Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

A Multiple Case Study Report of Arkansas, Iowa and New York City

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Acronyms

The following is a list of acronyms used in this report:

ACA – Affordable Care Act
ACOs – Accountable Care Organizations
ASTHO – Association of State and Territorial Health Officials
CDC – Centers for Disease Control and Prevention
HANES – Health and Nutrition Examination Survey
HEDIS – Healthcare Effectiveness Data and Information Set
HITArkansas – Health Information Technology Regional Extension Center in Arkansas
IOM – Institute of Medicine
NACCHO – National Association of County and City Health Officials
NASHP – National Academy for State Health Policy
NYC DOHMH – New York City Department of Health and Mental Hygiene
NYC REACH – New York City’s Regional Extension Center
PCIP – Primary Care Information Project at the New York City Department of Health and Mental Hygiene
PCMH – Patient Centered Medical Home
PHAs – Public Health Agencies
PHII – Public Health Informatics Institute
SIM – State Innovation Model
Table of Contents

Acronyms .................................................................................................................. 4

Executive Summary .................................................................................................. 7
Introduction ................................................................................................................. 7
Approach and Methods ............................................................................................... 7
Summary of Findings .................................................................................................... 7
Implications .................................................................................................................. 9

Background .................................................................................................................. 9
Potential Benefits of Collaboration for ACOs ............................................................... 9
Potential Benefits of Collaboration for PHAs ............................................................. 10
Challenges and Questions .......................................................................................... 10
Strategies for Working Together ................................................................................. 11

Project Approach and Methodology ......................................................................... 11
Philosophy and Approach .......................................................................................... 11
Research Questions ...................................................................................................... 12
Site Selection for Case Studies .................................................................................... 13
Case Study Site Sources .............................................................................................. 14
Accountable Care Organizations per Site .................................................................... 15
Data Collection Approach .......................................................................................... 16
Cross-case Comparisons ............................................................................................. 16
Narrative Construction ................................................................................................ 16
Limitations .................................................................................................................... 17

Case Study Findings .................................................................................................... 17
Arkansas ....................................................................................................................... 17
Arkansas – Public Health ............................................................................................. 18
    Agency goals related to health improvements for chronic disease ......................... 18
    Data capture and measurement .............................................................................. 18
Arkansas – Accountable Care Organizations ............................................................... 19
    Agency goals related to health improvements for chronic disease ......................... 19
    Data capture and measurement .............................................................................. 20
Collaboration between Public Health Agencies and Accountable Care Organizations .............................................................................................................. 21
Summary ...................................................................................................................... 22

Iowa ............................................................................................................................ 22
Iowa – Public Health ................................................................................................... 23
    Agency goals related to health improvements for chronic disease ......................... 23
    Data capture and measurement .............................................................................. 23
Iowa – Accountable Care Organizations .................................................................... 24
    Agency goals related to health improvements for chronic disease ......................... 24
    Data capture and measurement .............................................................................. 25
Collaboration between Public Health Agencies and Accountable Care Organizations .............................................................................................................. 26
Summary ...................................................................................................................... 28
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City – Public Health</td>
<td>28</td>
</tr>
<tr>
<td>Agency goals related to health improvements for chronic disease</td>
<td>29</td>
</tr>
<tr>
<td>Data capture and measurement</td>
<td>30</td>
</tr>
<tr>
<td>New York City – Accountable Care Organizations</td>
<td>31</td>
</tr>
<tr>
<td>Agency goals related to health improvements for chronic disease</td>
<td>31</td>
</tr>
<tr>
<td>Data capture and measurement</td>
<td>31</td>
</tr>
<tr>
<td>Collaboration between Public Health Agencies and Accountable Care Organisations</td>
<td>32</td>
</tr>
<tr>
<td>Summary</td>
<td>35</td>
</tr>
<tr>
<td>Cross-cutting Themes</td>
<td>35</td>
</tr>
<tr>
<td>Our Assumptions and Common Themes</td>
<td>36</td>
</tr>
<tr>
<td>Implications</td>
<td>38</td>
</tr>
<tr>
<td>Policy/Leadership</td>
<td>38</td>
</tr>
<tr>
<td>Technology and Interoperability</td>
<td>38</td>
</tr>
<tr>
<td>Funding</td>
<td>39</td>
</tr>
<tr>
<td>Strategic Communications for Public Health</td>
<td>39</td>
</tr>
<tr>
<td>Conclusion</td>
<td>39</td>
</tr>
<tr>
<td>Appendix A: PHA and ACO Interview Telephone Guide</td>
<td>41</td>
</tr>
<tr>
<td>PHA and ACO Interview Telephone Guide</td>
<td>41</td>
</tr>
<tr>
<td>Appendix B: Public Health Partner Organizations Interview Questions</td>
<td>44</td>
</tr>
<tr>
<td>Endnotes</td>
<td>45</td>
</tr>
</tbody>
</table>
Executive Summary

Introduction
Over 500 accountable care organizations (ACOs) have emerged across the country. The numbers of ACOs are growing, and health care reform activities and financial incentives continue to evolve. Assuming pricing and cost transparency pressures on the health care delivery sector continue, public health agencies (PHAs) need to define how they add value to health care organizations seeking to improve population health. This project sought to characterize the overlapping objectives of PHAs and ACOs in relation to improving population health outcomes. This project focused on data integration and sharing as essential components of maintaining effective population health strategies. This project also sought to identify the potential synergistic roles between PHAs and ACOs that would streamline and improve their data collection efforts and enable data-driven decision making to improve health outcomes.

Approach and Methods
Funded by the de Beaumont Foundation, the Public Health Informatics Institute selected a convenience sample consisting of three sites: Arkansas State, Iowa State, and New York City. To select sites, we reviewed the state ACOs with documented synergies with PHAs, chronic disease-related activities, and an indication of informatics initiatives. We also looked at state and local partners engaged with the Million Hearts program, an initiative to prevent heart attacks and strokes. Based on these criteria, we selected Arkansas and Iowa to obtain state-level perspectives and New York City for a city-level perspective. We conducted one, multi-session face-to-face site visit in New York City, as well as eight semi-structured telephone interviews across the other two case sites with a total of 30 expert stakeholders engaged in public health, as well as clinical health. We also captured information at an in-person Chronic Disease Surveillance Workgroup Meeting in 2014, and in semi-structured telephone interviews with a total of three different public health partner organizations.

The purpose of these interviews was to understand the overlapping goals of PHAs and ACOs in meeting the needs of and in improving health outcomes of their constituents. With this information, we aimed to identify the potential synergistic roles between PHAs and ACOs for exchanging data in order to streamline and improve data collection efforts, and in being ready for bringing about improved health outcomes. Additionally, we aimed to identify how PHAs will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative by receiving chronic disease data from ACOs, and how ACOs will be better prepared and more efficient in treating their constituents by receiving chronic disease data from PHAs.

To assist with this purpose, we used the Millions Hearts initiative as a national spotlight exemplifying how clinical and public health communities are working together toward a common goal. This program promotes coordinated clinical practices and community interventions for heart disease and stroke prevention through quality measures incorporated in the Medicare Shared Savings Program, coverage of preventative services, and community-transformation grants. Million Hearts includes multiple public and private partners, including the Centers for Disease Control and Prevention (CDC), Centers for Medicare and Medicaid Services, and the American Heart Association. We focused the interviews on PHAs engaged in efforts related to chronic disease programs such as the Million Hearts initiative; and ACOs engaged in efforts related to chronic disease treatment and follow-up care.

Summary of Findings
This project investigated the ways in which PHAs and ACOs partnering with each other would result in increased access to data; that each entity would contribute in meaningful ways to the partnership; that
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

each agency would improve learning about their patient populations; and financial advantages may be realized for both. Understanding that insurance reforms, sparked by the Affordable Care Act (ACA), are just beginning to spur ACO arrangements, this study sought to identify benefits that lead to improved health outcomes. The case studies demonstrated some support of these claims, with varying levels of data exchange, shared leadership, improved learning, and financial benefits.

In our state studies—Arkansas and Iowa—dialogue was just beginning and roles were yet to be identified. However, each state provided examples of current collaborations and emerging work that are promising to make a positive future impact. For example, in Arkansas, health data is made accessible by the health department to empower community members to take charge of health outcomes and risks; the health department and ACO community are working together on chronic disease clinical data to empower better decision making; and the state ACO is being proactive with setting public health goals and improving interaction within private industry.

In Iowa, the state health department is engaged in initiatives that indicate compliance of the clinical systems with ACA reporting measures related to hypertension and diabetes; track age-appropriate colorectal cancer screenings for the Regional Community Health Centers populations; and engage with the health care community to compare screening rates for the overall population and not just the underinsured population. Medicaid in Iowa is partnering with the health department to provide technical assistance to ACOs and to community providers to achieve the goals of improving population health and will work with the health department to track and follow the status of Medicaid patients within the Iowa Health and Wellness Program.

In the case of New York City, roles were well-established and entities were working well together. A few of the many partnership examples include:

- NYC’s Bureau of Chronic Disease Prevention and Tobacco Control worked with providers to include information in EHRs to ensure smoking status is addressed and updated when patients are discharged; providers were also trained in counseling smoking cessation, in addition to coding and billing properly for these services.

- The New York State Medicaid Managed Care Organization has partnered with the Primary Care Information Project (PCIP), a program in the New York City Department of Health and Mental Hygiene (NYC DOHMH). These providers receive on-site support and a monthly “dashboard” of their performance on targeted clinical quality measures (such as blood pressure rates). Results include achievement of immediate improvement in process measures and improved documentation related to clinical quality measures.

- NYC DOHMH’s eHearts incentive program rewarded EHR-enabled practices for achieving excellent heart health in patients. eHearts used EHR-generated clinical quality outcomes and was designed to reduce health disparities.

However, even for this health department, issues such as reorganizations, shifting priorities, and lack of funding threatened to have a negative impact on the collaborative efforts with ACOs.

Also, at the beginning of this project, it was proposed that PHAs and ACOs faced many challenges to partnering, such as commonly defining key terms like “population health,” finding ways to work well together, and role definition in the partnership. Our overall finding from the three cases was that the medical communities and the ACOs already demonstrated a broad grasp of population health as they are responsible for such large percentage of their jurisdictions’ population. Universally, across all the sites, the need was expressed for PHAs and ACOs to work together.
Implications

One of the ACO interviewees stated that working together rather than around each other represents the best way forward. Additionally, we discovered a number of implications related to policy/leadership, technology and interoperability, funding, and communications. Each of the three sites was selected because the literature indicated a strong collaborative nature between their PHAs and the ACOs. Strong leadership and supportive policies provided the foundation on which these collaborations were built. Having a common technology platform and a commitment to share information led to an improvement in access to and analysis of data. In our interviews, funding was cited as a fundamental requirement for improved collaborations between PHAs and ACOs. Without funding, long-term commitments to evaluation could not be made, and the potential decrease in funding threatened to diminish the ability to engage in technical assistance. Finally, for public health and clinical care collaborations to succeed, both the ACOs and public health partner organizations agree that PHAs must invest time in getting to know the ACOs and the patient populations they serve.

Background

“We continually emphasized that the health status of our community was the responsibility of many sectors—businesses, religious institutions, community organizations, school systems, and public health agencies as well as individuals. We focused attention on successful ventures, always recognizing the success of others. We saw each encounter with a group or an individual as a recruitment opportunity for promoting public health.” Dr. Paul J. Wiesner, reflecting on his experience in public health leadership.¹

No single entity alone can succeed in transforming the health of a population. Community health involves many sectors, and as accountable care organizations (ACOs) evolve, their role in improving population health is becoming stronger. ACOs include groups of doctors, hospitals, and other health care providers, who provide coordinated high quality care to their patient populations. ACOs’ mission of ensuring that patients, especially those who are chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors, are in alignment with public health’s 10 essential public health services.²

Because of the similar missions to improve community health, we hypothesized that collaborations between PHAs and ACOs could be beneficial to both. This background section highlights potential benefits and challenges for both entities. The following information includes findings from our literature review and interviews with public health organizations.

Potential Benefits of Collaboration for ACOs

The collaboration between PHAs and ACOs has the potential to provide benefits for each entity, as well as improve health outcomes³. In the case of population care, ACOs will be able to increase the range of services they offer their patient population as they work with PHAs. PHAs “provide a range of services to the population, including population-based primary prevention services, support for minority health initiatives, support for primary care providers, oral health, pharmacy, disease screening, and home health care services⁴.” By PHAs working with ACOs to decrease duplication of these services between the two entities, ACOs will then be able to increase the range of services they offer in order to better prevent

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¹ Paul J. Wiesner, “Public Health Leadership in DeKalb County,” Public Health Leadership Case Study, last updated April 20, 2004 (epowell), http://www.uic.edu/sph/prepare/courses/ph450/resources/dekalb.html (accessed 9/1/11). Paul J. Wiesner, MD, is currently a Clinical Associate Professor in the Department of Health Services at the University of Washington’s School of Public Health.
illness and provide holistic care to their patient populations. In addition, PHAs have experience in integrating health promotion and prevention into their programs. This experience can contribute to better integration of health promotion and prevention within the clinical health care delivery system as well.

