INTRODUCTION

The guidance for the Medicare Rural Hospital Flexibility (Flex) Program for the competitive funding cycle that began in Fiscal Year 2015 (September 1, 2015 through August 31, 2016) required any state interested in undertaking EMS projects to conduct an EMS assessment during the first year and use the results to inform its activities in subsequent years of the funding cycle. This brief provides an overview of the EMS assessment projects and tools implemented by five State Flex Programs (Arizona, California, Minnesota, Nebraska, and Wisconsin), including the strategies and tools used to conduct their assessments and their dissemination plans. Based on grant applications and progress reports submitted by State Flex Programs, their assessment tools and reports, and interviews with key informants, this brief provides insight into the scope of state EMS assessments, the development and implementation of their assessment tools, the resources needed to conduct their assessments, factors that contributed to their successes and challenges, and their dissemination plans for their assessment results. The brief concludes by highlighting lessons learned to inform the efforts of other State Flex Programs, as well as EMS authorities interested in conducting their own rural EMS assessments.

BACKGROUND

The legislative authority for the Flex Program\(^1\) provides funding for State Flex Programs to support Critical Access Hospital (CAH) quality and financial/operational performance improvement, reporting, and benchmarking activities; designate facilities as CAHs; engage CAHs in population and community health improvement activities; and support and integrate rural EMS into local and regional systems of care. State Flex activities focused on EMS are expected to improve local and regional EMS capacity and performance in CAH communities and improve the integration of EMS into rural systems of care.
This latter program category is optional. The current Flex Program grant guidance identifies the following scope of allowable EMS-related activities:

- Implement a community-level rural EMS system assessment that uses a standard assessment tool to assess EMS capacity and performance. The assessment process should engage local stakeholders, assess rural EMS needs, identify capacity and performance issues, engage stakeholders in setting priorities, and describe common priorities by and across communities.

- Improve identification and management of time critical diagnoses (TCDs) involving ST-Elevation Myocardial Infarction (STEMI), stroke, or trauma by implementing performance improvement strategies to engage EMS agencies and local/regional systems of care to develop integrated service systems, improve the capacity of EMS agencies to diagnose and treat TCD episodes of care, and expand EMS use of nationally recognized TCD protocols and emergency dispatch.

- Implement projects to improve local EMS system capacity in CAH communities to develop collaborative linkages between CAHs, community providers, and EMS agencies to improve local pre-hospital and emergency care capacity; improve the capacity of EMS agencies to collect and report quality data and use that data for performance improvement; or enhance the billing, collection, and financial systems of EMS agencies and their ability to use financial data for performance improvement.

The guidance reflects a continued emphasis by the Federal Office of Rural Health Policy (FORHP) on funding activities with clear outcomes that can be tracked to monitor progress and impact. Flex programs and activities are expected to better integrate EMS into the local healthcare infrastructure to improve local system performance.

**APPRAoch**

We examined the assessment tools and processes implemented by State Flex Programs in the first year of the funding cycle. The goal was to identify tools and processes that can be used by other State Flex Programs interested in expanding their EMS activity. To select our study population, we reviewed the FY 2015 State Flex grant applications and identified 22 states that proposed to conduct EMS assessments. We eliminated 10 states whose assessment projects were based on analysis of existing community health needs assessments conducted by rural hospitals rather than specific EMS-focused assessments. We contacted the remaining 12 states to collect their assessment tools and materials. After reviewing these materials, we selected Arizona, California, Minnesota, Nebraska, and Wisconsin for a deeper look at their assessment processes. We conducted key informant telephone interviews with a range of stakeholders from each of the selected states January–March 2017.
and training/continuing education. Minnesota focused primarily on workforce, leadership, and training issues.

