.[7,10] These patients had highly prevalent and important chronic conditions, which enabled us to identify similar patients who were continuously uninsured. However, our differences-in-changes should not be generalized to other MetroHealth Care Plus enrollees or patients who lack continuity of care.

Most patients in both study groups had established relationships with their primary providers. Our requirement for continuous primary care meant that patients in the study were more

likely to have better outcomes than those with fragmented care or poor access to care.[19–21] A recent investigation of the Oregon experiment documented poorer patient-reported outcomes among those who reported confusion about coverage or perceived barriers to access, and better outcomes among those who reported multiple health care interactions, continuity of care, and easier patient-provider interaction.[22]

In our preliminary examination of trends in use (Appendix Exhibit L),[18] we found that hospitalization rates per 1,000 enrollees per year were highest in the earliest months of the waiver. In contrast, utilization rates of other service categories reported here (the ED and outpatient and dental services) peaked during the second or third month. We believe that patterns of higher use of the ED and hospital in early months likely reflected voluntary enrollment of eligible patients at the time of their hospitalizations, previous unmet need, and lack of familiarity with the primary care–centered focus of MetroHealth Care Plus. The latter factor may have been especially relevant among people who were automatically enrolled based on their then-current enrollment in the MetroHealth System's income-based rating system for health benefits.

The declines in use of all reported service categories after March or April are encouraging. However, the fact that people were enrolled in MetroHealth Care Plus for only a short time (eleven months maximum, nine months median) limits the inferences that can be drawn from our results and their generalizability to similar programs elsewhere.

The favorable results of our cost-related analyses likewise are limited by the absence of analogous costs for the continuously uninsured. In addition, the magnitude of the CMS-approved expenditure cap in MetroHealth Care Plus was mostly a reflection of regional service experience among the uninsured and Ohio Medicaid patient populations. This limited our ability to make broad inferences about what savings are likely to accrue in Medicaid expansions for other populations.

Nonetheless, these data describe total costs of care across a large countywide waiver population, and those costs were 28.7 percent lower and more than $41 million less than allowable under the contract with CMS.

## Study Results

### ENROLLMENT AND BASELINE CHARACTERISTICS

Between February 5 and December 31, 2013, 28,295 uninsured adults enrolled in MetroHealth Care Plus. Over 75 percent (21,484) of these patients enrolled during the first four months of the program, and the median duration of enrollment was nine months, as noted above (Appendix Exhibit A shows the trajectory of enrollment).[18] Of the total, 9,205 (33 percent) were automatically enrolled based on their then-current enrollment in the MetroHealth System's income-based rating program, while 19,090 (67 percent) enrolled on their own initiative.

Altogether, there were 3,437 MetroHealth Care Plus patients who met diabetes, hypertension, or both criteria for inclusion in the study population (12.1 percent of the entire MetroHealth Care Plus enrollment population) and 1,150 continuously uninsured patients who received care within the MetroHealth System and who met Better Health's criteria for public reporting for diabetes, hypertension, or both during both 2012 and 2013 (Exhibit 1).

Patients in the MetroHealth Care Plus diabetes and hypertension subset represented 44.4 percent of all MetroHealth Care Plus patients with one or both of these conditions at the end of 2013 and were demographically similar to those who enrolled but did not meet Better Health's criteria for public reporting of diabetes, hypertension, or both (Appendix Exhibits B and C).[18]