ACOs may also benefit from technical assistance provided by PHAs regarding the collection of population health data and the monitoring of population health status. With this information, ACOs may better track and monitor the health status of their patients to meet their quality and savings goals. The National Association of County and City Health Officials (NACCHO) suggests that PHAs may also provide ACOs with support as ACOs strive to meet the requirements to complete community health assessments and to manage their quality indicators.

Potential Benefits of Collaboration for PHAs

By partnering with ACOs, PHAs will have access to data previously not accessible to public health. For example, health care resources have access to data from employers, payors, and clinical providers. By preparing to receive this data and ensuring the appropriate resources are available to mine and translate this data, PHAs will be well-positioned to contribute to improved health outcomes. By actively participating in ACO-led initiatives, PHAs can provide leadership and valuable public health content and expertise. At the same time, PHAs will be able to learn a great deal from the ACOs in relation to the specific needs of their patient population.

PHAs may also benefit financially. If more state funds are available due to decreased Medicaid spending by the ACOs, these additional funds could be allocated to initiatives aimed at improving population health. With current budget concerns for both PHAs and ACOs, PHAs will need to be prepared to demonstrate their “value-add” to the ACO community, while also engaging in meaningful discussions about funding allocations.

Challenges and Questions

In addition to the benefits being delineated in our literature review, we found many challenges and questions to address regarding the intersection between PHAs and ACOs. As described, opportunities for PHAs and ACOs to work together include collaborative efforts pertaining to community needs assessments, performance evaluations, and the reporting of quality performance measures. However, one example of an outstanding question is how to arrive at a common definition of “population health.” PHAs tend to define population health broadly—encompassing their city, their county, their state, their territory, their region, and even the entire globe. ACOs usually define population health based on patients that meet eligibility criteria for service by their organization. For many ACOs, their eligible patient population may indeed include a majority of residents in their locale or state. As ACOs engage in activities to better understand all the contributing factors impacting patients enrolled in their care, PHAs may be engaged to provide information on the broader community.

In addition to differing views of “population health,” public health and health care traditionally do not have a strong history of working together. The Institute of Medicine (IOM) states, “Despite their shared goal of promoting people’s health, primary care providers and public health professionals have largely worked separately, which can result in missed opportunities to take advantage of the strengths of both fields.”

Along with these challenges, the questions for PHAs, particularly local health departments, is the part they might play in the ACO space. Will they participate in a service delivery network, or will they have roles in sharing and analyzing population health data and help make collective decisions about population health priorities in their area? Each of these roles has important information challenges associated with them. Exploring these issues will contribute to assisting public health agencies develop strategies for...
Strategies for Working Together

Strategies and guidelines are needed for partnerships between ACOs and PHAs to be successful. The IOM report, *Improving Health in the Community*, presented a method for multiple stakeholders in a community coming together to “share accountability” for population health outcomes. The Association of State and Territorial Health Officials (ASTHO) also recommends that ACOs examine the overlap between their panel and the community in which this practice-based population resides in order to best compare the health of the population they are serving with that of the rest of the community. A broader overlap between the ACO panel and the geographic community where the patients reside would indicate a prioritized need for collaboration with PHAs in the area. ASTHO recommends that health departments conduct joint needs assessments with ACOs and work together on the selection of health outcomes and population health indicators for use in prioritizing engagement. Formal agreements are needed between ACOs and PHAs related to sharing data, in order to monitor progress towards goals in both the clinical and community settings. ACOs and PHAs should also engage in funding discussions to examine the opportunities for fees to be secured in order to support community-related activities.

As stated by the IOM, history has shown that integrating health care and public health is not easy. Yet today, a number of new initiatives provide an unprecedented opportunity to refocus these efforts. Over 500 ACOs have emerged across the country and the number of ACOs is sure to grow as health care reform activities evolve. Many collaborative relationships between PHAs and ACOs across the country are still in the formative stages. At this early stage, we need more evidence of how these two sectors can work together. The desire to learn how PHAs and ACOs are developing these partnerships and specifically, how they are exchanging information effectively, has led to the formation of this study. The case studies documented in this report highlight burgeoning partnerships between ACOs and PHAs. The case studies examine how PHAs and ACOs are working together in order to provide a guide for other agencies.

Project Approach and Methodology

Philosophy and Approach

This project examines the connection between health departments and ACOs as being beneficial to the public health community. As collaborative models for PHAs and ACOs working together had been proposed, we sought to examine and evaluate the best practices and lessons learned for these collaborations. Together with the project’s funder, the de Beaumont Foundation, we felt case studies would best show these collaborations in action; or the potential for collaboration and the potential challenges that emerged during the collaborative process. Ultimately, we

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2 As we conducted early research via ASTHO, NACCHO, IOM, and articles in the *New England Journal of Medicine* and *American Journal of Public Health*, we found research that already addressed proposed models.
wanted to create a document for use by health departments that would help them be a valued member in the “new” world of ACOs.

**Research Questions**

The purpose of the interviews was to help us better understand the overlapping missions, goals, and objectives of PHAs and ACOs related to meeting the needs of and in improving health outcomes. We also sought to specifically examine how sharing data and information impacted these partnerships. We aimed to identify the potential synergistic roles between PHAs and ACOs for exchanging data in order to streamline and improve their data collection efforts, and in being well-poised for bringing about improved health outcomes. Additionally, we aimed to identify how PHAs will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative by receiving chronic disease data from ACOs, and how ACOs will be better prepared to and more efficient in treating their constituents by receiving chronic disease data from PHAs.

Our project objectives included the following: 1) identify the potential synergistic roles between PHAs and ACOs for exchanging data in order to streamline and improve their data collection efforts, and in being well-poised for bringing about improved health outcomes; 2) identify how public health will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative, by receiving chronic disease data from ACOs; and 3) identify how ACOs will be better-prepared and more efficient in treating their constituents by receiving chronic disease data from PHAs.

We sought to understand and identify these roles by gathering information related to the following, the extent to which:

1. PHAs and ACOs will streamline and improve their data collection efforts by exchanging data;
2. PHAs and ACOs will be well-poised for bringing about improved health outcomes by exchanging data;
3. PHAs will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative by receiving chronic disease data from ACOs; and
4. ACOs will be better prepared and more efficient in treating their constituents by receiving chronic disease data from PHAs.

Our assumptions were as follows:

1. PHAs and ACOs have overlapping goals related to meeting the needs of and in improving health outcomes of their constituents.
2. PHAs and ACOs have overlapping constituents.
3. Specified PHAs have committed to engaging in efforts related to chronic disease programs such as the Million Hearts initiative.
4. Specified ACOs have committed to engaging in efforts related to chronic disease treatment and follow-up care.

The hypotheses to be examined were:

1. In cases where PHAs and ACOs exchange data, PHAs and ACOs respectively perceive data collection efforts as streamlined and data quality is improved.
2. In cases where PHAs and ACOs exchange data, PHAs and ACOs respectively are well-poised for bringing about improved health outcomes.
3. By receiving chronic disease data from ACOs, PHAs agencies feel they are better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative.
4. By receiving chronic disease data from PHAs, ACOs feel they will be better prepared and more efficient in treating their constituents.

Site Selection for Case Studies
Sites were selected from the National Academy for State Health Policy (NASHP) ACO database. With the support of The Commonwealth Fund, NASHP tracks state efforts to lead or participate in accountable care models that include Medicaid and Children’s Health Insurance Program populations. Accountable care models aim to address lack of care coordination and wide disparities in cost and quality of care in the U.S. health care system, perpetuated by the prevailing fee-for-service payment method, through shared incentives to manage utilization, improve quality, and curb cost growth.

State efforts to advance accountable care models vary considerably. However, for the purposes of the NASHP dataset, a set of three core characteristics and capabilities, consistent across designs, is needed:

1. Organizations or structures should assume responsibility for a defined population of patients across a continuum of care, including across different institutional settings.
2. Participants should be held accountable through payments linked to value, emphasizing dual goals of improving quality and containing costs.
3. Accountability should be facilitated by reliable performance measurements that demonstrate savings are achieved in conjunction with improvements in care.

We found 19 states had documented ACO activities. From those 19 states, we searched for ACOs with documented synergies with PHAs, chronic disease-related activities, and an indication of informatics initiatives. We also looked at state and local partners engaged with the Million Hearts initiative. This program promotes coordinated clinical practices and community interventions for heart disease and stroke prevention through quality measures incorporated in the Medicare Shared Savings Program, coverage of preventative services, and community-transformation grants. Million Hearts includes multiple public and private partners, including the CDC, Centers for Medicare and Medicaid Services, and the American Heart Association.

We applied four criteria to select three case study sites from the 19 possible states: (1) documented synergies with PHAs; (2) chronic disease-related activities; (3) an indication of informatics initiatives; and (4) engagement in the Million Hearts initiative.

We selected Arkansas and Iowa in order to obtain a state-level perspective. Also, at the time, there was little information in the published literature about these two sites. We felt this would lead us to possibly rich and new findings that would prove beneficial to the public health and ACO communities, especially those communities at early stages of collaborating with each other. We selected New York City to obtain a city-level perspective.

The following table shows our sources per site, including the public health entities, the ACOs and other health care organizations that we obtained information from via interviews and materials provided by the interviewees.
### Case Study Site Sources

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<tr>
<th>Type</th>
<th>Arkansas</th>
<th>Iowa</th>
<th>New York City</th>
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</thead>
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| **Public Health Entities**    | • Arkansas Chronic Disease Prevention and Control Branch, Arkansas Department of Health  
          • Fay W. Boozman College of Public Health                                | • Iowa Department of Public Health  
          o Bureau of Chronic Disease Prevention and Management  
          o Office of Health Care Transformation  
          • Local Health Departments  
          o Dallas County  
          o Mason City  
          o Webster County                                                      | • New York City Department of Health and Mental Hygiene  
          o Bronx District Public Health Office  
          o Bureau of Chronic Disease Prevention and Tobacco Control  
          o Bureau of Epidemiology Services  
          o Bureau of Epidemiology Services – Special Projects Unit  
          o Bureau of Primary Care Access and Planning  
          o Primary Care Information Project  
          • NYC REACH, Regional Extension Center                                   |
| **Accountable Care Organizations (by type)** | • Arkansas Health Network ACO (Medicare)                                    | • Mercy Medical Center and the University of Iowa Health Care System (Medicare, Shared Savings Program)  
          • Program for Wellness Population (Medicaid)  
          • Trinity Pioneer ACO (Medicare)  
          • Wellmark ACO (Commercial, Shared Savings Program)                       | • Independent Physician Associations (Community-based)  
          • Montefiore Pioneer Model ACO (Medicare)  
          • Overview of multi-specialty, hospital-based, and independent-based Medicare shared savings ACOs |
| **Other Health Care Organizations** | • Arkansas Foundation for Medical Care  
          • Arkansas Medicaid, Department of Health Services  
          • Health Information Technology (HITArkansas), Regional Extension Center  
          • Primary Care Health Home Program (Health Care Payment Improvement Initiative)  
          • St. Vincent Health                                                        | • Iowa Health and Wellness Plan (Medicaid)  
          • Iowa Medicaid, Department of Health Services  
          • Primary Care Health Home Program (Medicaid Redesign Delivery System Reform Incentive Payment program) | • Broadway Internal Medicine  
          • New York State Medicaid Managed Care Organization                        |
Accountable Care Organizations per Site
To show our ACO sample in a larger context, the following list includes an extensive, yet not exhaustive list of ACOs by case study site xxv.

Arkansas
Arkansas Health Network xxi
Fort Smith Physicians Alliance ACO
Mercy ACO, LLC

Iowa
Accountable Care Clinical Services, PC
Alegent Health Partners, LLC
Genesis Accountable Care Organization, LLC
Iowa Health Accountable Care, L.C.
Mercy ACO
Trinity Pioneer ACO, LC
University of Iowa Affiliated Health Providers, LC
Wellmark ACO xxvi

New York
Bon Secours Good Helpcare, LLC
HHC ACO, Inc.
Keystone ACO
Accountable Care Coalition of Syracuse, LLC
Asian American Accountable Care Organization
Beacon Health Partners, LLP
Chautauqua Region Associated Medical Partners, LLC
Healthcare Provider ACO, Inc.
WESTMD Medical Group, P.C.
Independent Physicians ACO
Mount Sinai Care, LLC
ProHEALTH Accountable Care Medical Group, PLLC
Montefiore ACO
Crystal Run Healthcare ACO, LLC
CIPA Western New York IPA
Chinese Community Accountable Care Organization
Accountable Care Coalition of Mount Kisco, LLC
Accountable Care Coalition of the North Country, LLC

Of note, Arkansas has fewer established ACOs than Iowa and in New York. In our sample of ACOs from Arkansas, we only gathered information from one of the ACOs, yet Arkansas Health Network represents one of the three total ACOs in Arkansas. We researched information for four Iowa ACOs, which is representative of one half of the total ACOs in Iowa. In New York City, we gathered detailed information for two ACOs, yet we gathered high-level information on all of the ACOs working in collaboration with the New York City Department of Health and Mental Hygiene.