The differences between the assessments conducted by Wisconsin and Nebraska and those conducted by Arizona, California, and Minnesota lie in their approach and purpose. For Wisconsin and Nebraska, the goal was to enable individual EMS services in their respective states to assess their strengths and weaknesses and identify opportunities for improvement within each attribute based on their current status and available resources. Minnesota’s assessment tool reflected concerns about the capacity and sustainability of rural EMS identified during a rural EMS summit held in 2015, and focuses on issues of workforce sustainability, leadership, medical direction, and funding.

In contrast to the broader assessments conducted by the other states, California directly targeted the scope of allowable EMS and TCD activities reflected in the EMS Performance Improvement Measurement System (PIMS) measures outlined in the Flex Program guidance. Arizona’s assessment was very detailed with a focus on agency operations, equipment and vehicles, billing, dispatch and communications, medical direction, relationships with receiving facilities, staffing, and emergency preparedness. Built on the foundation of a prior assessment, Arizona’s assessment was intended to drive both EMS policy development in Arizona as well as to fulfill the dissertation requirements for the project lead’s doctoral program.

The following sections explore key themes and lessons learned that emerged during our review of the assessment processes and tools implemented across the five study states.

### Table 1. Summary of EMS Assessment Processes

<table>
<thead>
<tr>
<th>Scope</th>
<th>Assessment Tool</th>
<th>Implementation</th>
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<tbody>
<tr>
<td>AZ Statewide survey of rural and urban EMS providers</td>
<td>105 question survey focused on trauma, STEMI, dispatch protocols, billing practices, quality, other operational issues</td>
<td>Delivered electronically to EMS agencies with assistance from EMS partners</td>
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<tr>
<td>CA Targeted Rural survey of 33 agencies serving CAH communities</td>
<td>27 question survey focused on requirements of the Flex Guidance: TCDs, system planning, and agency capacity</td>
<td>Online survey of rural EMS providers and ambulance services serving CAH communities with assistance from Local EMS Agencies (LEMSAs)</td>
</tr>
<tr>
<td>MN Statewide Rural survey of licensed ambulance services in rural areas</td>
<td>59 question survey focused on TCDs, recruitment, agency capacity, and sustainability</td>
<td>Delivered electronically to services in rural communities. Process included multi-pronged communication plan to encourage participation.</td>
</tr>
<tr>
<td>NE Local on-site assessments of a limited number of vulnerable services. Statewide survey of all rural and urban services</td>
<td>Local assessments conducted by EMS consultants using key informant interviews. Survey used the Wisconsin attributes survey instrument.</td>
<td>2-3 local assessments per year of agencies “in trouble”. Survey distributed by NE Office of Emergency Health Systems. Process included multi-pronged communication plan to encourage participation.</td>
</tr>
<tr>
<td>WI Statewide survey of all rural and urban EMS agencies</td>
<td>Initial survey focused on the 18 attributes of successful EMS agencies. Developed with the Joint Committee on Rural EMS Care (representing the National Association of EMS Officials and National Organization of State Offices of Rural Health). Second survey developed by WI SORH focused on TCDs.</td>
<td>Online survey distributed by the WI SORH and project partners.</td>
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(Table continues on next page.)
OBSERVATIONS

State EMS assessments varied in their degree of direct alignment with Flex performance measures

In 2014, the Flex Monitoring Team worked with a broadly representative expert panel to develop a set of rural EMS performance measures for the Flex program. These measures reflect a system of care approach for rural EMS and were designed to monitor the extent to which State Flex Programs are assessing rural EMS needs and developing EMS initiatives in response to identified needs. The expert panel identified measures related to the capacity of rural EMS agencies to use data for performance improvement, to use nationally recognized protocols to recognize and address TCDs, and participate in planning initiatives to integrate EMS into local/regional systems of care. The measures are organized into three of the six domains for emergency systems of care identified by the National Quality Forum: Capability, Capacity, and Access; Recognition and Diagnosis; and Coordination of Care. They also align with the National EMS Advisory Committee’s Guiding Principles.