At baseline, compared to the continuously un-

**EXHIBIT 1**

**Baseline Characteristics Of Patients In The MetroHealth Care Plus (MHCP) And Continuously Uninsured Study Groups**

| Characteristic | MHCP (*N* = 3,437) | Uninsured (*N* = 1,150) | Difference[a] |
|---|---|---|---|
| **SOCIODEMOGRAPHIC CHARACTERISTICS (ALL PATIENTS)** | | | |
| Mean age (years) | 50.9 | 52.2 | −1.4** |
| Female | 59.9% | 63.5% | −3.5** |
| Race | | | ** |
| White | 34.6% | 40.9% | −6.3 |
| African American | 56.9 | 45.9 | 11.0 |
| Other | 8.4 | 13.2 | −4.8 |
| Cleveland resident | 59.1% | 55.7% | 3.4** |
| Estimated median Income ($1,000s) | $36.0 | $37.9 | −$1.9** |
| Estimated high school graduates | 79.9% | 80.0% | −0.1 |
| **CLINICAL CHARACTERISTICS (ALL PATIENTS)** | | | |
| EHR-documented depression diagnosis | 29.9% | 26.3% | 3.6** |
| Good blood pressure control (<140/90 mmHg) | 55.8 | 58.8 | −3.0 |
| Body mass index <30 | 37.3 | 38.0 | −0.7 |
| Not smoking | 64.8 | 70.6 | −5.8** |
| **PREVENTIVE SERVICES RECEIVED (ELIGIBLE PATIENTS ONLY)** | | | |
| Tetanus shot | 91.7% | 91.6% | 0.1 |
| Mammography[b] | 79.1 | 75.7 | 3.5 |
| Colon cancer screening[b] | 71.2 | 67.8 | 3.4 |
| Pap test[b] | 76.0 | 75.0 | 1.0 |
| Body mass index check | 99.7 | 99.7 | 0.1 |

**SOURCE** Authors' analysis of data from Better Health Partnership and the MetroHealth System. **NOTES** Preventive services are described in more detail in the text. EHR is electronic health record. [a]Years, dollars, or percentage points. [b]Not all patients were eligible for this measure. **$p < 0.05$

insured, MetroHealth Care Plus patients in the study group had a number of features associated with lower achievement on quality standards, especially those requiring better adherence to medical recommendations or larger out-of-pocket expenses for health care services. In particular, MetroHealth Care Plus enrollees were more likely to be nonwhite (65.4 percent versus 59.1 percent), to live in the city of Cleveland (59.1 percent versus 55.7 percent) and in poorer neighborhoods (estimated median income $36,000 versus $37,900), to have an EHR-documented depression diagnosis (29.9 percent versus 26.3 percent), and to be a current smoker (35.2 percent versus 29.4 percent). In 2012 the two groups had similar rates of receipt of the preventive services in our study that were not publicly reported by Better Health.

Appendix Exhibits D and E compare the clinical characteristics of the study groups by medical condition.[18] Of patients with diabetes, those in MetroHealth Care Plus were significantly less likely than those in the continuously uninsured group to achieve our composite diabetes outcome standard in 2012 (32.9 percent versus 40.1 percent). MetroHealth Care Plus enrollees were less likely than members of the continuously uninsured group to achieve eight of the nine individual diabetes standards. However, there were no significant differences between the groups on the individual outcome measures, care measures, or diabetes care composite standard.[18]

Among patients with hypertension, rates of good blood pressure control were similar in the two groups. Rates of individual quality care measures were all over 90 percent, and they were virtually identical in the two groups.[18]

**CHANGES IN MEASURES FOR DIABETES AND HYPERTENSION** MetroHealth Care Plus patients with diabetes improved over 13 percentage points (95% confidence interval: 4.3, 22.1) more on the composite standard for diabetes care than did members of the continuously uninsured group (Exhibit 2). The difference between the two groups in the change in the proportion of patients receiving dilated eye examinations was the largest contributor to the significant difference between them in the all-or-nothing composite standard.