Additionally, our interviews and information collected represents the following types of ACOs:

- Medicare
- Medicaid
- Pioneer
- Shared Savings Programs
- Community-based Programs
- Commercial
Data Collection Approach
We conducted one, multi-session face-to-face site visit, as well as eight semi-structured telephone interviews with a total of 30 expert stakeholders engaged in public health, as well as clinical health. We recorded all interviews and captured detailed notes per interview.

Initial interviewees were identified through research and team experience with stakeholders. In identifying resources to interview in New York City, we worked directly with our contact who had attended the Chronic Disease Surveillance Workgroup Meeting. For Arkansas and Iowa, we gathered contact information from the National Association of Chronic Disease Directors’ Board of Directors listingxxviii. We contacted the respective board member for their state and requested an interview, or with another resource of their suggestion. We researched ACO contacts via online sources and validated this information with our public health contacts. We also received other interview leads from those we initially interviewed. Interview questions and topics were based on literature reviews and contributions from team members. Questions for the PHAs and the ACOs focused on their goals and data capture with chronic disease programs, and ways these entities have worked together or plan to work together on chronic disease initiatives. Questions with public health organizations focused on their organizations’ role with the Million Hearts initiative and the potential synergies between PHAs and ACOs, in relation to the sharing of chronic disease information. See the Appendix for the interview guide.

Cross-case Comparisons
Arkansas had less mature activities than the others, and we conducted fewer phone interviews. The relationship between the public health department and the state and regional ACOs was just forming. At the time, the state ACO was just implementing a software package related to capturing data.

Iowa benefitted from having received past State Innovation Model (SIM)3 grant funding and working together on submitting a new SIM proposal. They provided tangible examples of activities happening at the local level, as well as detailed planned activities (detail in the Case Study Findings). However, large examples of data exchange were not available to test out our assumptions.

Because of their longer history of working with clinical providers, New York City staff members provided detailed examples and were able to show at varying levels positive impact to health outcomes related to decrease in hypertension and smoking.

Narrative Construction
Two staff members participated in every interview. After each interview, one project staff member developed an initial summary and the other reviewed the recording of the interview and edited the summary to ensure that it accurately reflected the interview. The interview guide was used consistently in all interviews. From the questions included in the guide, the interviews were summarized based on key points and common themes. To that end, we have included poignant information shared in the interviews in the narrative. However, not all information from the interviews is included in the narrative.

One staff member created the initial draft of the case study report and the other reviewed the report and provided input in order to reach agreement on the key findings and themes.

3 According to the Centers for Medicare & Medicaid Services, “the State Innovation Models Initiative is providing support to states for the development and testing of state-based models for multi-payer payment and health care delivery system transformation with the aim of improving health system performance for residents of participating states.” (http://innovation.cms.gov/initiatives/state-innovations/)
Limitations
We recognize our sample size was limited. For example, since the passage of the Affordable Care Act in 2009, "more than 360 Medicare ACOs have been established in 47 states, serving over 5.6 million Americans with Medicare.** We only interviewed or gathered information from four Medicare ACOs thus representing only 1% of the total Medicare ACOs.

We selected three sites for our case studies report. Certainly, there were additional sites that would have been good candidates for selection too. In selecting our three sites, we chose two sites to capture information at the state-level and one site to capture information at the city-level. In reality, all three sites had additional examples, both at their state and local levels. However, due to our project timeframe, we limited our primary data collection to the original state- or city-level.

We interviewed three representatives from Arkansas, seven representatives from Iowa, and twenty representatives from New York City. We conducted telephone interviews with Arkansas and Iowa and a face-to-face site visit in New York City. The differences in number of representatives per site and format of the interview contributed to the volume and quality of data collected. Additional materials for both Arkansas and Iowa are included in the Case Study Findings in order to provide a more balanced view.

We selected key themes from the interviews for inclusion in the narrative. We did not code the results and conduct a quantitative or qualitative analysis due to the project timeline. We also were not able to capture detailed examples of data exchange from Arkansas and Iowa due to the current state of the relationships between the respective PHAs and ACOs. Therefore, we provide actual findings rather than statistical correlation between findings and study questions.

Based on the limited number of sites interviewed and information collected from, we recognize that we have a convenience sample for this case study report. We believe that our research has been “exploratory” in nature and that the research conducted to date will lead to further research. Our conclusions are not widely able to be generalized. Nonetheless, based on the emerging intersection of informatics within chronic disease initiatives, we believe this study represents an important first step to further framing a larger, more extensive research design.

Case Study Findings
Each case study is reported by public health and ACO perspectives. The findings section includes information from the interviews, in addition to materials provided by the interviewees. Note that the ACO case results included discussions with multiple health care entities. This was driven from findings that PHAs and ACOs have relationships with multiple clinical health initiatives including entities such as Medicare, Medicaid, Primary Care Medical Homes, Quality Improvement Initiatives, CMS-sponsored State Innovation Model grants, managed care organizations, and private health care providers. For the purposes of this report, ACOs may include these various forms of health care providers.

Arkansas
Arkansas is considered one of the unhealthiest states in the country—ranking 49th due to high rates of smoking, obesity and diabetes.** However, a Gallup poll demonstrates that Arkansas made the most immediate progress in reducing its number of uninsured residents following the passage of the Affordable Care Act. The percentage of uninsured in Arkansas dropped from 22.5 percent in 2013 to 12.4 percent in August 2014.

This greater insurance coverage for residents, along with new public health initiatives and the emerging infrastructure of ACOs show that Arkansas is poised to transform the health of its population.
The Heart Disease and Stroke Task Force supports the CDC’s Million Hearts Campaign. The following five-year objectives are specific to Million Hearts.

- **Goal 1:** Increase the percentage of Arkansans of all ages who engage in regular physical activity.
- **Goal 2:** Promote tobacco prevention and cessation among Arkansans of all ages.
- **Goal 3:** Improve access to screening and health care services for all chronic diseases in rural and underserved areas.
- **Goal 4:** Educate and inform the public on health issues related to community partnerships, prevention, screening, treatment, outreach, and control of chronic diseases.
- **Goal 5:** Develop and implement a legislative agenda to support the policy and fiscal needs of chronic disease activities.
- **Goal 6:** Support the development of communities that promote life-long physical activity, healthy nutrition, and tobacco free environments.

### Arkansas – Public Health

**Agency goals related to health improvements for chronic disease**

The Arkansas Department of Health has created a Chronic Disease Coordinating Council. This umbrella organization has released *Healthy People 2020: Arkansas's Chronic Disease Framework for Action* designed to guide the efforts of participating agencies, organizations, and coalitions, and to help build relationships that can reduce the impact and costs of chronic disease in Arkansans. This framework outlines the Council’s ways to track and monitor the state’s progress in meeting their objectives as they move forward with encouraging improvements in health habits.

The mission statement of the Chronic Disease Forum is as follows: “Increase the quality and years of healthy life for all Arkansans by reducing the burden of chronic disease through collaborative action aimed at education, prevention, and treatment.” The Arkansas Department of Health has partnered with the clinical partners within the Arkansas Chronic Illness Collaborative practice teams to collect patient data on the ABCS clinical quality measures. The health department has also partnered with the private nonprofit educational organization, the Arkansas Foundation for Medical Care, to support medical practices focusing on and monitoring the ABCS for the purpose of improving patient outcomes.

Additionally, Arkansas’s Heart Disease and Stroke has the goal of reducing deaths from heart disease and stroke in order to improve the overall cardiovascular health among Arkansans and to reduce morbidity, mortality and related health disparities. The Heart Disease and Stroke Task Force members are currently working toward implementing the goals of the five-year 2011 state plan which includes a focus on the ABCS.

### Data capture and measurement

The Arkansas Department of Health captures chronic disease surveillance data from such sources as CDC’s Behavioral Risk Factor Surveillance System, health statistics, death certificates, and hospital statistics. They employ an evaluator and epidemiologists to monitor the data collected from participating clinics and evaluate both process measures and outcome measures. The goal of the data gathering and evaluation activities is to support improving the quality of data so that better decisions can be made and appropriate policies can be enacted.

The health data is then made accessible to community-based organizations and Arkansans in order to help them take charge of health outcomes and risks in their community. For example, the Fay W. Boozman College of Public Health provides access to the “Public Health in Arkansas Community Search.” This website is a one-stop source for Arkansans looking for community specific health data. Researchers and public health practitioners also have access to the county-level data available on the Public Health in Arkansas Community Search website. This data can help guide the development of a legislative agenda and other policy and fiscal support initiatives. Information found on the Public Health in

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4 ABCS refer to appropriate aspirin therapy for those who need it; blood pressure control; cholesterol management; and smoking cessation.
Arkansas Community Search website also educates the public and encourages communities to engage in life-long physical activity, healthy nutrition, tobacco-free environments, screening, and health services particularly in rural and underserved populations.

Taking into consideration the resources within Arkansas, the level of effort needed to achieve the National Health People 2020 target goals, and the baseline data within the state, data sources were identified and 2020 target goals were developed. Program managers, epidemiologists, scientists, coalitions and their chairs, boards and advisory councils, and staff at the Arkansas Department of Health all contributed to the development of what was determined to be realistic targets for Arkansas. For example, for the coronary heart disease mortality objective, the national baseline from 2007 is 126.0 deaths per 100,000, and the 2020 target goal is 100.8 deaths per 100,000, using a target setting method of 20% improvement. For this objective, Arkansas’ baseline is 149.9 deaths per 100,000 in 2007. Achieving the national target goal of 100.8 deaths per 100,000 would require a 33 percent improvement in Arkansas over the next 10 years, a 65% higher rate than the expected 20% improvement nationally xxxv. Thus, Arkansas-specific baseline data and target goals have been created as more realistic targets with the desired result of encouraging collaboration and setting reasonable and achievable goals for the state. Accordingly, “The ideal scenario will be for Arkansas to at least achieve these goals but to also try to surpass them and get as close to the national target as possible xxxvi.”

Specific to the Healthy People 2020 Objectives, the Arkansas Department of Health measures data found in registries, such as the Arkansas Stroke Registry. In addition to measuring information captured in the Arkansas Stroke Registry, other examples of measuring data include: patient data captured at the time of screening, surveillance data captured at local health events, hospital discharge data provided by practitioners, information reported by workgroup members to coalition members, data reported out by pharmacy partners, and data collected by community health workers. The Search Engine for Healthy People 2020 Objectives is accessible via the web and provides access to baseline data, target goals, data sources for tracking the achievement of goals, and activities to reach the goal.

Arkansas – Accountable Care Organizations
Agency goals related to health improvements for chronic disease
Under the Health Care Payment Improvement Initiative, the aim of the Patience Centered Medical Home (PCMH) is to reinvigorate primary care and ultimately build a healthier future for all Arkansans. PCMH helps achieve Arkansas’ triple aim: improving population health, enhancing the patient experience, and controlling the cost of care. Population-based care delivery is characterized by risk stratified and tailored care delivery, enhanced access for patients, evidence-based approach to care delivery, shared decision making, team-based care coordination, and performance transparency xxxvii.

The primary aim is to create a sustainable patient-centered health system through an evidence-based approach to care delivery. PCMH seeks to do this by investing more in primary care. PCMH provides practices with funding to build infrastructure, information to reduce emergency room use, and care plans for their high-risk patients. This investment will contribute to increased financial incentives for primary care providers and will improve practice processes and workflows.

Further improvements in population health involve engagement in the Million Hearts initiative. In order to reduce the burden of heart disease in Arkansas, the Health Information Technology Regional Extension
Center for Arkansas (HITArkansas) has engaged stakeholders, providers, and patients in their efforts with the Million Hearts initiative. “Working in tandem with its parent organization, Arkansas’s Quality Improvement Organization called the Arkansas Foundation for Medical Care, HITArkansas embarked on a state wide campaign to help providers leverage Health IT for Million Hearts, educate patients about the ABCS, and build support for Million Hearts among key community stakeholders.” Community stakeholders such as faith-based organizations, public libraries, and small businesses are distributing lists of blood-pressure monitoring stations located throughout the community. City governments have launched campaigns to educate the community about the threat of heart attacks and strokes.