The first NQF domain (Capability, Capacity, and Access) contains 13 measures that focus on system assessment, EMS agency data and reporting capacity, and EMS protocol use involving time critical diagnoses (e.g., ST-Elevation Myocardial Infarction (STEMI), stroke, and trauma) and systems of care. The second domain (Recognition and Diagnosis) contains two measures that focus on staff training on the recognition of STEMI.
and stroke and training on the use of trauma/filed triage protocols for all ages. The third NQF domain we looked at (Coordination of Care) contains two measures that monitor the extent to which rural EMS agencies have local collaborative system planning committees involving CAHs, other health care providers, fire and law enforcement officials, and community stakeholders and whether those committees have developed plans to address emergency system resource, workforce, and training needs.

We compared each state’s assessment tool against these measures to assess the degree to which it captured information that aligns with the priorities reflected in the EMS measures. As discussed earlier, California’s assessment instrument was developed in direct response to the EMS priorities established in the guidance and, as such, directly aligns with the measures. Wisconsin’s initial survey (which was also used by the Nebraska Flex program) focuses on the attributes of a successful EMS service, many of which align with the guidance’s focus on enhancing EMS billing and quality improvement capacity. It does not address issues related to local system of care planning, engagement, and integration or sharing of data among local participants in those systems of care. Additionally, it does not directly address time critical diagnoses (TCD) protocol use, and to address this important area of Flex activity, the Wisconsin Flex staff developed and implemented a second survey instrument focused on TCD issues. Nebraska’s individual agency assessments focus on billing, sustainability, and performance issues of struggling and at-risk EMS services at the community and/or county level. Minnesota’s assessment instrument focuses primarily on workforce recruitment and sustainability issues as well as agency leadership and medical direction. A 13-question survey on TCDs was included at the end of their EMS assessment. Arizona’s survey tool included questions that address multiple key areas of EMS capacity including staffing, dispatch, equipment, billing practices, and participation in quality programs. Arizona’s survey instrument does not explicitly address use of billing and quality data to improve agency performance, participation in local system of care planning and integration initiatives, or the use of TCD protocols.

Variations in alignment with the Flex Program’s EMS performance measures stem directly from the multiple goals that four of the five states established for their assessment efforts. States that chose to do statewide assessments of urban and rural EMS agencies (Arizona, Minnesota, and Wisconsin) sought to collect data to drive state EMS policy development. In addition, Wisconsin and Nebraska sought to provide data and tools to enable local agencies to recognize their strengths and weaknesses and identify opportunities for improvement within the different EMS capacity attributes. As discussed earlier, California’s assessment focused directly on the EMS themes and issues reflected in the Flex guidance. Given the time needed to complete these more comprehensive EMS detailed assessments, these states are just now beginning to use the assessment results to inform the development of State Flex initiatives to address priority needs.

Flex funding provided important support for state EMS assessment activity

Participants in our study indicated that Flex funding was a relatively modest but important source of funding for their
assessment activities. Flex funding was the sole source of direct funding to support the assessment work in the five study states. Most of the participants in our study noted that Flex funding was supplemented by in-kind contributions from Flex and SORH staff and from their collaborative partners. These in-kind costs included staff time, the use of University-licensed software for survey design and analysis, and state listservs to distribute the surveys. Flex funding often covered the staff costs and time for internal Flex and SORH staff working on the assessment process including the development of the assessment tools, analysis of the data, and preparation of reports. Some states provided Flex funding to other individuals and/or organizations to support their assessments. Arizona, for example, provided funding for a doctoral student (who is also a licensed Emergency Medical Technician) to develop their statewide EMS assessment tool. Nebraska funded an external consultant to conduct local agency assessments and subcontracted with the Wisconsin State Office of Rural Health to implement a statewide assessment and assist with analysis of the data and preparation of the findings report. Minnesota established subcontracts with the Heart Disease and Stroke Prevention Unit in the Department of Health for support with data analysis, report writing, and dissemination. Six Regional Trauma Advisory Committees in Minnesota also received Flex funding to assist in the assessment process.

