Executive Summary

Health information technology (HIT) is a crucial element of health care delivery system reform. The meaningful use of electronic health records (EHRs) and other HIT has the potential to improve hospital efficiency, safety, quality, and access. With the help of financial incentives from the Medicare and Medicaid EHR Incentive Programs, our nation’s safety net hospitals have made considerable progress acquiring, implementing, and upgrading EHR systems. Among the National Association of Public Hospitals and Health Systems (NAPH) membership, 97 percent plan to participate in both the Medicare and Medicaid EHR Incentive Programs. However, NAPH members face significant challenges meeting meaningful use requirements.

SAFETY NET HOSPITAL HIT IMPLEMENTATION CHALLENGES

A quantitative survey and qualitative interviews with a representative sample of NAPH members revealed the unique challenges safety net hospitals face in implementing HIT. Underlying these challenges are two inherent factors that make certain aspects of meaningful use especially difficult for NAPH members.

1. Patient Populations
Safety net hospitals serve vulnerable populations that often have limited technological literacy and insufficient access to technology. Meaningful use measures that hold providers accountable for patients viewing and downloading their health information could unfairly punish safety net providers for fulfilling their mission to serve the most vulnerable among us. Additional measures that rely heavily on the health literacy of a patient population also concern NAPH members.

2. Large Systems with Limited Resources
Safety net hospitals have limited resources with which to invest in HIT. Across the membership, incentive payments vary greatly and generally only cover between 30 and 50 percent of implementation costs. In addition, HIT staffing markets are very competitive in many urban areas, and safety net hospitals struggle to compete financially for the personnel necessary to implement and maintain HIT systems.

NAPH members also have expansive outpatient clinics and hospital systems, which make systemwide implementation within the EHR incentive program timelines challenging. Limited resources often do not allow for simultaneous implementation and staff training across a multiple-hospital system. As a result, many NAPH members are taking a multistep approach to implementation, starting with one hospital, one inpatient unit, or a group of clinics and then gradually expanding throughout the whole system over 1 to 3 years.

POLICY IMPLICATIONS AND RECOMMENDATIONS

This brief also outlines policy implications and recommendations for the Centers for Medicare & Medicaid Services (CMS) as it continues to refine the EHR incentive programs. The following recommendations are included:
On average, 58 percent of patients seen by NAPH member hospitals are racial or ethnic minorities. And more than 100 languages are spoken by patients at NAPH member hospitals.

Introduction

The National Association of Public Hospitals and Health Systems (NAPH) represents the nation’s major metropolitan-area safety net hospitals and health systems. Our members share the common mission of providing access to high-quality health care for all patients, regardless of ability to pay. They are critical sources of care for low-income and vulnerable patients in their communities—about half of all the care NAPH member hospitals provide is for Medicaid and uninsured patients. Our members represent only 2 percent of acute care hospitals in the United States, but deliver 20 percent of the nation’s uncompensated care.

NAPH members provide low-income and uninsured patients a full range of services, from primary care to essential specialized services such as trauma and burn care. Roughly three-quarters of NAPH member hospitals operate a level 1 or 2 trauma center, and almost half offer burn care services. In 2009 alone, NAPH members saw more than 7 million emergency department (ED) visits, one-third of which were for uninsured patients. In addition, NAPH members average almost 3.6 times as many outpatient visits and 2.1 times as many outpatient surgeries as the hospital industry average.\(^1\)

NAPH members predominantly serve low-income, minority patients who are uninsured or covered by public programs. Of the total inpatient services provided by NAPH members, 18 percent are to uninsured patients, another 36 percent to Medicaid beneficiaries, and 24 percent to Medicare recipients. On average, 58 percent of patients seen by NAPH member hospitals are racial or ethnic minorities. And more than 100 languages are spoken by patients at NAPH member hospitals.\(^2\)

Despite these circumstances, NAPH members are working diligently to become meaningful users of electronic health records (EHRs) through investments in health information technology (HIT). But safety net providers face unique challenges to achieving meaningful use. And it is essential that policymakers understand these obstacles, as well as safety net progress, to ensure our members and their patients are not left behind in the move to meaningful use. This brief will explore these issues and make recommendations to the Centers for Medicare & Medicaid Services (CMS) to better facilitate safety net hospital uptake of HIT.

EHR Incentive Program Overview

HIT is an important aspect of integrated care. It improves quality by enhancing communication and giving...
providers a more complete view of patient health, enabling them to manage risk and disease. It improves safety and access for patients and empowers them to take their health into their own hands. And it helps hospitals increase efficiency, improving cost-savings.