In addition, HITArkansas has engaged providers in the redesign of their EHR workflows. For example, EHRs now provide an alert that notifies providers during the office visit if patients are due for a cholesterol check. One remarkable success story also involves EHR workflow redesign. “With a simple workflow adjustment, we helped one practice increase performance on the smoking cessation clinical quality measures from 16% to 82%,” remarked Dr. Jennifer Conner, Quality Specialist at Arkansas Foundation for Medical Care.

Related to ACOs in Arkansas, in March 2013, St. Vincent Health formed the ACO, Arkansas Health Network. The Arkansas Health Network focuses on population health management and serves the Medicare population in addition to the Arkansas Health Network employees and their dependents. Having identified cardiovascular health and chronic obstructive pulmonary disease as the primary focus areas for their chronic disease population, the Arkansas Health Network has hired health coaches and navigators to manage their patients with chronic diseases.

Their clinical care network has developed protocols and resources to identify patients who have chronic diseases to more proactively manage this patient population.

Data capture and measurement
Claims data is captured and reported to providers for use in population-based analysis. The Healthcare Effectiveness Data and Information Set (HEDIS) measures are used in the providers’ programs, at both the aggregate and the provider level. Quality metrics have been established and must be met to receive shared savings incentives. These metrics are in place in order to ensure quality is not compromised as the PCMH seeks to reduce costs. For example, target percentages have been set for pediatric patients who receive age-appropriate wellness visits at 67% for children 0-12 months; 67% for children 3-6 years of age; and at 40% for children 12-20 years of age. The percentage of diabetes patients who receive annual HbA1C testing has also been set at 75%.

Consequently, providers are now being held accountable for specific quality measures, and in order to receive the medical home incentive, providers must implement systems to support the capture and reporting of required data. To that end, providers are required to sign up with the health information exchange, expected to have EHRs, and to track patients when discharged from the hospital. Pointing to the success of this initiative, as of December 2013, 600 providers enrolled, representing 120 practices for a total of 70% coverage of eligible patients within the state.

The Arkansas Health Network is currently implementing a software product to measure risk and to track health at the population level. Once the software package is fully installed, primary care physicians will be able to pull data on all Medicare patients within primary care panels who have cardiovascular health issues and Chronic Obstructive Pulmonary Disease. Current efforts involve scrubbing Medicare data and assessing the necessary tools to not just pull claims data, but to also access clinical data. Once clinical data is captured, baseline data will be established and measures will be created in order to define clinical improvement goals for the Arkansas Health Network.
Collaboration between Public Health Agencies and Accountable Care Organizations

At the time of our telephone interview, the Arkansas Department of Health was currently at the developmental stage of working with ACOs in their state. The Arkansas Department of Health appreciates the rich data available within the ACO community based on the ACO’s objective to create an integrated data sharing model. One initiative the health department has started is working with the ACO community on gathering data from the state employee division, in order to investigate the impact of chronic disease initiatives among state employees.

The health department is also working with other health care entities to access real-time clinical data. For example, the state-wide data sharing network is a statewide exchange via a web server. The desire is to create a chronic disease registry which will tap into the state-wide data sharing network data in order to have real time chronic disease data sharing with hospitals and private providers. Currently, the mortality data being used for decision making tends to be one-to-two years old, and having access to real-time data through the chronic disease registry would empower better decision making, possibly leading to improved health outcomes.

According to the “Healthy People, 2020: Arkansas’s Chronic Disease Framework for Action,” the Chronic Disease Branch of the Arkansas Department of Health is encouraging physicians to continue to engage patients about the future and consequences of unhealthy behaviors, specific to guidance about ideal body weight, nutrition, exercise, becoming tobacco free as well as other preventive lifestyles. They are also encouraging physicians to participate in the various coalitions related to chronic diseases fostered by the health department.

The health department has also successfully launched the Arkansas Clinical Transformation program. The program consists of 10-12 primary care clinics. The health department trains the clinics on the chronic care model through this program and helps them in their steps toward becoming a PCMH. The health department has a memorandum of understanding with the clinics for data sharing, in order to review their chronic disease data and to make process improvements.

The PCMH seeks to transform all provider practices. Special attention is given to rural practices gaining greater capacity for preventative services and chronic disease management. To that end, the public health department has been invited to join a primary care advisory group currently comprised of providers and insurance companies. This forum is an opportunity to discuss what is feasible and viable within the PCMH program, with the goal of engaging all stakeholders to improve health in the state. This engagement could lead to additional opportunities for collaboration for the public health department with existing PCMH quality improvement activities, including initiatives with the state Quality Improvement Organization and pay for performance programs with Medicare and Medicaid.

According to interview participants, engaging in meaningful ways will benefit both the public health and medical care communities in Arkansas as they continue to address population-based issues. In order to engage in meaningful ways, an understanding of the benefits each entity brings to the table will be required. In addition, an appreciation for the roles and responsibilities of each is necessary. For example, recent initiatives related to breastfeeding and the perinatal ICU networks have successfully used combined talents of the public health and medical care communities. To that end, current initiatives with Hepatitis C screening and funding of treatment options will be successful only when both the public health and the medical care communities engage in meaningful ways that leverage their strengths.

Other initiatives—the initiation of data sharing agreements, evolution of medical coverage for adults with the continued rollout of the Affordable Care Act (ACA), increased chronic disease management programs provided within the PCMH program, insurance companies engaging in population health assessments with new tools and incentives, developing roles of the community health workers, and continued funding challenges—all point to the need for better integration and valuing each other’s niche as well.
Specifically, St. Vincent Health and the ACO, Arkansas Health Network, are working closely with the Arkansas Department of Health on the development and implementation of the Arkansas Payment Improvement Initiative. The Arkansas Payment Improvement Initiative is the state’s effort to establish a health care exchange and provide the vehicle for uninsured and underinsured patients that do not qualify for Medicaid to access insured care. Through these interactions between St. Vincent Health, Arkansas Health Network, and the Arkansas Department of Health, stakeholders will leverage the opportunity to be more proactive with setting public health goals and improving interaction within private industry. For example, past initiatives of St. Vincent and the Arkansas Health Network have focused on developing the technology infrastructure and measuring health care utilization. However now, achieving behavior modification in the patient population and impacting measures at the population level will be of primary focus for St. Vincent and the Arkansas Health Network.

Summary
The relationship between the PHAs and ACOs is still in the formative stage in Arkansas. To that end, we were unable to fully test all our hypotheses (see Methodology section). However, the following are examples of current collaborations and emerging work that are promising for making a positive future impact.

- Public Health in Arkansas Community Search – Health data is made accessible to community-based organizations and Arkansans in order to help them take charge of health outcomes and risks in their community.
- Chronic disease initiatives among state employees – The health department is working with the ACO community on gathering data from the state employee division in order to investigate the impact of chronic disease initiatives.
- State-wide data sharing network – The health department is working with other health care entities to access real-time chronic disease clinical data to empower better decision making, possibly leading to improved health outcomes.
- PCMH and rural practices – The public health department is invited to a forum of providers and insurance companies to discuss what is feasible and viable within the PCMH program for gaining greater capacity for preventative services and chronic disease management.
- Arkansas Payment Improvement Initiative – Interactions between St. Vincent Health, Arkansas Health Network, and the Arkansas Department of Health to leverage the opportunity to be more proactive with setting public health goals and improving interaction within private industry.

Iowa
Iowa has a better than average health status—ranking 18th in the country based on recent decreases in smoking rates and rates of cardiovascular deaths. Additionally, Iowa recently achieved a historically low infant mortality rate\(^6\). However, rates of obese adults and the prevalence of diabetes are both on the rise\(^{10}\). To contend with the ongoing health challenges, initiatives within Iowa, such as the Iowans Fit for Life State Plan, are committing the necessary resources for all Iowans to make healthy choices about eating and physical activity to achieve improved health outcomes\(^{11}\).

Commitments such as these and the burgeoning relationships between public health and the ACOs demonstrate continued dedication by Iowa to improve the health of its population.
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

**Iowa – Public Health**

*Agency goals related to health improvements for chronic disease*

The program Healthy Iowans includes Iowa’s statewide health assessment and health improvement planning process. Every five years, the Iowa Department of Public Health convenes stakeholders, health partners, and Iowa residents to assess the status of the state’s health and develop strategies to improve health for all Iowans. The resulting *Healthy Iowans: Iowa’s Health Improvement Plan 2012-2016* represents the coordinated chronic disease and health promotion state plan. This plan focuses on 39 critical health needs and provides a blueprint for addressing them. The process for identifying Iowa’s 39 critical needs and organizing them into a manageable framework involved a comprehensive analysis of stakeholder input at the local and state level, the analysis of data resources, and feedback from Iowans. The Healthy People 2020 initiative was referenced in the creation of the assessment portion of Healthy Iowans. However, this version of Healthy Iowans is based primarily on local planning efforts; the goal being to produce a plan that represented Iowa’s unique needs and a community-up approach. Chronic diseases in the Healthy Iowans plan include arthritis, osteoporosis, chronic back conditions, cancer, chronic infectious diseases including HIV and viral hepatitis, diabetes, heart disease, stroke, neurological disorders, and respiratory conditions. Examples of heart disease and stroke initiatives found in the plan include the following:

- The Iowa Cardiovascular and Stroke Task Force will inform the public through social marketing about the importance of blood pressure screening and medication adherence and the national Million Hearts Initiative.
- The Iowa Department of Corrections will institute a program for obese women at the Iowa Correctional Institution for Women to reduce the risk of cardiovascular disease.

Additional agency goals related to health improvement for chronic disease are imbedded in work guided by funding opportunities. For example, the CDC-funded 1305 State Public Health Actions Plan includes funding for heart disease, stroke, diabetes, nutrition, physical activity, obesity, and school health-related activities. Additional funding from CDC addresses initiatives such as colorectal cancer, breast and cervical cancer, and comprehensive cancer control. The cardiovascular screening program for women called “Wise Woman” has the aim of lifestyle intervention for women who participate in the breast and cervical cancer program. Iowa’s “Set for Life Plan” also includes initiatives related to heart disease, stroke, and cancer.

**Data capture and measurement**

For the 1305 State Public Health Actions Plan, the Iowa Department of Public Health will conduct a baseline survey to indicate compliance of the clinical systems with ACA reporting measures related to hypertension and diabetes. At the time of the telephone interview, the baseline survey was in its initial phase. The Iowa Department of Public Health has primarily partnered with hospitals for heart disease and stroke prevention in the past. Brand-new partnerships and collaborations with the clinical systems are in the formation stage. The Department of Public Health is exploring the broad clinical systems landscape and is learning how the health system works on the clinical side. They are also developing new ways of working with clinical systems related to reporting hypertension and diabetes measures. For example, through activities outlined in the 1305 State Public Health Actions Plan, the Department of Public Health will provide clinical systems with access to resources on their website previously not available to them for integration into their own practice.

As with many health departments, the Iowa Department of Public Health also contends with limited funding as they plan their measurement and evaluation processes. For example, they have worked with regional community health centers to track age-appropriate colorectal screenings for their populations. Lack of funding is oftentimes a barrier to organizations collecting and reporting this information to the Department of Public Health. Funding is also needed to track colorectal screening rates and how screening rates change over time.
In addition, strengthened relationships with the health care community are needed for meeting new chronic disease screening program requirements. Screening rates across the country are being compared now for the overall population and not just the underinsured population. The Iowa Department of Public Health wants to ensure that people are using the resources they have available to seek chronic disease screening and care they need. To that end, the health department will engage with the health care community to assess this information.

**Iowa – Accountable Care Organizations**

**Agency goals related to health improvements for chronic disease**

Iowa has four practice-based population health programs in the state that include the following: Primary Care Health Home Program, Integrated Health Home Program, ACO Program for Wellness Population, and the SIM. The Primary Care Health Home Program was created to work with those who have chronic medical conditions. Participants must have two or more chronic medical conditions, including heart disease, overweight or obesity, asthma, diabetes, hypertension, mental illness, or substance abuse. Those providers who wish to participate in Iowa’s Primary Care Health Home Program must have gained recognition as a PCMH within one year.

The Integrated Health Home Program assists those with chronic or persistent mental illness, and children with severe emotional disturbances. This program is designed to bring care to patients in their existing centers of care, typically the mental health care setting, as the patients most often engage with their providers in these settings. These existing centers of care work with primary care providers in their community to meet the health needs of this patient population.

The Iowa Health and Wellness Plan represents Iowa’s Medicaid expansion group and includes two options, the ACO Program for Wellness Population and the Market Place Choice Plan, both aligned with the Federal Poverty Level. As per the Medicaid expansion law, Medicaid will develop ACO arrangements for this new population group and will promote medical homes in this program. Currently, the ACO contract covers the Wellness Population through incentive-based arrangements. This new ACO incentivizes eligible providers to improve access and to promote the medical home concept. This Medicaid ACO model is being designed and refined to integrate long-term care services and behavioral health services, and will leverage the successes of the multi-payer strategy within the Wellmark ACO, Iowa’s largest private payer.