Collaboration with key EMS stakeholders was critical in the development and implementation of the EMS assessments

Collaboration with key EMS stakeholders at the state, regional, and/or local levels was important in all the states we contacted. In addition to clarifying issues of concern, and identifying opportunities for intervention, collaborative partnerships helped the states achieve a reasonable response to their surveys and engage key stakeholders in understanding the assessment results. Collaborative partners were engaged in different aspects of the EMS assessment process, including assisting in the design and development of the assessment tool, providing access to contact lists, promoting the survey to respondents, distributing the survey tools, facilitating data collection efforts, and preparing final reports and disseminating assessment results. Prior relationships with state and regional EMS stakeholders helped to pave the way for collaborative work on the design and implementation of the assessment tool in our five study states. For example, Wisconsin’s assessment tool grew out of the ongoing national collaboration between the National Association of EMS Officials, the National Organization of State Offices of Rural Health, and State Flex Programs on the Joint Committee on Rural Emergency Care (JCREC). Minnesota’s assessment process involved multiple state-level stakeholders including the Minnesota Ambulance Association and the EMS Regulatory Board. Their prior collaboration led to the creation of a Rural EMS Sustainability Committee, housed in the MN Ambulance Association, and the development of the current EMS survey instrument for rural agencies. The local EMS agencies in California were instrumental in providing input to the assessment tool as well as helping to distribute the assessment tool to rural agencies in their geographic districts. Their on-the-ground connection with rural EMS providers and their coordination with other healthcare providers made them ideal partners to distribute the surveys and encourage high rates of participation.

States faced common challenges in conducting their EMS assessments

The following common challenges were identified by stakeholders in the five study states:

- Collaboration takes time, not only in the development of relationships but in the negotiation of competing interests and agendas. Although broad and inclusive collaboration provides important support for the assessment process, it often requires more time and effort than typically expected and can delay the completion of the assessment. It may also require additional time to reconcile competing interests of the different partners. Wisconsin and Minnesota both reported delays in the completion of their assessments as a result of broad collaboration. In Minnesota, for example, members from the state ambulance association, the EMS Regulatory Board, and the Department of Health, all had specific needs and interests that influenced their suggestions on what questions to include in the survey. The states faced similar issues preparing the final report as all members of the external stakeholder group reviewed and provided input on the report and its findings. This led to an increase in the length of the report and the time needed to finalize the report document. This was a clear concern to the Flex program as they suggested that it might be more efficient in the future to task a
smaller committee with responsibility for developing the instrument which would then solicit feedback from the larger group. Wisconsin had a similar experience working with national and state partners on the JCREC. While working with this committee extended the development time of the instrument, it also developed widespread support and credibility for the tool among the partners and the EMS community.

- States varied in their interpretation of the purpose and timing of the assessment process. The Flex Program guidance established a clear expectation that State Flex Programs interested in undertaking EMS-related initiatives conduct an EMS assessment during the first year of the funding cycle and use the results to inform their EMS initiatives in the subsequent two years of the cycle. As discussed earlier four of the five states we studied chose to conduct larger, more comprehensive assessments that aligned with their state’s policy and program priorities. Minnesota’s statewide assessment was designed to provide state policymakers and EMS stakeholders with on-the-ground data to support legislative and policy changes relative to rural EMS sustainability. Arizona, Nebraska, and Wisconsin conducted statewide assessments involving urban and rural EMS providers. Wisconsin and Nebraska’s assessment was also designed to provide local agencies with data to support their own improvement efforts. Each of these assessments reflected the longer term needs of state EMS policymakers and stakeholders.