Some NAPH members were very early adopters and have been using HIT for decades, while others have only recently implemented this technology. But most members operate on thin margins that don’t allow for large-scale investments in HIT and the infrastructure necessary to support these sophisticated systems. NAPH members need government support to build the HIT foundations that will enable innovation and transformation. To help facilitate these efforts, the Health Information Technology for Economic and Clinical Health Act (HITECH Act), part of the 2009 American Recovery and Reinvestment Act (ARRA), provides financial incentives via the Medicare and Medicaid programs for hospitals and eligible providers (EPs) to invest in HIT.

Hospitals that meet meaningful use requirements have been eligible for incentive payments since federal fiscal year (FFY) 2011. Hospitals that meet meaningful use requirements by FFY 2013 will be eligible to receive Medicare EHR Incentive Program payments for up to 4 consecutive years. Estimates show that NAPH member hospitals that earn 4 years of payments will receive total incentive payments ranging from $0.9 million to $7 million, depending on the size of their Medicare patient population.\(^3\)

Hospitals whose patient population is at least 10 percent Medicaid patients may also qualify for HIT incentive payments through their state Medicaid program. Unlike the Medicare incentive program, hospitals can qualify for their first year of Medicaid EHR Incentive Program payments without meeting meaningful use requirements. Instead, hospitals can attest to working to adopt, implement, or upgrade (AIU) certified EHR technology. These hospitals must then meet meaningful use requirements in their second year of participation, which does not have to be the year immediately following their attestation. And, unlike Medicare EHR incentive payments, Medicaid payments do not have to be distributed in consecutive years. Medicaid payments are available for 3 to 6 years, depending on how the state chooses to distribute them. Estimates show that NAPH member hospitals that qualify for Medicaid incentive payments by FFY 2016 will receive payments ranging from $0.2 million to $13.3 million, depending on the size of their Medicaid patient population.\(^4\)

EPs, including physicians, can also qualify for HIT incentives. EPs can choose to qualify through Medicare or Medicaid, but not both. The program excludes hospital-based providers who bill more than 90 percent of their time in the inpatient or ED setting. EPs who work in the outpatient setting are not considered hospital-based and may participate in an EHR incentive program. To qualify for Medicaid incentives, 30 percent of an EP’s volume must consist of Medicaid patients, except for pediatricians, who have a 20 percent patient volume threshold.

Along with providing incentive payments to hospitals and EPs, ARRA also imposes Medicare payment reductions in 2015 for hospitals and EPs that have not met meaningful use requirements. For those providers who haven’t placed an emphasis on HIT, avoiding penalties could prove to be the catalyst for change.

Where Are We Now?

In 2010, CMS released its final rule for stage 1 meaningful use requirements for the Medicare and Medicaid EHR Incentive Programs for hospitals and EPs. To achieve stage 1 of meaningful use, hospitals must meet 14 core, or required, measures. Hospitals must also meet 5 menu measures, which they can select from among a set of 10. As of February 2012, 43 states have launched their Medicaid incentive programs, and 38 states have made payments to hospitals.\(^5\)

Also in February 2012, CMS released a proposed rule outlining stage 2 meaningful use requirements. The proposals are based on recommendations made by the advisory group to the Office of the National Coordinator for HIT. As CMS prepares to roll out stage 2 of the Medicare and Medicaid EHR Incentive Programs, the following questions have become paramount:
1. What are the current and planned levels of safety net hospital participation in the EHR incentive programs?

2. What HIT implementation challenges have NAPH members faced? How have NAPH members overcome these challenges?

3. What progress have NAPH members made in meeting meaningful use stage 1 measures? Which measures have been the most challenging?

4. Which proposed meaningful use stage 2 measures do NAPH members find the most challenging?

5. What policy recommendations do NAPH members have for CMS?

To answer these questions, in November and December 2011, NAPH surveyed its member hospitals on meaningful use requirements and received responses from 70 members, or 66 percent of the membership. Most respondents were chief information officers (CIOs) (51 percent), chief medical informatics officers (CMIOs) (20 percent), and information technology (IT) directors or managers (17 percent). Respondents represented the average NAPH facility in terms of bed size (approximately 400 beds) and region. NAPH followed this quantitative survey with in-depth qualitative interviews with CIOs, CMIOs, and IT directors from 10 member hospitals to better understand HIT implementation progress and challenges.