The SIM is still in the first stage, the design phase. The second phase of the project, the testing phase, is pending further grant approval and funding. The proposed, new ACO model is based on past successes from the Iowa Health and Wellness Plan Program and is designed to eventually bring the whole state of Iowa into an ACO structure. As proposed in the SIM testing phase funding request, Iowa will expand the ACO model to incorporate shared risks and shared savings and will include the Market Place Choice Plan too. This new SIM funding would allow the Medicaid ACO to continue to align well with the Wellmark ACO model, in addition to continuing to address long-term care services and behavioral health services within an ACO arrangement for all Medicaid recipients.

Iowa Medicaid is using ACA funding to promote coordinated care related to individuals with chronic conditions. For example, providers are being incentivized to transform their services to provide care in different ways, such as patient interactions that are not conducted through inpatient office visits. This is empowering primary care providers to target individuals with chronic conditions and is contributing to managing total cost of care as well as quality.

The Medicare ACO Shared Savings Program began in July 2012 and includes both Mercy Medical Center in Cedar Rapids, Iowa, and the University of Iowa Health Care System in Iowa City, Iowa. These two entities combined efforts in order to cover a larger population base. One of the first board-directed initiatives within the Medicare ACO was to hire care coordinators (seven nurses and one health coach). These care
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

The ACO care coordinators at Mercy Medical Center and the University of Iowa Health Care can better attend to the holistic needs of the patients, in addition to streamlining services offered by the physicians. For example, patients with newly-diagnosed cases of diabetes are now provided with tools to self-manage their condition. Care coordinators have access to the electronic data being captured and are able to look at their entire population of patients with diabetes to analyze how they are doing, look at outliers, and provide specialized attention where needed.

In addition to sharing the care coordinator staffing model, the Medicare ACO has found having the same EHR at both Mercy Medical Center and the University of Iowa Health Care System has provided synergies between the two entities as well. Through the patient portal called “My Chart,” their patients can look up their own clinical notes, schedule appointments, pay bills, and communicate with the care coordinators. Care coordinators are also conducting web meetings with patients and increasing the use of telephonic services. These technological advances are contributing to the Medicare ACO’s population-based practice approach.

Additionally, the University of Iowa Health Care System has received grant funding through 2015 for a program called Transitions of Care. The program has established nurse “navigators” to follow patients upon discharge from the hospital with the goal of decreasing readmission rates. During the pilot project, the nurse meets in the patient’s home within a week of discharge, attends provider appointments with the patient, ensures the patient is engaged with meeting their health needs at the local health care setting, and works to improve communication between the patient and their health care provider. This pilot project has contributed to the shaping of the Medicare ACO staffing model in that they have learned a great deal about the role of the care coordinator from the nurse “navigators.”

**Data capture and measurement**
Iowa’s ACOs have committed to being responsible for the integration of both clinical services and nonclinical community and social supports that address social determinants of health. They have also committed to working with the Department of Human Services to use Iowa Health Information Network capabilities to regularly exchange Admission Discharge Transfer data no later than July 1, 2015. Iowa’s ACO quality metrics will be implemented in a phased approach and may include attributed participant experience, primary and secondary prevention, tertiary prevention, population health status, continuity of care, chronic and follow-up care, and efficiency. In addition, among other responsibilities for ACOs that wish to participate in the Wellness Plan are that they must securely pass clinical information among their patient managers to aggregate and analyze data to coordinate care, using both Direct Messaging and query capabilities as available.

The Primary Care Health Home Program uses risk adjusted management. Each patient is tiered-based on the complexity of his or her conditions, and the medical establishment is paid a fee to deliver patient-centered medical care coordination and management. Measurement is based on a set of quality metrics, and if the PCMH can meet benchmarks on quality metrics, then they are eligible for set of bonus payments.

The ACO Program for Wellness Population monitors typical HEDIS measures at the Medicaid and state level. Adult quality measures are used to evaluate the Chronic Condition Health Home Program and
Integrated Health Home Program. In additional to measures identified by public health through their community health risk assessments, the ACO Program for Wellness Population is also currently working with diabetes, smoking cessation, and obesity quality measures related to improving population health. These quality measures are in alignment with the measures being used by the Wellmark ACO, and as with Wellmark, they will provide additional bonuses to provider groups who have met their targets.

Wellmark has used a value index score as part of their measurement system. The value index score consists of a set of quality metrics, which are the basis for an eligibility-cutoff for participating members for shared savings moving forward with the Iowa Health and Wellness Plan Program. Within the first year of participation, members must participate in a wellness exam from their provider and a health risk assessment in order to waive their premiums. Providers are incentivized to conduct wellness exams, and patients can complete their health risk assessment from their home computer, from the provider’s office, or they can call Medicaid to complete the assessment for them.

Wellmark is represented by an ACO-shared savings payment model. For the first year, shared savings triggers are related to primary and secondary prevention (breast cancer and colorectal screenings, and well-child visits for children birth to 15 months and for children 3 to 6 years of age) and chronic and follow-up care (potentially preventable readmissions, members with hospital discharge with provider office visit less than 30 days post-discharge, and members with chronic disease with greater than three provider visits). In addition, quality incentive payment is determined based on the following quality measures in six domains: member experience, primary and secondary prevention, tertiary prevention, population health status, continuity of care, and chronic and follow-up care.

The Medicare ACO Shared Savings Program receives monthly claims data from Medicare. They have used the data in a number of studies to improve costs and quality of care. They created a risk stratification tool based on clinical risk groups. They have analyzed historical data on attributed members and have used this data to create clinical risk groups scores within the range of one to nine. Patients with a score of one fit into the category of being healthy; patients with chronic diseases fit into categories starting with the score of five; and the score of nine is reserved for patients at the end of life.

By looking at risk stratification data and associated costs, they are able to prioritize the time and efforts of the ACO care coordinators. For example, the care coordinators focus on patients with scores between the ranges of five to seven. The emphasis is on patients with chronic diseases, as the greatest cost reductions and savings can be realized when targeting this patient population. The nurses in the primary care setting then focus on routine screenings such as mammograms and cholesterol checks, and the ACO care coordinators handle higher levels of chronic disease care, specific to the ACO quality measures. Now in the second year of implementation, they have decreased the numbers of return hospital readmissions and have seen associated cost savings.

Collaboration between Public Health Agencies and Accountable Care Organizations

At the state level, engagement with ACOs is in the early, formative stages. For example, Wellmark Blue Cross and Blue Shield of Iowa is one of the major private carriers in Iowa covering close to 70% of population. Using the Wellmark structure as a model, Medicaid is designing their ACO future processes in order to be represented as a multi-payer initiative. The Department of Public Health has a strong relationship with Medicaid, and therefore hopes to also engage in meaningful ways with the Medicaid ACO and with Wellmark in order to increase reach within their target patient populations.

Additionally, the Iowa Department of Public Health received a SIM design grant to investigate the ACO structure in Iowa specific to collaboration around diabetes, obesity, and tobacco intervention strategies. At the time of the telephone interview, they were actively working with Medicaid on a second SIM
application for a testing grant. Plans in the new SIM initiative include an increased involvement between public health and ACO development in Iowa.

The health department partners with Medicaid to provide technical assistance to ACOs and to community providers to achieve the goals of improving population health. The Medicaid and public health entities will work together on creating rapid cycle evaluations that incorporate public health data with Medicaid data in order to make timely decisions on the best application of resources. Medicaid will also work with public health in assessing social determinants of health data. By collecting and analyzing social determinants of health data, the health of individual patients and patients at the population level can be improved. With the awareness of all factors impacting the health and well-being of the population, resources can be built and processes instituted to adjust for and improve the quality of health outcomes.

The potential for interactions are high between the ACOs and public health agencies, especially at the local and county level. Public health agencies can be seen as brokering new relationships between the ACOs and their communities. At the local level, recent legislation has led to the implementation of Community Care Teams across the state with plans for these new Community Care Teams to be integrated within the new developing ACO structure in Iowa. For example, in Webster County, Local Community Care Teams are engaged in their Pioneer ACO grant with federal government funding to look at ACO development in rural communities. In the Mason City area, the local public health department is working with a local hospital and also with the Title V Maternal and Child Health programs. In Dallas County, the local health department is implementing health navigation in the community.

Additionally, six counties in central Iowa were recognized for working well with a Medicare ACO. They have been very successful in engaging at this level due to the established relationships with ACO within the larger health care delivery organization. The focus of their relationships was to streamline and develop working relationships to have less overlap in their services and more inter-referrals in order to get at what is really needed for the patients. One point of discussion centered on the role of mental health within the health home care structure. As the participants discussed the multifaceted chronic care needs in this particular situation, the role of the medical community and the public health community was discussed in light of not being in isolation of the mental health and the health home care structures, but being an integral part of the overall solution for the patient. This effort met with success and barriers were removed in terms in getting mental health services delivered to those in the integrated medical health home services.

Based on strong relationship development and keeping open lines of communication, public health agencies are engaged in a number of quality improvement initiatives. Based on our interviews, public health is valued for the knowledge they bring to the table, for organizing with the right people, for keeping strong relationships going, and for sharing with the provider community as to what public health has to offer and can bring to the table. For example, a committee in the Iowa Department of Public Health is discussing maternal and child health and the future of public health as the health care provider community evolves related to PCMHs and ACOs. The committee is actively discussing challenging questions such as, “As health delivery evolves, what happens to public health, particularly Title V Agencies, in the face of ACOs?”

As integral parts of the care coordination services, public health agencies have provided invaluable community resources and services such as home health agencies, transportation, meals, and vouchers for medications. Public health agencies have recently engaged in tracking and following the status of Medicaid patients within the Iowa Health and Wellness Program. Public health is also seeking funding to support a study on emergency room visits to assess the impact of patients’ improved access to primary care. These public health initiatives that look at Medicaid patients and emergency room use will help the

Interviewees stressed the importance of collaborating with ACOs, so efforts aren’t duplicated.
ACOs validate who are using these services, how has this changed over time, and what might the impact be.

As public health collects data and helps to identify trends and patterns, interviewees stressed the importance of collaborating with ACOs, so efforts aren't duplicated. ACOs are interested in receiving analysis of their data that is unique to what they are currently receiving. In addition, the timeliness of data is very significant as ACOs are required to report on quality measures on a timely basis.

During our interviews, the need was expressed for developing close-knit relationships and prioritizing strong communications. This way, rather than a medical provider system or clinic trying to establish new requirements for what they have to do under PCMH, they recognize these new roles and activities are best conducted through public health, rather than around public health. By understanding what each entity is engaged in and what the capabilities are, better health outcomes can be achieved. Interviewees on both sides want to take advantage of what each bring to the table.

**Summary**

The relationship between the PHAs and ACOs is still in the formative stage in Iowa. To that end, we were unable to fully test our hypotheses (see Methodology section). However, the following are examples of current collaborations and emerging work that are promising for making a positive future impact.

- **1305 State Public Health Actions Plan** – Based on successes from partnering with hospitals for heart disease and stroke prevention in the past, the public health department will conduct a baseline survey to indicate compliance of the clinical systems with ACA reporting measures related to hypertension and diabetes.
- **Regional Community Health Centers** – The health department will track age-appropriate colorectal cancer screenings for their populations.
- **Chronic Disease Screening Rates** – The health department will engage with the health care community to compare screening rates for the overall population and not just the underinsured population.
- **SIM Grant** – Iowa’s health department will partner with Medicaid to provide technical assistance to ACOs and to community providers to achieve the goals of improving population health; and work together on creating rapid cycle evaluations in order to have timely access to incorporating public health data (including social determinants of health data) with Medicaid data.
- **Iowa Health and Wellness Program** – The health department has recently engaged in tracking and following the status of Medicaid patients within the Iowa Health and Wellness Program.
- **Emergency Room Visits** – Iowa’s public health department is seeking funding to support a study on emergency room visits to assess the impact of patients’ improved access to primary care to help the ACOs validate who are using these services, how has this changed over time, and what might the impact be.

**New York City**

New York is considered one of the healthiest states in the country—ranking 15th due to increases in high school graduation rates and decreases in rates of air pollution, uninsured persons, deaths from cardiovascular disease, and adult obesity. However, one in five of New York City’s public school children are obese, and more than a third of New York’s African-American residents have high blood pressure.

New York City boasts high per capita public health funding and ready availability of primary care physicians and dentists. New York City communities and neighborhoods are poised to act, and
The focal areas in Take Care New York include goals and measures for success. For example, the Tobacco-free Living focus area states the following:

Making it harder to smoke and easier to quit are critical to reducing the risk of heart disease, stroke, cancer and other serious illnesses. New York City has made considerable progress in reducing cigarette smoking. Following the implementation of the city’s comprehensive tobacco control program, the adult smoking rate fell from 21.5% in 2002 to 15.5% in 2012, representing 324,000 fewer smokers. In addition, youth smoking has decreased by nearly half from 14.8% in 2003 to 8.5% in 2011.