- With the exception of California, however, the larger scale assessments undertaken by the other four study states conflicted with their short-term Flex program planning needs. Data collection for statewide EMS assessments to support planning and implementation takes significant amounts of time that may not be consistent with State Flex Program planning and implementation timelines. State Flex Programs interested in undertaking a more comprehensive EMS assessment as part of their Flex activities might consider a phased assessment whereby the data needed to inform Flex program planning could be collected first followed by the more comprehensive assessment that meets the needs of EMS policymakers and stakeholders. Using a targeted instrument such as the survey developed by the California Flex program in the first phase of the process could be useful as part of this two-phased approach.

- Obtaining good EMS agency contact information and response rates can be difficult. Study participants noted the challenge of obtaining good contact information for local and regional EMS services as part of the assessment process. Arizona explained that obtaining accurate and up-to-date email lists for Arizona EMS services, private EMS agencies, and tribal services was a significant challenge. The Arizona EMS Regional Councils and the Executive Director of the Arizona Advisory Council on Indian Health Care were identified as important resources in connecting with the often difficult to reach volunteer and tribal EMS agencies.

Study participants also noted challenges in getting adequate response rates from local and regional EMS agencies to the assessment surveys. Local EMS agencies tend to be busy with few resources to respond to surveys and are often over-surveyed by researchers and vendors. To overcome this challenge, the five study states relied on state and regional EMS stakeholders and partners to encourage EMS agency participation in the survey. Minnesota’s assessment was sent to 230 rural EMS services, with 81 percent responding. Their partnership with the state ambulance association and EMS Regulatory Board was instrumental in reaching the rural services. They, like Nebraska, set up a communications plan to provide multiple messaging and personal follow-up. Nebraska attributed its 71 percent response rate to a tiered communications process involving pre-notification letters prior to the release of the survey and two follow-up emails once the survey was in the field. Additionally, staff at the Office of Emergency Health Systems (in Nebraska’s Department of Health and Human Services) made follow-up phone calls to encourage participation. Wisconsin’s assessment yielded a 78 percent response, and they also had a follow-up process in which reminder notices were generated directly from the survey program to encourage participation from non-respondents. The involvement of these stakeholders provided legitimacy to the assessment process that encouraged participation at the agency level. California encouraged local participation by engaging the local...
EMS agencies (LEMSAs) responsible for overseeing EMS services in CAH communities.

- Transitions in leadership can result in loss of institutional memory and delayed progress. The new director of Nebraska’s State Office of Rural Health noted that after the retirement of the longtime director, she had a large learning curve regarding EMS and needed to establish her own relationships with EMS agencies and stakeholders to help understand and prioritize EMS issues. Although initially this posed a challenge, it also provided an opportunity to renew relationships between state agencies and develop closer collaboration with these key stakeholders.

**LESSONS LEARNED**

Summarized below are several broad lessons learned in developing and implementing an EMS assessment that may be helpful for State Flex Programs:

- Conducting a comprehensive EMS Assessment may take more time than expected. Planning, strategizing, engaging stakeholders, and developing the assessment instrument takes considerable time at the front end of the assessment process. Respondents agreed that the process for developing their assessments took longer than anticipated and precluded them from completing the assessments within the first year of the funding cycle. In turn, this hindered their ability to use the results to inform State Flex programming during the subsequent years of the funding cycle.

- Shorter, more rural EMS focused assessment increase response rates and produce information most relevant to rural EMS providers and the Flex Program. Clearly defining the purpose of the assessment and staying true to the goals of the assessment—whether to provide data to inform legislative and policy changes or to identify targeted training—will help in the development of the questions, the length of the assessment, and the strategies needed to field the survey instrument. In addition to involving staff and stakeholders with knowledge of EMS systems and operations, it is important to engage participants with a background in survey design and analysis. This can help to reduce design issues (e.g., too many questions, confusing questions, poor skip patterns, and poor survey design) that will compromise the response rates and complicate analysis of resulting data and preparation of findings.