Rates of pneumococcal vaccinations also improved significantly among MetroHealth Care Plus enrollees who met the diabetes criteria, but not significantly more than among the continuously uninsured (Exhibit 2). Both groups had high baseline rates of hemoglobin A1c testing and testing for or treatment of kidney dysfunction (microalbumin screen or prescription of an ACE inhibitor or an ARB), and there were no significant differences-in-changes between the groups (details are provided in Appendix Exhibits F–H).[18]

MetroHealth Care Plus patients with diabetes improved more on the composite diabetes outcome standard (difference-in-changes: 8.4 percentage points; 95% CI: 1.9, 14.9) than did the continuously uninsured comparison group (Exhibit 3). Significantly more MetroHealth Care Plus patients met the good blood pressure target than did patients who were continuously uninsured (difference-in-changes: 7.9 percentage points; 95% CI: 0.1, 15.7). There were no significant differences-in-changes between the two groups in the other standards.

MetroHealth Care Plus patients with hypertension showed significant improvement in rates of good blood pressure control during the waiver year. However, parallel improvements among the continuously uninsured made the difference-in-changes not significant (2.8 percentage points; 95% CI: -1.6, 7.1; Exhibit 4). In secondary analyses, we found that MetroHealth Care Plus patients with hypertension were more likely to have been prescribed at least one antihypertensive medication (difference-in-changes: 1.9 percentage points; 95% CI: 0.2, 3.5).

Both groups had a high rate of achievement of care standards for hypertension at baseline. Compared to continuously uninsured patients, MetroHealth Care Plus patients showed more

**EXHIBIT 2**

**Diabetes Care For Patients In The MetroHealth Care Plus (MHCP) And Continuously Uninsured Study Groups, 2012–13**

| Measure | 2012 | 2013 | Change over time[a] | Difference-in-changes[a] |
|---|---|---|---|---|
| Diabetes care composite | | | | |
| MHCP | 50.9% | 59.7% | 8.8** | 13.2** |
| Uninsured | 53.2 | 48.8 | −4.4 | |
| Hemoglobin A1c checked | | | | |
| MHCP | 99.1 | 99.7 | 0.6 | 0.3 |
| Uninsured | 99.7 | 100.0 | 0.3 | |
| Microalbumin screen or prescription of ACE inhibitor or ARB | | | | |
| MHCP | 97.4 | 98.4 | 1.0 | 0.0 |
| Uninsured | 98.3 | 99.3 | 1.0 | |
| Dilated eye examination | | | | |
| MHCP | 55.6 | 63.1 | 7.6** | 13.3** |
| Uninsured | 57.9 | 52.2 | −5.7 | |
| Pneumococcal vaccination | | | | |
| MHCP | 91.2 | 94.2 | 3.0** | 1.7 |
| Uninsured | 91.3 | 92.6 | 1.4 | |

**SOURCE** Authors' analysis of data from Better Health Partnership and the MetroHealth System. **NOTES** There were 963 patients in the MHCP group and 297 in the uninsured group. Difference-in-changes are the differences between the two groups' changes over time. The diabetes composite measure consists of the four other measures, described in more detail in the text. Compliance with the composite measure is defined as compliance with all four of the measures. ACE is angiotensin-converting enzyme. ARB is angiotensin receptor blocker. [a]Percentage points. **$p < 0.05$

improvement in having checks of serum creatinine to test kidney function (difference-in-changes: 0.8 percentage point; 95% CI: 0.2, 1.3). There were no significant differences between the groups on the other measures (Appendix Exhibits H and I).[18]

**CHANGES IN SECONDARY CLINICAL MEASURES** We found no significant differences-in-changes between the two groups in rates of appropriate immunizations for tetanus and screenings for breast, colorectal, and cervical cancer (Appendix Exhibits J and K).[18] By contrast, MetroHealth Care Plus enrollees showed higher rates of screening or monitoring for depression using the PHQ, compared to the uninsured group (difference-in-changes: 4.9 percentage points; 95% CI: 1.6, 8.2). However, both groups showed large increases from 2012 to 2013.

**USE AND TOTAL COSTS OF CARE** Appendix Exhibit L summarizes trends in use of selected categories of service in rates per 1,000 enrollees per year.[18] Hospitalization rates declined from 62.8 per 1,000 enrollees per year in February to 44.4 in December. Use of other services (including outpatient and dental services and ED use) increased during the first few months before leveling off or declining thereafter.