Focal areas are defined as the following:

The Tobacco-free Living Measures for Success
Decrease the rate of adults who currently smoke citywide and in high-poverty households

The Heart Health focus area
Heart disease remains the leading cause of death in New York City, and more than 18,000 New Yorkers die from heart disease and stroke each year. Many of these deaths can be prevented if people quit smoking, have healthier diets, and become more physically active—behaviors that are addressed in other Take Care New York priority areas. But many of these deaths can also be prevented through better management of risk factors, particularly high blood pressure, high cholesterol, obesity, and diabetes. Managing these risk factors well requires action by health care providers and the health care system in which they work and patients.

The Heart Health Measures for Success
Reduce premature deaths from cardiovascular disease citywide and in very high-poverty neighborhoods, and increase adults with high cholesterol who are taking medication and patients with controlled blood pressure citywide.

In addition to the Heart Health focus area in the Take Care New York initiative, the health department also houses the Regional Extension Center NYC REACH, a program whose mission is to improve the quality of care in medically underserved areas through the use of health information technology. In addition, NYC REACH is helping providers engage patients in Million Hearts. To tackle the biggest challenge of engaging patients around the Million Hearts measures, NYC REACH helped New York providers optimize their EHR systems and encourage patients to become more engaged in their health and health care. As providers analyzed their patient data, they were then better able to prioritize areas for improvement within their practices. One success story includes the implementation of a clinical support feature within a provider’s EHR to support smoking cessation counseling. As patients are identified as smokers, the provider is...
prompted with a number to a quit line and a recommendation to provide counseling about smoking cessation.

**Data capture and measurement**
The Bureau of Epidemiology Services conducts surveys and analyzes data to contribute to population health monitoring and research, inform policy, provide evaluation data, and to advise on the development of program interventions. They have recently completed the second New York City Health and Nutrition Examination Survey (HANES) and now have data from 2004 and from 2014 in their data repository. HANES staff will use this data, for example, to compare levels of codeine in non-smokers which have been higher than the national average; and to investigate the level of undiagnosed diabetes.

Another survey, the Community Health Survey examines smoking prevalence, health insurance status, cancer screenings, and other chronic disease topics such as diabetes, asthma, nutrition, and physical activity. The Community Health Survey provides robust data on the health of New Yorkers from all five boroughs of New York City (Manhattan, Brooklyn, Queens, Bronx, and Staten Island), including neighborhood, borough, and citywide estimates on a broad range of chronic diseases and behavioral risk factors. The survey results are analyzed and disseminated in order to track the health of New Yorkers, influence health program decisions, and increase the understanding of the relationship between health behavior and health status. For example, results from the Community Health Survey help to inform and shape smoking programs such as “Be Tobacco Free” and healthy eating programs targeted at decreasing consumption of sugar-sweetened beverages. Additionally, the Physical Activity and Transportation survey has been conducted to examine and ultimately reduce sodium in packaged food and in restaurant-prepared meals.

Within the NYC DOHMH, the Bureau of Chronic Disease Prevention and Tobacco Control conducts the Youth Risk Behavior Survey, which collects information on chronic conditions such as obesity, by examining sleep patterns and nutrition. They have found a recent decrease in alcohol consumption and a decrease in smoking rates among youth which they hope to be able to correlate these results with recent public campaigns.

The Bureau of Chronic Disease Prevention and Tobacco Control uses hospitalization data, both discharge data and some emergency department data, to examine smoking-related conditions. They also use syndromic surveillance data and smoking-related death data as reported by the Bureau of Vital Statistics. This data has been useful in working with the provider community via focus groups to support them in their approach to offering smoking cessation programs and providing nutrition and physical activity counseling.

As organizations such as ACOs become well-established and payment mechanisms for this type of counseling become more mature, the NYC DOHMH is committed to fostering and supporting the medical community’s increase in smoking cessation and nutrition and physical activity counseling. In addition, through NYC DOHMH’s Primary Care Information Project (PCIP), public health prevention-oriented measures have been embedded in some of the providers’ EHRs. By NYC DOHMH delivering this data back to the primary care providers, the providers can then link the results of their data analysis with the treatment they are offering.

The health department’s Bureau of Epidemiology Services staff are also engaged in the NYC Macroscopic project. The NYC Macroscopic project pertains to a population health surveillance system that uses EHRs to track conditions managed by primary care practices that are important to public health. Using the NYC

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5 The PCIP is a New York City mayoral initiative charged with improving the quality of care through health information technology.
Macroscope, staff will be able to monitor in real-time the prevalence of chronic conditions, such as obesity, diabetes, and hypertension, as well as smoking rates and flu vaccine uptake.

The NYC Macroscope relies on data from the PCIP which helps ambulatory providers in underserved areas adopt EHRs with population management tools to improve the quality of health care for the most vulnerable New Yorkers. For example, when working with de-identified, aggregate data, the research questions, the method of asking questions, and how the data is translated into population-level findings is significant. The NYC Macroscope will be validated by comparing ambulatory EHR data with data from the 2013 NYC HANES. The lessons learned in developing the NYC Macroscope will be useful to other agencies and researchers interested in using EHRs to monitor population health

New York City – Accountable Care Organizations

Agency goals related to health improvements for chronic disease

New York City has a strong commitment to addressing chronic disease. For example, a small primary care provider in Queens, Broadway Internal Medicine, has been highlighted as a “Million Hearts Champion.” The Broadway Internal Medicine practitioners are committed to offering their patients the best primary care. To that end, one of the practice’s main focus points is the control of hypertension based on the high risk of stroke, heart attack, kidney failure, blindness, and even death. Hypertension oftentimes goes undetected, and even when detected, is often not taken care of or controlled.

Since adopting an EHR in 2009, Broadway Internal Medicine has modified the way they deliver care to their patients. To help their patients control their hypertension, Broadway Internal Medicine implemented a new workflow within their EHR that encourages all patients to monitor their blood pressure regularly. The practice also designed into the patient visit the measurement and program tracking including measuring the patients’ waistline in addition to measuring their weight and calculating their waist-to-hip ratio to assess their cardiovascular risk.

In addition to patient care provided by local providers, various ACO models in New York City are dedicated to serving their patient population. Community-based ACOs have been developed by Independent Physician Associations and community-based provider led organizations. Grant-funded services around EHR adoption and achievement of meaningful use of their EHR systems have been secured by NYC DOHMH for these physicians providing services to medically underserved populations. These financial incentives and supports have motivated the provider community to track and document their patients at the population level in order to conduct population based management. In addition, many of the providers have started their practices due to great care and concern for their patient population as a whole.

With a focus on illness prevention and wellness, the Montefiore Pioneer Model ACO is a program that provides beneficiaries of the original Medicare program access to enhanced care coordination programs. Montefiore’s experience coordinating care for patients across multiple care settings led to its designation by Medicare in 2011 as a Pioneer ACO. In addition to Montefiore’s three adult hospitals, its extensive primary care and specialty sites, and the employed and affiliated community-based physicians, the Montefiore ACO includes providers from other health care organizations in the Bronx, Brooklyn, and Staten Island.

Data capture and measurement

In order to manage their practice-based population health initiatives, many ACOs have made investments in health IT and population-based analytic centers. They have applied financial resources to extract and aggregate data from different data sources such as claims data and EHR data. They have developed analytics visualization platforms to sit on top of their population data. These platforms provide views at the administration-, provider-, and practice-level where the ACOs can identify patients with higher risk scores and patients who are contributing to higher costs such as those with repeat hospitalizations. The
ACOs are using the data analysis to coordinate care across settings and to provide quality improvement follow-up with high risk patients.

Providers track and assess data based on the 33 ACO Quality Measures. Of the 33 measures that their performance is based on, several are focused on specific chronic diseases such as cardiovascular disease and diabetes management. To achieve cost savings, information is required to be captured at a detailed level in order to assess compliance with meeting the quality measures. CMS provides quarterly data feeds of claims data. This data is analyzed in order to identify and target changes needed. For example, if a provider has multiple patients with re-hospitalizations, the ACO will work with that provider to tailor their approach in order to improve patient care and to reduce costs. Cost savings can then be reinvested back to the provider practice in order to improve coordinated care.

Data are also extracted from the EHRs. Within the provider network-oriented ACOs (i.e., hospital based ACO where all of their providers are a part of the ACO), they are often using the same EHR. This provides them with the ability to document the care delivered in the same EHR. In these cases, the data is all aggregated and rolled up for more consistent data analytics. For those providers not using an EHR, or for providers on multiple systems within an ACO, the ACO typically engages vendors to aggregate the data across all of the EHRs in their system. The data is manually extracted and then plugged into an aggregator, or staff collects the data by hand.

**Collaboration between Public Health Agencies and Accountable Care Organizations**

Especially now with a renewed focus on population health, the NYC DOHMH has significant, relevant expertise and is viewed as an integral part of the health care delivery system. For example, the Bureau of Chronic Disease Prevention and Tobacco Control has worked with providers to include information in the EHRs to ensure that smoking status is addressed and updated when patients are discharged. Focus groups were held with providers in a variety of settings, and providers were trained on counseling on smoking cessation in addition to coding and billing properly for these services.

Public health generated patient education is provided both in the form of direct messaging targeted at patients using data found in the smoking registries and in the form of educational materials distributed from the providers’ offices. Examples of their Patient/Client/Community Resources include access to prescription discount card, advance directives health bulletin, and health information on: alcohol, breastfeeding, cholesterol, diabetes, healthy diet, hypertension management, medication adherence, physical activity, and tobacco. Provider Training/Resources include health information on: alcohol, breastfeeding, diabetes, medication adherence, overweight and obesity, hypertension management and Self-Blood Pressure Monitoring, and tobacco.

At the time of this project, the Montefiore Medical Center was currently engaged with the NYC DOHMH, Bronx District Public Health Office, on integrating nutrition and physical activity questions into Montefiore’s EHR. Their continued commitment to public health can be seen in this new nutrition and physical activity model for keeping people healthy, not just addressing their illness. Montefiore is collaborating with the NYC DOHMH and community organizations to improve both individual patient outcomes and the health of residents living in the neighborhoods around the hospital’s community-based primary care sites. They describe this initiative as the “medical health care meets public health” collaboration.
which includes implementing interventions promoting healthy eating, physical activity, and smoking cessation neighborhood-wide\textsuperscript{44}. Data will be extracted from the NYC Community Health Survey and used in evaluating the Montefiore’s interventions’ impact on neighborhood health. Providers will collect data from their patients in their EHRs using the same wording for the questions as found in the Community Health Survey. Data will then be compared across the systems to evaluate neighborhood health.

In June 2013, the New York State Medicaid Managed Care Organization partnered with NYC REACH to engage in six-month quality improvement pilots within small practice sites. Six practice sites were chosen based on the following criteria: high-volume managed care organization patient panel, performance on HEDIS/QARR measures, and the transmission of data to PCIP. The pilot sites received monthly quality improvement, billing, coding, and documentation training from NYC REACH staff. Clinical quality measures including blood pressure control, BMI, smoking cessation intervention, cholesterol screening and control, and asthma were chosen because of their alignment with HEDIS/QARR, meaningful use, and Take Care New York measures\textsuperscript{45}. Providers received on-site support and monthly dashboards reflecting their performance on the targeted measures. Two solo provider sites achieved immediate improvement in process measures where workflow changes were implemented directly following training. After receiving training, other sites showed improved documentation related to their clinical quality measures.

Additionally, primary care practices have benefited from a two-year rewards and recognition program called Health eHearts. With funding from the Robin Hood Foundation, this program was created and administered by the PCIP group within the NYC DOHMH. The Health eHearts program rewarded primary care practices for using EHR data in support of their preventive services delivery, including the ABCS. The study targeted clinical preventive services focused on cardiovascular care areas with the maximum potential for saving lives in New York City. Providers received a baseline incentive ($20 in year one, $50 in year two) per delivery of ABCS per patient. Higher incentive amounts ($40 and $80 in Year One, $100 and $150 in Year Two) were applied to “more complex to treat” patients including patients who had a co-morbid chronic condition. Year One included over 400 providers; Year Two included over 300 providers\textsuperscript{46}. The average reward per practice in Year 1 was $29,671. The average reward per practice in Year 2 was $39,900.

As a part of the Medicaid Redesign Delivery System Reform Incentive Payment program, NYC DOHMH provides support for PCMH recognition. Additionally, as New York State engages in a substantial Medicaid redesign, the ACOs are engaged in scaling up their coverage of the Medicaid population. The ACOs are developing projects that will be assessed by the state as they transform the health care system. They will be providing a more holistic approach to patient health looking beyond the health care provided at the provider’s office. For example, ACOs will look at the population health impact of social determinants of health such as access to food and transportation. Public health, too, is focused on reducing disparities and sees the engagement with ACOs as being a natural part of getting them all to the goal of improved health outcomes. Based on past, close-working relationships, public health will be well-positioned to provide ACOs with advice on using a more holistic approach to health care, including assessing social determinants of health.