**Snapshot of Safety Net Hospital EHR Incentive Program Participation**

As shown in Figure 1, all surveyed NAPH member hospitals are participating or plan to participate in the Medicaid EHR Incentive Program, and all but one plan to participate in the Medicare EHR Incentive Program. This level of participation compares favorably to the 74 percent of all hospitals nationally that plan to participate in at least one program. However, NAPH member hospitals are more likely than all hospitals nationally to be unable to meet meaningful use requirements for the first time until FFY 2013.\(^6\)

While most NAPH member hospitals will begin participating in an EHR incentive program in FFY 2012 or 2013 (as shown in Figure 2), they are coming from diverse starting points. Some hospitals started HIT implementation from scratch within the past few years. Others have had computerized inpatient and ED systems for decades, but have not necessarily achieved the government’s definition of meaningful use.

Many NAPH members will begin with Medicaid attestation and then move to both Medicaid and Medicare program participation in their second year. Some of the hospitals that received initial Medicaid AIU payments in FFY 2011 plan to take advantage of the Medicaid program’s flexibility and meet meaningful use stage 1 requirements for the Medicare and Medicaid programs for the first time in FFY 2013.

Unfortunately, some NAPH members have not been able to take advantage of Medicaid program AIU payment flexibility. Of NAPH members, 15 were not able to receive Medicaid AIU funds in FFY 2011, as their states were either not yet operating an incentive program.
or not yet distributing funds. Several of these members have already met meaningful use requirements and were able to receive Medicare EHR Incentive Program payments in FFY 2011. At least 10 other NAPH members did not readily receive Medicaid payments from their states after successful AIU attestation. Some waited as long as 10 months.

**Safety Net Hospital HIT Implementation Challenges**

While many NAPH members are well on their way to becoming meaningful users of EHRs, unique safety net challenges to meeting program requirements remain. NAPH members’ vulnerable patient populations and large system size combined with a lack of resources are the underlying factors that create real, tangible challenges to meaningful use. These challenges are categorized first into general obstacles to HIT implementation, and then specific challenges related to the core and menu measures for meeting stages 1 and 2 of meaningful use. More detailed information on HIT implementation and measure-specific challenges is included in Figures A.1 and A.2 in Appendix A.

**GENERAL HIT IMPLEMENTATION CHALLENGES**

**Challenge #1: Capital Costs Including Acquisition and Maintenance**

For all NAPH members, the costs of implementing comprehensive HIT systems, including all capital and staffing costs, far outweigh combined Medicare and Medicaid incentive payments. Incentive payments vary greatly across the membership and generally only cover between 30 and 50 percent of implementation costs. NAPH members with large Medicare populations (i.e., more than 30 percent of all patients) generally expect to receive greater combined incentives. Hospitals with relatively few Medicare patients (i.e., less than 10 percent of all patients) are forced to rely almost exclusively on Medicaid payments.

Despite the lack of incentives to cover full costs, safety net hospitals are still moving forward with meaningful use and finding solutions to meet the tight timelines. Many NAPH members that cannot afford additional equipment, such as personal computers for individual providers, are trying innovative new approaches. For example, using virtual desktops with session preservation/roaming capabilities allows providers to update a patient record on one computer, and then log on to a different computer to find the information automatically preserved and loaded. This system enables providers to continue with documentation where they left off, as opposed to searching anew for a patient’s record every time they move to a different shared workstation.

**Challenge #2: Recruiting and Retaining Adequate HIT Personnel**

All surveyed NAPH member hospitals are participating or plan to participate in the Medicaid EHR Incentive Program, and all but one plan to participate in the Medicare EHR Incentive Program.
modify, and maintain complex systems, as well as train providers to use these systems effectively. Several hospitals originally relied primarily on existing employees who had HIT experience, but quickly shifted gears and hired recent graduates for many HIT positions. However, HIT staffing markets are very competitive in many urban areas, and safety net hospitals struggle to compete financially.

To mitigate this challenge, some NAPH members have developed comprehensive employment strategies, including well-defined vertical career paths for HIT employees. For example, one hospital created lower-level support/help desk positions to handle less complex technical issues and work with providers on relatively simple changes to EHR content. More advanced positions were created to design and implement upgrades to new HIT modules. Most new employees are hired at the lower-level positions, given clear career growth goals, and promptly promoted when they demonstrate the required competencies for the next level.

Another successful strategy used by NAPH members has been to develop partnerships with local universities with master’s programs in health informatics. Through these programs, several members have found an abundance of experienced clinicians and IT professionals seeking a second career in health informatics. Other strategies, which have seen mixed results, include recruiting from the internal nursing staff or relying primarily on consultants.