Total costs of care for MetroHealth Care Plus enrollees were compared to the CMS-approved budget-neutral cap on a per member-month basis. There were 250,514 eligible member-months among the 28,295 MetroHealth Care Plus enrollees during the waiver program. As of June 2014—when sufficient time had elapsed for submission and adjudication of claims for 2013 services—total per member-month costs for MetroHealth Care Plus patients averaged $415.05, or $167.36 (28.7 percent) lower than the $582.41 budget-neutral cap.

The CMS-allowed expenditure cap for all eligible enrollees was $145 million. Actual expenditures for services provided were $104 million, or approximately $41 million lower than what CMS had allowed.[4]

**EXHIBIT 3**

**Outcomes For Patients With Diabetes In The MetroHealth Care Plus (MHCP) And Continuously Uninsured Study Groups, 2012–13**

| Outcome | 2012 | 2013 | Change over time[a] | Difference-in-changes[a] |
|---|---|---|---|---|
| Diabetes outcomes composite measure | | | | |
| MHCP | 32.9% | 37.6% | 4.7** | 8.4** |
| Uninsured | 40.1 | 36.4 | | |
| Hemoglobin A1c <8% | | | | |
| MHCP | 61.2 | 61.2 | 0.0 | 2.4 |
| Uninsured | 63.0 | 60.6 | −2.4 | |
| Good blood pressure control (<140/90 mmHg) | | | | |
| MHCP | 58.4 | 63.2 | 4.9** | 7.9** |
| Uninsured | 64.7 | 61.6 | −3.0 | |
| LDL <100 mg/dl or statin prescription | | | | |
| MHCP | 85.5 | 88.7 | 3.2 | −0.8 |
| Uninsured | 84.9 | 88.9 | 4.0 | |
| Body mass index <30 | | | | |
| MHCP | 29.6 | 30.6 | 1.0 | 1.4 |
| Uninsured | 34.0 | 33.7 | −0.3 | |
| Documented as not smoking | | | | |
| MHCP | 69.3 | 71.0 | 1.8 | 0.8 |
| Uninsured | 74.4 | 75.4 | 1.0 | |

**SOURCE** Authors' analysis of data from Better Health Partnership and the MetroHealth System. **NOTES** There were 963 patients in the MHCP group and 297 in the uninsured group. Difference-in-changes are the differences between the two groups' changes over time. The diabetes outcomes composite measure consists of the five outcomes below it. Achieving the composite outcome is defined as achieving at least four of the five included outcomes. LDL is low-density lipoprotein cholesterol. [a]Percentage points. **$p < 0.05$

## Discussion

The Oregon experiment[3] has generated considerable debate about Medicaid expansion among policy makers and in the popular press.[23–25] Both it and the MetroHealth Care Plus waiver were intended to provide estimates of the impact of expanding health coverage on measures of physical health. However, the designs and results of the two interventions differed substantially.

The MetroHealth Care Plus intervention focused on contemporary delivery system innovations among safety-net organizations that accepted closed-panel care and a federally imposed expenditure cap. All of the care sites in the MetroHealth Care Plus program participated in Better Health, an EHR-catalyzed regional health improvement collaborative that publicly reported performance. This helped accelerate the development of relevant infrastructure for quality improvement and provided the patient-level data needed to examine changes in quality across both newly covered and continuously uninsured patients.