The PCIP is a New York City mayoral initiative charged with improving the quality of care through health information technology. This is to be achieved by supporting the adoption and use of EHRs among the city’s primary care providers, with a focus on medically underserved populations\textsuperscript{47}. In this role, PCIP is the technical assistance arm for the provider community and provides a variety of services. Particular to the Medicaid Health Homes, PCIP has created and tracks surveillance objectives pertaining to access to care, coverage of care, provider workforce supply, and the use of the health system.

Additionally, PCIP participates on advisory boards, creates overview documents of key milestones and metrics for provider networks, provides assistance leading to providers’ achievement of financially-incentivized milestones, engages in robust community needs assessment activities, informs providers of
ACA requirements and the resulting impact on coverage and outreach, and ensures primary care access is provided for the most vulnerable populations. Providers receive the City Health Information reports tailored to their needs including specific recommendations and best practices based on information obtained from surveys, research, epidemiology studies, and in national policy. Newsletters are created and distributed including information such as: Preparing for Meaningful Use Stage 2, Important NCOA PCMH Deadlines, Quality Improvement Gains in Small Practices, and articles highlighting successful interactions between the provider community and the health department.

PCIP conducts a broad array of EHR-focused activities specific to the capture, display, and analysis of provider data. PCIP can query clinical information input as found in the EHRs, such as diagnoses, blood pressure readings, or prescribed medications, and can specify the population of interest by borough, zip code, gender, or other characteristics. The raw data available to PCIP are accessed, analyzed, and reported out through processes developed by PCIP. Provider dashboards are the main vehicle for returning information on EHR utilization and quality measures to providers. These dashboards are one-page reports that show providers their performance across twenty dimensions of clinical performance compared to a benchmark average of their peers and meaningful use thresholds.

PCIP provides field support for helping providers document their data more accurately, and subsequently, they are seeing higher-quality results. For example, the provider community is using data better both for improving health outcomes and for meeting financial incentives for their practices. As the providers review their dashboards, they can detect when they have either not collected or not entered their data correctly. PCIP provides direct technical assistance when providers call for assistance with their data capture and display. PCIP has also provided online access to directions for ensuring accurate capture and documentation of data. Providers start collecting the data more consistently leading to better capture of elevated blood pressure rates, for example, which leads to better engagement with their patients at risk. Additionally, when the providers start to see how they can keep the patients who frequent the hospital the most out of the hospital, then they start to see the value of the data.

PCIP is currently working with the multi-specialty, hospital-based, and independent-based Medicare shared savings ACOs. PCIP convenes ACOs together in regularly scheduled meetings to share resources. Initial meetings focused on meaningful use incentives that PCIP knew they could help align the ACOs with specific performance measures. Meetings now include sharing best practices, presentations by state and national leaders, and training opportunities. ACOs have the opportunity to learn more about the specific providers within each ACO community, what EHR vendor each provider is working with, what the relevant meaningful use incentives are, how they are doing in meeting the meaningful use criteria, and provide them with PCMH training and designation as they met the requirements.

These successes of working with the medical care community are not without their own set of challenges too. In our interviews, we found providers are not looking to public health to provide them with health content. The providers obtain health information from their colleagues, professional associations, and from resources available to them at their sites. The providers have demonstrated in focus groups that they do appreciate the patient-specific information public health provides. However, additional efforts will be required for public health to be seen as a trusted resource for health content.

Data capture at the level required by public health, such as information on race and ethnicity, is still lacking from the provider community. This type of data is invaluable to public health in order to show disparities. However, capturing this type of data is not often part of a provider’s current workflow. There are also many smaller, independent practices using paper-based systems to capture their data. Transitioning to a new EHR system is having a negative impact on their day-to-day workflow and office operations. These providers are being encouraged and financially incentivized to continue the process of transitioning to an EHR in order for them to realize the great gains that other providers as found in the larger health systems have achieved. Public health is assured that once the provider community captures
data in a more standardized way and starts to fully use the data that there will be more consistency and confidence in the data.

Summary
The relationship between the PHAs and ACOs is well-developed in New York City. There are numerous examples of ongoing data exchange activities and some demonstrations of streamlined data collection efforts and cases where the data quality is improved. Also, some cases show improved health outcomes and improvement in targeting prevention efforts. We were unable to confirm that ACOs feel they will be better prepared and more efficient in treating their constituents. However, case study findings are promising for making a positive future impact within the ACO communities.

The following are examples of data exchange activities and related outcomes.

- **EHR Smoking Status Updates** – The Bureau of Chronic Disease Prevention and Tobacco Control worked with providers to include information in the EHRs to ensure that smoking status is addressed and updated when patients are discharged; providers were trained on counseling on smoking cessation in addition to coding and billing properly for these services.

- **Montefiore’s Impact on Neighborhood Health** – Providers will collect data from their patients in their EHRs, and data will then be compared across the systems to evaluate neighborhood health.

- **New York State Medicaid Managed Care Organization** – They have partnered with PCIP’s regional extension center NYC REACH; these providers receive on-site support and monthly dashboards reflecting their performance on the targeted measures; results include achievement of immediate improvement in process measures and improved documentation related to clinical quality measures.

- **Health eHearts Program** – A study that targeted clinical preventive services focused on cardiovascular care areas with the maximum potential for saving lives in New York City; rewarded primary care practices for using EHR data in support of their preventive services delivery, including the ABCS.

- **Blood Pressure Rates** – As providers review the dashboards created by PCIP, they can detect when they have either not collected or not entered their data correctly; in addition, providers start collecting the data more consistently, leading to better capture of elevated blood pressure rates, for example, which leads to better engagement with their patients at risk.

- **Hospital Readmission Rates** – Data provided by PCIP is allowing the providers to see how they can keep the patients who frequent the hospital the most, out of the hospital, based on comparing data between those patients who are readmitted with data of patients being seen at their next, regularly scheduled appointment date.

Cross-cutting Themes
Arkansas, Iowa, and New York City each presented a unique set of factors related to the connection between PHAs and ACOs within their jurisdictions. Each site has a longstanding history with the clinical services provided by the medical community. However, each entity is at differing developmental stages in relation to the emergence of the ACOs in their community which impacts the relationship between the ACOs and PHAs. In New York City, the NYC DOHMH is providing robust technical assistance to the ACOs in their jurisdiction. Iowa is entering a second phase of requested funding for their SIM grant which will strengthen their early work between the public health and the ACO communities. The Arkansas Department of Health is in the formative stage of working with their ACOs in the region, and plans are in place to continue this early dialogue.
However, these case studies validated our original assumptions, showing common themes across the three agencies.

### Our Assumptions and Common Themes

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<th>New York City</th>
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<td>PHAs and ACOs have overlapping constituents and goals related to meeting the needs of and in improving health outcomes of their constituents.</td>
<td>The Arkansas Department of Health’s goals are outlined in initiatives such as the <em>Healthy People 2020: Arkansas’s Chronic Disease Framework for Action</em> and by the Heart Disease and Stroke Task Force. Similarly, the Arkansas ACOs and medical community have related quality improvement initiatives including the goal of engaging all stakeholders to improve health in the state.</td>
<td>The Iowa Department of Public Health states its goals in <em>Healthy Iowans: Iowa’s Health Improvement Plan 2012-2016</em>, the CDC-funded 1305 State Public Health Actions Plan, and Iowa’s “Set for Life Plan.” The Iowa ACOs and medical community use HEDIS measures at the Medicaid and state level, the value index score, and a risk stratification tool based on clinical risk groups to document and measure the achievement of their goals.</td>
<td>The NYC DOHMH uses the Take Care New York initiative based on Healthy People 2020 to set their goals. The New York City ACOs and medical community use the 33 ACO Quality Measures, HEDIS, and QARR measures to document and measure the achievement of their goals.</td>
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<td>PHAs and ACOs have committed to engaging in similar efforts related to chronic disease programs such as the Million Hearts initiative.</td>
<td>The Arkansas Department of Health uses a chronic disease registry to access the state-wide data sharing network data and engages in the Arkansas Clinical Transformation program. The Arkansas ACOs and medical community engage in PCHM initiatives, have a program focused on decreasing early elective deliveries by 90% over examples of chronic disease programs with the NYC DOHMH include the Take Care New York initiative, NYC REACH, and various provider-level smoking cessation programs. They also provide support for PCMH recognition. The New York City ACOs and medical community have the Montefiore Pioneer Model ACO, Broadway Internal Medicine chronic</td>
<td>The Iowa Department of Public Health engages in the Healthy Iowans program and the 1305 State Public Health Actions Plan. The Iowa ACOs and medical community have the Primary Care Health Home Program, Integrated Health Home Program, ACO Program for Wellness Population, SIM-related program activities, Medicare</td>
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Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

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<tr>
<td>a three-year period, participate in HITArkansas related to ABCS, and started the Arkansas Payment Improvement Initiative programs.</td>
<td>ACO Care Coordinators Program, and the Transitions of Care Program.</td>
<td>disease programs, New York State Medicaid Managed Care Organization partnered activities with NYC REACH, and involvement in the Health eHearts program.</td>
</tr>
</tbody>
</table>

Because of the varied stages of the sites, we could not validate all our hypotheses; however, many emerging projects and practices look promising. The hypotheses we examined included the following themes.

**In cases where PHAs and ACOs exchange data, PHAs and ACOs respectively perceive data collection efforts as streamlined and data quality is improved.**

The difference in the developmental stages of the sites contributes to the variety of engagement seen within the public health and the medical communities. In Arkansas, the public health department and the medical communities leverage each other’s strengths related to specific projects such as PCMH recognition, the engagement of physicians in patient counseling about unhealthy behaviors, discussions about preventative services within the rural community, the creation of data sharing agreements, and the rollout of the Arkansas Payment Improvement Initiative. In Iowa, interactions between public health and the medical communities include the investigation of the ACO structure in Iowa specific to collaboration around diabetes, obesity, and tobacco intervention strategies; ACO development in rural communities; mental health within the health home care structure; and quality improvement initiatives. In New York City, public health engages with the medical communities in many ways including providing educational resources both at the patient and the provider level and securing funding for primary care practice projects, such as the Health eHearts project. In addition, major initiatives provided by PCIP for the ACOs include the creation and tracking of surveillance objectives pertaining to access to care, coverage of care, provider workforce supply, and the use of the health system. PCIP also participates on advisory boards, creates overview documents of key milestones and metrics for provider networks, provides assistance leading to providers’ achievement of financially-incentivized milestones, engages in robust community needs assessment activities, informs providers of ACA requirements and the resulting impact on coverage and outreach, and ensures primary care access is provided for the most vulnerable populations.

**In cases where PHAs and ACOs exchange data, PHAs and ACOs respectively are well-poised for bringing about improved health outcomes.**

Each of the sites uses a variety of measurement systems and tools to capture, monitor, analyze, and report data. For example, many of the sites administer surveys. Some of the sites engage staff such as epidemiologists and evaluators to capture and manipulate the data. Others have IT tools such as websites for entering and accessing data. EHRs are used at varying levels across the sites. However, all expressed an understanding of the significance of being able to capture, analyze, and share data in order to improve the quality of services provided to their patient populations.

**By receiving chronic disease data from ACOs, public health agencies feel they are better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative. By receiving chronic disease data from PHAs, ACOs feel they will be better prepared and more efficient in treating their constituents.**
All three sites also expressed a deep desire to improve health outcomes in their communities. Additionally, other common themes were found within the case study findings. These include dedication to chronic disease programs, engagement with national initiatives such as the Million Hearts initiative, and the use of national guidelines such as Healthy People 2020 in tailoring programs that meet the specific needs of their populations. The common themes also include an understanding and appreciation of the need for PHAs and ACOs to work better together. Many also shared the need to communicate more effectively and the desire for stronger relationships.

Our case study findings do not demonstrate a direct correlation between the exchange of data between PHAs and ACOs in streamlining data collection efforts or in improved health outcomes. In the cases of Arkansas and Iowa, data exchange is in the formative stages, and therefore, we were not able to establish a baseline to measure against. In New York City, there is robust data exchange between the health department and the ACOs. There is early evidence of improved health outcomes, as demonstrated by a decline in hypertension rates as noted at select clinical provider sites, and in decreased smoking rates as measured following targeted interventions. However, there is still much work to be done in New York City to establish the consistent measurement of health outcomes across the city. Additionally, formative initiatives are underway in New York City to tie change in patient behavior to targeted citywide health department and ACO initiatives. Results from these initiatives are pending further health department and ACO action.

Implications

We discovered a number of implications related to policy/leadership, technology and interoperability, funding, and communications.