- A strong communications plan implemented at the start of and conducted throughout the assessment process can help to increase awareness among potential respondents and increase the response rate. Several states noted the importance of a solid communications plan to achieving high response rates. This includes emails or letters informing the EMS agencies in advance about the assessment, a well-written cover letter/email explaining the importance of participation and how the results will be used, follow-up reminders to non-respondents, and a plan to disseminate results. It helps to have communication come from a recognized EMS stakeholder (e.g., the state EMS agency, regional EMS authorities, etc.) rather than the State Flex Program as local EMS providers may be more likely to respond to recognized names. Tracking survey responses and sending follow up reminders to EMS agencies that have yet to complete the survey is a crucial element of the communication plan. These follow up reminders from key partners can boost survey response rates. Finally, it is also helpful to have a clear plan for disseminating the results of the assessments and to share the results with survey participants.

- Relationships between State Flex Programs and key EMS agencies and stakeholders can be an important asset to support the assessment process and must be cultivated and maintained as part of the assessment process. Turnover in leadership and senior personnel can compromise these longstanding relationships. Scheduling regular meetings between the key partners around common issues and opportunities can help to maintain these relationships in the face of staff turnover and a changing political environment. Key stakeholder relationships must be maintained and nurtured due to the loss of institutional memory due to staff turnover and other organizational changes. Flex coordinators would benefit from technical assistance to identify and connect with key stakeholders.
• Flex funding and resources can provide important leverage in facilitating the development and implementation of the assessment. As noted earlier, Flex funding for the assessment process in our study states was relatively modest, yet an important resource. The use of Flex dollars to support EMS assessments demonstrated the State Flex Program’s commitment to rural EMS and served to leverage in-kind contributions by key partners.

• Exploration of a phased assessment process to support State Flex Program planning is needed. As discussed earlier, the longer time line required to conduct a comprehensive, statewide EMS assessment argues for a phased assessment approach to support State Flex Program planning and implementation. The initial phase of the EMS assessment could include a greater focus on quantifying rural EMS capacity rather than individual agency performance. The initial assessment phase to support State Flex Program planning might rely more heavily on key informant/stakeholder interviews involving state, regional, and local EMS stakeholders, the potential use of secondary data already collected by state EMS agencies, and a shorter, more targeted survey tool targeting EMS agencies in CAH communities (e.g. California’s rural EMS survey tool). States may need resources, tools, and technical assistance to incorporate these data sources into their assessment processes. State Flex Programs would benefit from technical assistance on conducting short turnaround assessments to support Flex Program planning and implementation, conducting key informant interviews, using existing state EMS data, identifying priority needs, and using the results to inform Flex Program planning as well as more extensive statewide EMS assessments.

CONCLUSIONS

The assessment process undertaken by State Flex Programs in the current funding cycle provides important lessons to support the assessment process in future Flex funding cycles. These lessons include the need for collaborative engagement of EMS stakeholders and processes to encourage participation by community and agency level stakeholders. As the same time, the states have developed useful survey tools that can be adopted by other states to support their own EMS assessments. It is also clear, however, that additional resources and support are needed to help states conduct rapid-cycle assessments to support State Flex Program EMS planning and programming.

Greater direction and technical assistance are needed on the purpose and role of the assessment as part of the overall Flex program. State Flex Programs need help to ensure that state assessments funded by the Flex Program can help direct and guide Flex activities throughout the grant cycle. FORHP, through its technical assistance contractors, can play an important role working with key Flex partners to develop resources for the rapid-cycle assessment needs of State Flex Programs and disseminating these resources to the states. It can also help to provide guidance to states looking to start an assessment process, particularly recommendations about which tools to use, how to engage key stakeholders, and the development of an assessment process. Further, FORHP can support the development and maintenance of a database of these tools and an assessment toolkit that includes a discussion of how to use these tools and incorporate the results into their programs. And finally, states need examples of evidence-based strategies to address the EMS system capacity and performance needs and gaps identified by the assessments.
REFERENCES

1. Social Security Act, (42 U.S.C.1395i-1), Title XVIII, Section 1820(g)(1-2).


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