By contrast, the Oregon experiment almost exclusively focused on coverage expansion, with little attention paid to care delivery models, providers' interest in patient enrollment, or the providers' experience with improving care quality.[3] MetroHealth Care Plus enrollment was driven by safety-net organizations eager to reduce barriers to the delivery of high-quality care and was brisk, which resulted in a rapid reduction in the region's uninsured population.[26] In contrast, participation in the Oregon experiment was limited, and people were slow to enroll.[27]

Despite having adverse baseline characteristics compared to the continuously uninsured[28] and only nine months' average enrollment, MetroHealth Care Plus enrollees had significantly better improvements in diabetes care and outcomes than the improvements in the continu-

**EXHIBIT 4**

**Care For Patients With High Blood Pressure In The MetroHealth Care Plus (MHCP) And Continuously Uninsured Study Groups, 2012–13**

| Measure | 2012 | 2013 | Change over time[a] | Difference-in-changes[a] |
|---|---|---|---|---|
| Good blood pressure (<140/90 mmHg) | | | | |
| MHCP | 54.5% | 58.4% | 3.9** | 2.8 |
| Uninsured | 57.6 | 58.7 | 1.1 | |
| High blood pressure care composite measure | | | | |
| MHCP | 94.1 | 95.9 | 1.8** | 0.6 |
| Uninsured | 94.6 | 95.9 | 1.2 | |
| Blood pressure check | | | | |
| MHCP | 100 | 100 | 0.0 | 0.0 |
| Uninsured | 100 | 100 | 0.0 | |
| Serum creatinine check | | | | |
| MHCP | 99.1 | 99.9 | 0.8** | 0.8** |
| Uninsured | 99.5 | 99.5 | 0.0 | |
| LDL cholesterol check | | | | |
| MHCP | 94.4 | 96.0 | 1.6** | 0.4 |
| Uninsured | 94.8 | 96.1 | 1.2 | |
| Prescription of antihypertensive medication[b] | | | | |
| MHCP | 94.3 | 94.9 | 0.5 | 1.9** |
| Uninsured | 94.2 | 92.9 | −1.3 | |

**SOURCE** Authors' analysis of data from Better Health Partnership and the MetroHealth System. **NOTES** There were 3,185 patients in the MHCP group and 1,063 patients in the uninsured group. Difference-in-changes are the differences between the two groups' changes over time. The high blood pressure care composite measure consists of checks of blood pressure, serum creatinine, and LDL cholesterol. Compliance with the composite measure is defined as compliance with all three standards. LDL is low-density lipoprotein cholesterol. [a]Percentage points. [b]Antihypertensive medications include angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, diuretics, calcium channel blockers, beta-blockers, alpha-1 blockers, centrally acting alpha-2 agonists, and vasodilators. **$p < 0.05$

ously uninsured group. Changes in care were dominated by improvements in dilated eye examinations, with lesser improvements in care standards that showed high levels of achievement (over 90 percent) at baseline for both study groups (Exhibit 2). This ceiling effect reduced our statistical power to observe meaningful differences-in-changes.

We speculate that MetroHealth Care Plus's coverage and its policy of having no copays may have convinced some patients to have a recommended dilated eye examination who might not have had one if they had remained uninsured. Furthermore, Better Health's public reports and educational sessions focused attention on the importance and use of EHR-based tools to identify the need for and facilitate the completion of the examinations, making them a logical target for improvement.

Compared to people in the continuously uninsured group, MetroHealth Care Plus enrollees improved more on the diabetes outcome composite measure, as a result of greater improvement in rates of good blood pressure control. Similar to results from the Oregon experiment, our study found virtually no differences-in-changes between the study groups for other important measures, including glycemic and lipid control and rates of obesity and tobacco use. We speculate that these negative findings are a function of both the short duration of the waiver program and the difficulty in controlling outcomes that are adversely influenced by social and behavioral determinants, especially those related to poverty.