Policy/Leadership

Each of the three sites was selected because the literature indicated a strong collaborative nature between their PHAs and the ACOs. Strong leadership and supportive policies provided the foundation on which these collaborations were built. Without this leadership, each of these three sites may have been able to develop collaborations, but most likely on a smaller scale. However, by strong leadership and related policies coming from the top down, these initiatives received the overarching support needed to develop robust collaborations. For example, the Arkansas Department of Health has implemented a legislative agenda to support the policy and fiscal needs of chronic disease activities as part of their Million Hearts recommended strategies. In Iowa, recent legislation has led to the implementation of Community Care Teams across the state with plans for these new Community Care Teams to be integrated within the new developing ACO structure in Iowa. In New York City, the PCIP is a New York City mayoral initiative charged with improving the quality of care through health information technology.

Technology and Interoperability

Having a common technology platform and a commitment to share information led to an improvement in access to and analysis of data. In both Iowa and New York City, interviewees commented on the effectiveness of the different entities within an ACO having the same EHR. The Iowa Medicare ACO found having the same EHR at both Mercy Medical Center and the University of Iowa Health Care System has provided for synergies between the two entities. Through the patient portal called “My Chart,” their patients can look up their own clinical notes, schedule appointments, pay bills, and communicate with the care coordinators. In New York City, the providers within the ACO using the same EHR provides them with the ability to document the care delivered in the same EHR. In these cases, the data is all aggregated and rolled up for more consistent data analytics.
Funding

In our interviews, funding was listed as a fundamental requirement for improved collaborations between PHAs and ACOs. Without funding, long-term commitments to evaluation could not be made, and the potential decrease in funding threatened to diminish the ability to engage in technical assistance. However, both Arkansas and Iowa have received SIM grant funding which has contributed to the formative nature of their collaboration between the PHAs and ACOs. New York City has provided grant funding to support services around EHR adoption and achievement of meaningful use for physicians providing services to medically underserved populations. These financial incentives and support have motivated the provider community to track and document their patients at the population level in order to conduct population-based management. NYC DOHMH has also provided primary care practices with funding for the Health eHearts program.

Strategic Communications for Public Health

For public health and clinical care collaborations to succeed, both the ACOs and public health partner organizations agree that PHAs must invest time in getting to know the ACOs and the patient populations they serve. Recommendations for public health included:

- Participate on committees; ask to be invited to meetings.
- Understand that ACOs are addressing “population health”—demonstrate public health’s capabilities in this area or as a “value-add.”
- Learn to speak the language of health care; learn to engage with hospital leadership. Based on a long history of working collaboratively within multiple public-private partnerships, public health can be a valued member in this area.

Conclusion

At the beginning of this project, it was proposed that by PHAs and ACOs partnering with each other, there would be increased access to data, each entity would provide valuable leadership, each would improve learning about their patient populations, and there may be financial benefits realized. These benefits would then lead to improved health outcomes.

Based on the case studies, we found varying levels of data exchange, shared leadership, improved learning, and financial benefits. However, each case shows specific examples of improved health outcomes—such as the Arkansas Clinical Transformation program, the attention given to chronic disease treatment within the mental health and the health home care structures in Iowa, and increasing smoking cessation and decreasing elevated blood pressure rates in New York City.

Also, we proposed that PHAs and ACOs faced many challenges to partnering with each other such as commonly defining terms like “population health,” finding ways to work well together, and role definition.

Based on the case studies, we found the medical communities and the ACOs oftentimes had a much broader approach to population health as they are responsible for such large percentage of their jurisdictions’ population. Universally, the need was expressed for PHAs and ACOs to work together. In some cases, dialogue was just beginning and roles were yet to be identified. In other cases, roles were well-established and entities were working well together. However, even in these cases, reorganizations, shifting priorities, and lack of funding threatened to have a negative impact on the collaborative efforts.

Regardless of the challenges, working together rather than around each other represents the best way forward. Interviewees expressed the notion that by understanding what each entity is engaged in and what the capabilities are, better health outcomes can be achieved. This understanding takes dedication, commitment of time, respectful communication, and focus on the ultimate goal of these collaborations—

39
improved health outcomes. As identified by those interviewed, these elements are appreciated which leads to great potential for the future.
Appendix A: PHA and ACO Interview Telephone Guide

PHA and ACO Interview Telephone Guide
This appendix contains the interview guide used in the multi-session face-to-face site visit and the semi-structured telephone interviews with expert stakeholders engaged in public health as well as clinical health.

Interview Guide

Public Health Agencies and Accountable Care Organizations: Arkansas, Iowa, and New York City Case Studies

Background:
Over 500 Accountable Care Organizations (ACOs) have emerged across the country. The numbers of ACOs are sure to grow as health care reform activities continue to evolve. The major question for public health agencies, particularly local health departments, is what roles they might play in the ACO space. For example, will they be part of a service delivery network, or will they have roles in sharing and analyzing population health data and help to make collective decisions about population health priorities in their area? Each of these roles has important information challenges associated with them. Exploring these challenges will contribute to assisting public health agencies develop strategies for prioritizing, for example, chronic disease activities and initiatives, which would ultimately impact policy, law, and technical indicators for data collection, reporting, and overall use.

The purpose of these interviews is to help us better understand the overlapping missions/goals/objectives of public health agencies (PHAs) and ACOs in relationship to meeting the needs of and in improving health outcomes of their constituents. With this information, we aim to identify the potential synergistic roles between PHAs and ACOs for exchanging data in order to streamline and improve their data collection efforts, and in being well poised for bringing about improved health outcomes. Additionally, we aim to identify how PHAs will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative by receiving chronic disease data from ACOs, and how ACOs will be better prepared to and more efficient in treating their constituents by receiving chronic disease data from PHAs.

To assist with this purpose, we will utilize the Millions Hearts initiative as a national spotlight exemplifying how clinical and public health communities are working together toward a common goal. This program promotes coordinated clinical practices and community interventions for heart disease and stroke prevention through quality measures incorporated in the Medicare Shared Savings Program, coverage of preventative services, and community-transformation grants. Million Hearts includes multiple public and private partners, including the Centers for Disease Control and Prevention, Centers for Medicare and Medicaid Services, and the American Heart Association. We will focus the interviews on the PHAs committed to engaging in efforts related to chronic disease programs such as the Million Hearts initiative as well as ACOs committed to engaging in efforts related to chronic disease treatment and follow-up care.

Interview Objectives:
To gather information related to the following, the extent to which:
1. PHAs and ACOs will streamline and improve their data collection efforts by exchanging data,
2. PHAs and ACOs will be well poised for bringing about improved health outcomes by exchanging data,
3. PHAs will be better prepared to target prevention efforts related to chronic disease programs such as the Million Hearts initiative by receiving chronic disease data from ACOs, and
4. ACOs will be better prepared to and more efficient in treating their constituents by receiving chronic disease data from PHAs.

Interviewee Information:

Name: ____________________________________________
Institution: _______________________________________
Title: _____________________________________________
Email address: ____________________________________
Phone number: ____________________________________

Introduction

Although we do not expect this discussion to involve sensitive topics, your names will be kept confidential. Reports developed from these interviews will not disclose information which could identify you. We will only attribute comments to your general sector (e.g., public health, health care, etc.). Any future written works will be sent electronically to participants. This interview will be recorded, but the audio will never be shared outside of the Public Health Informatics Institute.

Do you have any questions for me before we begin?

Questions to be asked of PHAs:

1) What are your agency’s current goals related to health improvement for chronic disease?
   a) Any specifically for the Million Hearts\(^6\) initiative?

2) How do you capture data related to these initiatives to quantify achieving your goals?
   i) What is the methodology used for capturing this data?
   b) If not, why have you not collected baseline data to date?

3) How do you measure success for chronic disease programs?
   [Prompts: How do you show progression? How do you determine you have met the goals for chronic disease programs such as the Million Hearts initiative?]
   a) If so, what are the defined measures for success?
   b) If not, why do you not have defined measures for success?

4) How have you interacted with ACO(s) related to chronic disease programs?
   a) Has this interaction with ACO(s) streamlined and/or improved your data collection efforts related to chronic disease programs such as the Million Hearts initiative?
      i) If yes, how has this interaction with ACO(s) streamlined and/or improved your data collection efforts?
      ii) If no, why has this interaction with ACO(s) not streamlined and/or improved your data collection efforts?
   b) Has this interaction with ACO(s) better prepared you to target prevention efforts related to chronic disease programs such as the Million Hearts initiative?
      i) If yes, how has this interaction with ACO(s) better prepared you to target prevention efforts?
      ii) If no, why has this interaction with ACO(s) not better prepared you to target prevention efforts?
   c) Has this interaction with ACO(s) poised you well for bringing about improved health outcomes related to chronic disease programs such as the Million Hearts initiative?

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\(^6\) All three sites are engaged in Million Hearts initiatives. However, if there are any interviewees not directly involved in Million Hearts initiatives, we will focus the interview questions primarily on heart disease and stroke prevention for consistency.
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

i) If yes, how has this interaction with ACO(s) poised you well for bringing about improved health outcomes?

ii) If no, how has this interaction with ACO(s) not poised you well for bringing about improved health outcomes?

d) If not, why have you not had interactions with ACO(s) related to chronic disease programs such as the Million Hearts initiative?

[Prompts: If this is the case, request contact information for others we can follow up with who they think/know have had interactions with ACO(s).]

Questions to be asked of ACOs:
1) How does your organization go about managing your practice-based population health?
2) How does chronic disease management play into this approach?
3) What are your organization’s chronic disease-related health improvement goals, objectives, or quality measures?
   a) How do you capture data related to these initiatives to quantify achieving your goals?
      i) What is the methodology used for capturing this data?
   b) If not, why have you not collected baseline data to date?
4) Do you have defined measures for success for your chronic disease initiatives?
   [Prompts: How do you show progression? How do you determine you have met the goals for your chronic disease initiatives?]
   a) If so, what are the defined measures for success?
   b) If not, why do you not have defined measures for success?
5) How have you interacted with PHAs related to your chronic disease initiatives?
   a) Has this interaction with PHAs streamlined and/or improved your data collection efforts related to your chronic disease initiatives?
      i) If yes, how has this interaction with PHAs streamlined and/or improved your data collection efforts?
      ii) If no, why has this interaction with PHAs not streamlined and/or improved your data collection efforts?
   b) Has this interaction with PHAs better prepared you to treat and provide follow-up care to your constituents related to your chronic disease initiatives?
      i) If yes, how has this interaction with PHAs better prepared you to treat and provide follow-up care to your constituents?
      ii) If no, why has this interaction with PHAs not better prepared you to treat and provide follow-up care to your constituents?
   c) Has this interaction with PHAs poised you well for bringing about improved health outcomes related to your chronic disease initiatives?
      i) If yes, how has this interaction with PHAs poised you well for bringing about improved health outcomes?
         (1) If no, how has this interaction with PHAs not poised you well for bringing about improved health outcomes?
   d) If not, why have you not had interactions with PHAs related to your chronic disease initiatives?
   [Prompts: If this is the case, request contact information for others we can follow up with who they think/know have had interactions with PHAs.]

Thank you for participating in this telephone interview. Should you have any questions or would like to share additional information, please contact: Anita Renahan-White: arenahan-white@taskforce.org/404-592-1409.
Appendix B: Public Health Partner Organizations Interview Questions

This appendix contains the questions used in the in-person March 4-5, 2014, Chronic Disease Surveillance Workgroup Meeting and in the semi-structured telephone interviews with the public health partner organizations.

We would like to address the following questions with you:

1. What is your organizations’ engagement with chronic disease programs such as the Million Hearts initiative, and
2. Where does your organization see the best overlap/synergy between PH and ACOs in relationship to data exchange with chronic disease surveillance, prevention, treatment, and follow-up care?
Endnotes


v Ibid.

vi Ibid.

vii National Association of County and City Health Officials telephone interview, conducted 6/13/14.

viii Centers for Disease Control and Prevention telephone interview, conducted 6/24/14.


x National Association of County and City Health Officials telephone interview, conducted 6/13/14.


xii Centers for Disease Control and Prevention telephone interview, conducted 6/24/14.


xiv Ibid.

xv Ibid.


xviii Public Health Informatics Institute Chronic Disease Surveillance Workgroup Meeting, conducted 3/4-3/5/14.
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations


xx Ibid.


xxii Centers for Disease Control and Prevention telephone interview, conducted 6/24/14.


xxxiv Ibid.
Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations

xxxv Ibid.
xxxvi Ibid.


xliii Ibid.


Informatics at the Intersection of Public Health Agencies and Accountable Care Organizations


Ibid.


Singer, Jesse. The New York City Department of Health and Mental Hygiene. “Primary Care Information Project.” May 2014.


Ibid.

Singer, Jesse. The New York City Department of Health and Mental Hygiene. “Primary Care Information Project.” May 2014.

Centers for Disease Control and Prevention telephone interview, conducted 6/24/14.

National Association of County and City Health Officials telephone interview, conducted 6/13/14.