**Challenge #3: Workflow and Productivity Challenges**

Changes to physician workflow and productivity have led to some clinician resistance to implementation. For example, some NAPH members have not had sufficient time or
resources to provide the kind of intensive physician training needed to successfully change workflows. One hospital needed 12–23 hours of training per physician to ensure proper data entry practices, such as accurate documentation at the appropriate time, were mastered. This comprehensive training is a significant challenge for large safety net hospitals with limited resources that often work with thousands of physicians. To combat this challenge, some hospitals have effectively used residents and other newer physicians who were initially trained on electronic records as change leaders.

Even with sufficient training, these workflow changes have caused physician productivity to decline up to 30 percent. Many physicians have taken 6 to 9 months to regain initial productivity levels. These productivity declines are hard to sustain with provider practices that are already reimbursed at extremely low levels. Increasing levels of clinical integration, with more financial alignment between hospitals and physicians, have provided support to physicians during short-term declines in productivity.

Challenge #4: Meeting All Meaningful Use Measures Within the Implementation Timeline

Most NAPH members do not have the resources to implement HIT across their expansive outpatient networks and hospital systems all at once. To overcome these challenges, many NAPH members are taking a multistep approach to implementation, starting with one hospital, one inpatient unit, or a group of clinics and then gradually expanding throughout the whole system over 1 to 3 years. Alternatively, some members are taking a phased implementation approach by department or function across the whole system, starting with registration, pharmacy, and nursing documentation for all hospitals and clinics. These hospitals then plan to move to clinical documentation for physicians and computerized provider order entry (CPOE) in the next phase.

While most physicians agree that capturing problem lists is their responsibility, some have had no previous experience capturing this information in this format. Instead, the type of information included in problem lists has been captured from many different sources (e.g., history and physicals notes, progress notes, electronic lists). Several members have used younger physicians and residents as champions in changing these workflow processes.

In addition, members that have successfully met this requirement have cited one or two advanced patient portal vendor products as facilitators. Members that do not have these vendor products have struggled to meet this requirement.

Core Measure: Maintaining Up-to-Date Problem Lists

While a recent Healthcare Information and Management Systems Society (HIMSS) Analytics analysis shows that three times as many NAPH members had implemented clinical documentation in 2011 compared to 2008, significant workflow challenges remain. While most physicians agree that capturing problem lists is their responsibility, some have had no previous experience capturing this information in this format. Instead, the type of information included in problem lists has been captured from many different sources (e.g., history and physicals notes, progress notes, electronic lists). Several members have used younger physicians and residents as champions in changing these workflow processes.

In addition to standardized collection, keeping problem lists up to date has also been a significant challenge for some hospitals. While primary care physicians and specialists who manage a panel of patients have been generally very good at keeping these lists current, problem lists have been more challenging for ED physicians. This issue is important because ED visits and observational visits and inpatient stays that originally...
Despite the lack of incentive payments to cover full HIT implementation costs, safety net hospitals are moving forward with meaningful use and finding solutions to meet the tight timelines.

present in the ED make up a larger share of the visits that are included in this meaningful use measure at safety net hospitals.

Core Measure: Using CPOE for Medication Orders
While the recent HIMSS Analytics analysis also shows that more than two times as many NAPH members had implemented CPOE in 2011 compared to 2008, CPOE remains a challenge for many NAPH members. CPOE for medications has been especially challenging for safety net hospitals that have recently implemented HIT for the first time. Because physicians at some hospitals are used to nurses entering medication orders, they have struggled with workflow changes. More technologically savvy residents have helped implement these workflow changes.

Core Measure: Reporting Hospital Clinical Quality Measures (CQMs) to CMS or States
Accurately collecting CQMs in a large system with limited resources is extremely challenging. Some members have faced significant challenges training clinicians to capture the needed information in the correct place within the electronic record so that the CQM is accurate and reliable. Members have had to provide comprehensive clinician training and detailed specification of where the user enters measure information in the EHR.

Menu Measure: Performing Medication Reconciliation for Transitions of Care for Admitted Patients
As safety net providers see many low-income patients who do not have continuity of care outside of the safety net, a transferable medical record, or a consistent private provider in the community, manual medication reconciliation during transitions of care has long been a challenge with these patients. While safety net hospitals are working hard to improve medication reconciliation, accurately reconciling medications electronically is an even greater challenge. For example, one NAPH member—who has been relatively successful as an early adopter of HIT—has struggled to get medication reconciliation for transitions of care above the 50 percent threshold. While it is making tremendous progress, this hospital believes that this measure is more challenging for providers who serve vulnerable patient populations.