Among MetroHealth Care Plus patients with hypertension, changes in the rate of good blood pressure control were favorable but not significantly better than changes among the comparison group (Exhibit 4). Absolute rates of good blood pressure control were comparable to national averages for enrollees in Medicaid managed care plans, as reported by National Committee for Quality Assurance,[29] and were better than the national average in 2013 (Appendix Exhibit M).[18]

These favorable results were associated with a significantly higher rate of receiving prescriptions for antihypertensive medications among MetroHealth Care Plus patients as well as higher rates of routine monitoring for renal dysfunction, compared to patients in the continuously uninsured group. Ceiling effects again reduced our power, since more than 90 percent of the members of both groups had obtained baseline blood pressure and LDL cholesterol measurements (Appendix Exhibits E and I).[18]

Our secondary analyses demonstrated significantly larger improvements in screening for or monitoring of depression among MetroHealth Care Plus enrollees who met the diabetes and hypertension criteria than among the continuously uninsured (Appendix Exhibit K).[18] The larger increase in testing for depression among MetroHealth Care Plus patients might have been related to increased acceptance of addressing mental health issues after gaining coverage, not unlike the increase in depression diagnosis among new Medicaid beneficiaries in Oregon.[3]

By contrast, we found no significant differences-in-changes between the two study groups in rates of other screening tests and tetanus vaccination. Since we examined changes in these services to determine whether selective inattention to appropriate preventive care might have declined among MetroHealth Care Plus enrollees because these standards were not publicly reported, these results are encouraging. Furthermore, higher rates of both groups at baseline met screening targets than rates reported for insured populations by the National Committee for Quality Assurance.[29] Both groups' rates of tetanus vaccination at baseline were much higher than nationwide results reported by the Centers for Disease Control and Prevention.[30]

## Conclusion

We believe that the safety-net systems in this waiver program benefited from several aspects of their infrastructure (for example, patient-centered medical homes and sophisticated EHR use) and features of the program (for example, closed-panel care and health information exchange). MetroHealth Care Plus's acceptance of financial risk if the expenditure cap was exceeded also may have motivated providers to avoid unnecessary costs. Participation in a regional health improvement collaborative further prepared these safety-net systems for clinical practice transformation, accountable care, and payment reform.

These attributes of a "prepared safety net" are increasingly prevalent nationwide and deserve greater attention by state Medicaid agencies and policy makers at the federal, state, and local levels. Furthermore, despite multiple financial threats, successful safety-net organizations with these traits have been described by others.[31–35]

The one-sided financial risk in MetroHealth Care Plus contrasts with parallel positive financial incentives for better care and shared savings being tested elsewhere.[32,36,37] Regional health improvement collaboratives such as Better Health provide well-tested models in regions covering almost 40 percent of the US population.[38] The advent of these new models provides cause for optimism that the favorable results described here may underestimate the results that are possible, especially in settings with a prepared safety net and financial forces that are better aligned for better care, better health outcomes, and lower per capita costs.[39] ■

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### NOTES


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18 To access the Appendix, click on the Appendix link in the box to the right of the article online.

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## Errata

**WOODRUFF ET AL., 2015-0809, P. 1272** The position title for Donna Shalala should be "president of the Clinton Foundation," not "president and CEO of the Clinton Foundation." The article has been corrected online.

**CEBUL ET AL., 2014-1380, P. 1123** The "factoid" on page 1123 contained an error. The phrase "continuously insured" should be "continuously uninsured." The article has been corrected online.

**FAIRCHILD ET AL., 2014-1236, P. 849** In the paragraph beginning "As we have noted," the sentence beginning "All of the decrease," the city's smoking rates ticked back up in 2010, not in 2014. The article has been corrected online.

**BORGHI ET AL., 2014-0608, P. 413** The acknowledgment section of this article has been revised to include acknowledgment text for one of the authors. This added text reads as follows: "Josephine Borghi is a member of the Consortium for Resilient and Responsive Health Systems (RESYST), funded by UK aid from the UK Department for International Development (DFID), and the online publication of this article was funded by RESYST/DFID. However, the views expressed and information contained in it are not necessarily those of or endorsed by the government of Norway or DFID, which can accept no responsibility for such views or information or for any reliance placed on them." The article has been corrected online.