Menu Measures: Exchanging Data With Public Health Agencies and Immunization Registries
Some NAPH members have struggled with the three stage 1 measures that require a test of information exchange between the hospital and a public health agency or immunization registry. Specifically, they have had difficulty with the lack of adequate interfaces for electronic exchange of patient data. One NAPH member has been using the same interface engine

Despite the lack of incentive payments to cover full HIT implementation costs, safety net hospitals are moving forward with meaningful use and finding solutions to meet the tight timelines.
for electronic exchange for more than 10 years, is following all of the required interface standards, and is satisfying all of its state’s immunization registry requirements. Nevertheless, this hospital, which has extremely limited resources, has been forced to buy another product because its vendor has decided not to certify its interface for meaningful use. Because there are no allowances made for legacy systems, this hospital, which has met four other menu measures, has been forced to delay attesting for meaningful use for at least 1 year. Another NAPH member that has been successfully exchanging data with its public health agency for several years is still waiting on its vendor to complete the interface certification process.

**New Core Measure: Electronically Submit a Summary of Care Record to the Receiving Provider or Post-Acute Facility**

Many NAPH members offer comprehensive services within their own systems, leading to a relatively low transfer volume. In addition, nursing homes and other post-acute facilities have much lower EHR adoption rates compared to hospitals and ambulatory clinics. Therefore, in many NAPH member communities, there may be relatively few post-acute facilities that have the ability to receive electronic information from NAPH members. Currently, only one-quarter of NAPH hospitals are linked electronically to a post-acute provider through their EHR.

**Policy Implications/Recommendations**

Based on the general HIT implementation and measure-specific challenges outlined in this brief, NAPH presents the following policy implications and recommendations for CMS and other stakeholders to consider going forward:

**Implication/Recommendation #1:** Medicaid program AIU flexibility is paramount to maximizing safety net hospital participation.

Allowing hospitals to attest to AIU and delay demonstration of meaningful use for an additional year (or years) enables financially vulnerable safety net hospitals to optimize HIT incentives by receiving

NAPH members are taking a multistep approach to HIT implementation, starting with one hospital, one inpatient unit, or a group of clinics and then gradually expanding throughout the whole system over 1 to 3 years.
their first year of Medicaid incentive payments up front. This flexibility is particularly important for safety net hospitals that are implementing comprehensive EHRs for the first time or doing a multistep implementation across a multiple-hospital system. Many of these hospitals may not be ready to meet meaningful use requirements until FFY 2013 or later, but were able to receive upfront payments in FFY 2011 to fund HIT implementation.

However, the success of the Medicaid program is highly dependent on all state Medicaid programs being fully functional and distributing funds in a timely manner. For safety net hospitals with extremely limited resources, any delay in payment creates a significant burden for HIT implementation. Although the majority of states have been successful in launching their programs and efficiently paying providers, the Medicaid EHR Incentive Program has yet to reach its full potential in some states. To ensure program success, all state Medicaid programs should be encouraged to release data on program registration and fund distribution at the hospital and provider level. Transparency is crucial for improving performance and reducing variation in any initiative.

Implication/Recommendation #2: CMS should expand the timeline for meaningful use stage 1 to give hospitals more flexibility. In its proposed rule for stage 2, CMS recommends delaying stage 2 requirements for hospitals that first successfully attest for meaningful use in FFY 2011. These hospitals would now have until FFY 2014 to meet stage 2 requirements. Many safety net hospitals will not begin participation until FFY 2012 or 2013 and will be implementing EHR systems across large health systems. CMS should allow all hospitals three years in between stages 1 and 2, regardless of when they begin participation. This flexibility would help ensure safety net systems are not unfairly disadvantaged for being larger health systems with fewer resources.

Implication/Recommendation #3: CMS should use caution when increasing stage 1 thresholds for stage 2. Because EHR incentives only make up 30 to 50 percent of implementation costs, many NAPH members have invested millions of dollars of their own resources in building EHR systems. In addition, because of a lack of resources, many safety net hospitals are struggling to recruit and retain sufficient HIT staff. To make further efforts sustainable, stage 2 must seamlessly build on stage 1. Specifically, thresholds for stage 1 core measures should only be increased for stage 2 when there is evidence that a wide range of hospitals have been able to meet current thresholds for stage 1.

Implication/Recommendation #4: CMS should retain the flexibility in the menu measures for stage 2. Without the flexibility to choose 5 of the 10 measures in the menu set, many...
hospitals, especially safety net hospitals in large systems, would have to further delay meeting meaningful use requirements. Multistep implementation across large health systems creates process and timeline challenges, and many menu measures are highly dependent on which EHR system a hospital is using. CMS should continue the menu set flexibility for Stage 2. In addition, all newly proposed measures for stage 2 should become optional menu measures.

Implication/Recommendation #5: CMS should use caution when evaluating progress on current menu measures based on data from early adopters from stage 1. To date, data on hospitals and EPs that have attested to meaningful use rely heavily on early adopters, and are not representative of safety net providers. This is particularly true for menu measures, many of which have extremely high deferral rates even among early adopters. Stage 1 menu measures should only be moved to the core set of measures for stage 2 when there is evidence that a wide range of hospitals have met these menu measures for stage 1.

Implication/Recommendation #6: CMS should not hold hospitals and providers accountable for patient activity outside the hospital or provider office for stage 2. Because of the patient populations they see, any measures that require patients to access their health information online present concern for NAPH members. These types of measures should allow for sufficient flexibility so as not to punish providers who see our most vulnerable patient populations. Rather than measure whether patients and families view and download information, the measure should initially be limited to whether the patient is offered and receives electronic information. The provider cannot force the patient to actually view or download the information, and many low income patients lack access to download this information.

Implication/Recommendation #7: Requiring electronically exchanging patient information among providers should be limited in scope for stage 2. Many NAPH members offer comprehensive services within their own systems and have low patient transfer rates. Members also practice in communities with low EHR adoption rates among post-acute care providers, and they are located in urban areas that are dominated by one EHR vendor. All of these factors would make any requirement to exchange patient information with non-affiliated providers using a different EHR vendor product extremely difficult to meet. CMS should not include provider-to-provider exchange requirements with providers not affiliated with the hospital for meaningful use stage 2.

CMS should allow all hospitals three years in between meaningful use stages 1 and 2, regardless of when they begin participation.
Implication/Recommendation #8: CMS should delay electronic CQM reporting until this reporting is feasible for all hospitals.
Accurately collecting and electronically reporting CQMs for a large system with limited resources will be extremely challenging. It is imperative that safety net hospitals be included in any electronic reporting pilots for CQMs so CMS can gain a true understanding of the safety net-specific challenges. Mandatory CQM electronic reporting should be delayed until CMS and states can successfully demonstrate that this is a feasible option for all hospitals.

Implication/Recommendation #9: Electronically exchanging patient information with public health departments should remain flexible for stage 2.
Unfortunately, many safety net hospitals have not been able to electronically exchange patient information with public health departments because of vendor interface certification issues. CMS should allow any test—successful or unsuccessful—to meet these measures or delay these measures from becoming required, core measures for stage 2 meaningful use.

Conclusion
The HIT implementation experiences of NAPH member hospitals to date provide us with important lessons going forward. While NAPH members are making tremendous progress acquiring, implementing, and upgrading HIT technology, significant safety net-specific challenges to meeting Medicare and Medicaid meaningful use requirements remain. It is important that federal stakeholders appreciate the challenges described in this policy brief and seriously consider our policy recommendations so that safety net hospitals and the vulnerable populations that they serve are not left behind in the move to HIT and meaningful use.
Notes

1. 2010 NAPH Characteristics Survey.
2. Ibid.
3. NAPH analysis of data provided by NAPH members on charity care charges, total gross charges, discharge volumes, and inpatient days. Note: This analysis assumes that hospitals will qualify in FFY 2011, 2012, or 2013 to receive maximum incentive payments.
4. NAPH analysis of data provided by NAPH members on charity care charges, total gross charges, discharge volumes, and inpatient days. Note: This analysis assumes that hospitals will qualify before FFY 2016 to receive maximum incentive payments.
### FIGURE A.1 | NAPH Member Challenges to Meeting Meaningful Use Stage 1

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge of meeting all meaningful use measures within implementation timeline</td>
<td>3.91</td>
</tr>
<tr>
<td>Recruitment and retention of adequate HIT personnel</td>
<td>3.17</td>
</tr>
<tr>
<td>Capital costs including acquisition and maintenance</td>
<td>3.11</td>
</tr>
<tr>
<td>Resistance to implementation</td>
<td>2.66</td>
</tr>
<tr>
<td>Lack of vendor capacity</td>
<td>2.14</td>
</tr>
</tbody>
</table>

**SOURCE** 2011 NAPH HIT Survey  
**NOTES** NAPH members were asked to rank each challenge from 1 to 6, with 1 representing an insignificant challenge and 6 representing a significant barrier to meeting meaningful use stage 1. Each challenge had to be assigned a unique ranking.
FIGURE A.2  Anticipated/Encountered Challenging Stage 1 Core Measures for NAPH Members

- Report hospital clinical quality measures to CMS or States: 8.57
- Use CPOE for medication orders: 5.66
- Perform at least one test of the capability to exchange clinical information among providers electronically: 5.40
- Maintain up-to-date problem lists: 5.06
- Provide patients with an electronic copy of their health information upon request: 4.11
- Provide patients with an electronic copy of discharge instructions upon request: 2.83
- Maintain up-to-date active medication lists: 2.74
- Perform or update security risk assessment and address deficiencies: 2.49
- Record smoking status for patients 13 years old and older: 2.31
- Record and chart changes in vital signs (including height, weight, BP, BMI, growth chart): 1.89
- Implement one clinical decision support rule and have ability to track compliance with that rule: 1.46
- Record demographics as structured data: 1.37
- Maintain up-to-date medication allergy lists: 0.69
- Implement drug-drug and drug-allergy interaction checking: 0.43

SOURCE: 2011 NAPH HIT Survey
NOTES: NAPH members were asked to rank the five most challenging meaningful use stage 1 measures, from 1 to 5. These rankings were then adjusted positively by a factor of three to better demonstrate comparative distribution in a graphical format.
# Appendix

## FIGURE A.3  NAPH Member Implementation Timeline for Stage 1 Core Measures

<table>
<thead>
<tr>
<th>Core Measure</th>
<th>Percentage</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform or update security risk assessment and address deficiencies</td>
<td>33%</td>
<td>52%</td>
<td>12%</td>
<td>3%</td>
<td></td>
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<tr>
<td>Perform at least one test of the capability to exchange clinical information among providers electronically</td>
<td>36%</td>
<td>55%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide patients with an electronic copy of discharge instructions upon request</td>
<td>36%</td>
<td>55%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide patients with electronic copy of their health information upon request</td>
<td>37%</td>
<td>51%</td>
<td>9%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Report hospital clinical quality measures to CMS or States</td>
<td>42%</td>
<td>45%</td>
<td>9%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Implement one clinical decision support rule and have ability to track compliance with that rule</td>
<td>42%</td>
<td>48%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record smoking status for patients 13 years old and older</td>
<td>45%</td>
<td>42%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record and chart changes in vital signs (including height, weight, BP, BMI, growth chart)</td>
<td>48%</td>
<td>39%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain up-to-date medication allergy lists</td>
<td>52%</td>
<td>39%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain up-to-date active medication lists</td>
<td>55%</td>
<td>39%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain up-to-date problem lists</td>
<td>61%</td>
<td>30%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Record demographics as structured data</td>
<td>61%</td>
<td>30%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement drug-drug and drug-allergy interaction checking</td>
<td>61%</td>
<td>34%</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use CPOE for medication orders</td>
<td>67%</td>
<td>30%</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Currently have this functionality/ability
- Will be implemented by the end of FFY 2012
- Will be implemented by the end of FFY 2013
- Will be implemented by the end of FFY 2014

**SOURCE:** 2011 NAPH HIT Survey

**NOTES:** For each meaningful use stage 1 core measure, NAPH members were asked to specify their implementation timelines.
FIGURE A.4  NAPH Member Implementation Timeline for Stage 1 Menu Measures

- Perform at least one test of EHR’s capability to submit electronic surveillance data to public health agencies: 21% currently have, 42% will be implemented by the end of FFY 2012, 18% will be implemented by the end of FFY 2013, 6% will be implemented by the end of FFY 2014, 6% will be implemented by the end of FFY 2015, 6% will be implemented in FFY 2016 or later.
- Perform at least one test of EHR’s capability to submit electronic lab results to public health agencies: 27% currently have, 45% will be implemented by the end of FFY 2012, 18% will be implemented by the end of FFY 2013, 9% will be implemented by the end of FFY 2014, 3% will be implemented by the end of FFY 2015.
- Provide a summary of care record for transitions of care: 30% currently have, 33% will be implemented by the end of FFY 2012, 27% will be implemented by the end of FFY 2013, 3% will be implemented by the end of FFY 2014, 3% will be implemented by the end of FFY 2015.
- Use EHR to identify and provide patient-specific education resources: 33% currently have, 42% will be implemented by the end of FFY 2012, 18% will be implemented by the end of FFY 2013, 6% will be implemented by the end of FFY 2014.
- Perform at least one test of EHR’s capability to submit electronic data to immunization registries: 36% currently have, 45% will be implemented by the end of FFY 2012, 18% will be implemented by the end of FFY 2013.
- Record advanced directives for patients 65 or older: 42% currently have, 42% will be implemented by the end of FFY 2012, 15% will be implemented by the end of FFY 2013.
- Perform medication reconciliation for transitions of care in which patient is admitted to the hospital: 42% currently have, 33% will be implemented by the end of FFY 2012, 15% will be implemented by the end of FFY 2013, 3% will be implemented by the end of FFY 2014, 6% will be implemented by the end of FFY 2015.
- Generate at least one report listing patients with a specific condition: 52% currently have, 30% will be implemented by the end of FFY 2012, 12% will be implemented by the end of FFY 2013, 3% will be implemented by the end of FFY 2014, 3% will be implemented by the end of FFY 2015.
- Implement drug-formulary checks: 55% currently have, 30% will be implemented by the end of FFY 2012, 15% will be implemented by the end of FFY 2013.
- Incorporate clinical lab-test results as structured data: 64% currently have, 27% will be implemented by the end of FFY 2012, 9% will be implemented by the end of FFY 2013.

SOURCE: 2011 NAPH HIT Survey
NOTES: For each meaningful use stage 1 menu measure, NAPH members were asked to specify their implementation timelines.
In July 2011, the ONC HIT Policy Committee sent recommendations to CMS for new criteria for meaningful use stage 2. Many of these criteria were included in CMS’ proposed stage 2 rule. For each HIT Policy Committee recommended measure, NAPH members were asked to specify their implementation timelines.

**FIGURE A.5 NAPH Member Implementation Timeline for HIT Policy Committee’s Proposed Stage 2 Measures**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10% of patients and families view and have ability to download information about a hospital admission</td>
<td>10% 28% 48% 7% 7%</td>
</tr>
<tr>
<td>Electronically transmit a summary of care record to the receiving provider or post-acute facility for more than 10% of discharges</td>
<td>24% 24% 38% 10% 3%</td>
</tr>
<tr>
<td>Address encryption data at rest</td>
<td>28% 17% 21% 21% 10% 3%</td>
</tr>
<tr>
<td>Record care plan goals and patient instructions in the care plan for more than 10% of patients</td>
<td>28% 28% 34% 3% 7%</td>
</tr>
<tr>
<td>Send clinical reminders to active patients</td>
<td>28% 34% 24% 10% 3%</td>
</tr>
<tr>
<td>Discharge instructions are viewable and downloadable</td>
<td>28% 34% 31% 3% 3%</td>
</tr>
<tr>
<td>Generate and transmit hospital discharge orders for permissible prescriptions electronically</td>
<td>34% 21% 41% 3%</td>
</tr>
<tr>
<td>Record health care team members for more than 10% of patients (can be unstructured)</td>
<td>34% 28% 31% 7%</td>
</tr>
<tr>
<td>Hospital lab sends structured electronic lab results to outpatient providers</td>
<td>38% 21% 34% 3% 3%</td>
</tr>
<tr>
<td>Record demographics with the ability to use data to produce stratified quality reports</td>
<td>41% 17% 28% 10% 3%</td>
</tr>
<tr>
<td>Generate lists of patients by multiple specific parameters</td>
<td>41% 24% 24% 10%</td>
</tr>
<tr>
<td>Enter at least one electronic note for 30% of eligible hospital days</td>
<td>41% 24% 31% 3%</td>
</tr>
<tr>
<td>Employ drug interaction checking with the ability of provider to refine drug-to-drug interaction rules</td>
<td>45% 10% 34% 3% 3% 3%</td>
</tr>
<tr>
<td>Medication orders automatically tracked via electronic medication admin. record in use in at least one hospital unit</td>
<td>45% 21% 31% 3%</td>
</tr>
<tr>
<td>At least one radiology test is ordered using CPOE</td>
<td>48% 21% 31%</td>
</tr>
<tr>
<td>Use CPOE for lab orders</td>
<td>48% 21% 31%</td>
</tr>
</tbody>
</table>

**SOURCE** 2011 NAPH HIT Survey

**NOTES** In July 2011, the ONC HIT Policy Committee sent recommendations to CMS for new criteria for meaningful use stage 2. Many of these criteria were included in CMS’ proposed stage 2 rule. For each HIT Policy Committee recommended measure, NAPH members were asked to specify their implementation timelines.