EDIE Utility
Evaluation

OREGON HEALTH LEADERSHIP COUNCIL
August 2017

EDIE Utility Evaluation

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Executive Summary

In 2014, the Emergency Department Information Exchange (EDIE) Utility was formed as a state-wide public-private initiative of the Fiscal Agent, the Oregon Health Leadership Council (OHLC) and Sponsoring Organizations, Oregon Health Authority and Oregon Association of Hospitals and Health Systems and stakeholders. The Utility was based on the initiative to bring EDIE to hospitals in Oregon, and expanded EDIE to include inpatient and discharge information, with the goal of reducing potentially avoidable emergency department (ED) utilization. Under the EDIE Utility model, funding partners agreed to commit to funding the EDIE initiative for three years (2015-2017) to allow sufficient time to demonstrate the value of the utility. Once fully deployed, the EDIE Utility was also intended to serve as a foundation for delivering hospital event notifications to health plans, Coordinated Care Organizations (CCOs), local health information exchanges and providers through a second service, PreManage, also offered by Collective Medical Technologies (CMT), the EDIE vendor.

The evaluation of the EDIE Utility is intended to inform recommendations regarding the future of the EDIE Utility: including its structure, financing and program development. The evaluation was guided by a steering committee of key stakeholders. An analysis of the EDIE Utility goals and trends related to ED utilization was completed. Interviews were conducted with a broad group of stakeholders and users of EDIE and PreManage across Oregon to assess the value of the use of EDIE and PreManage in supporting efforts aimed at reducing ED utilization.

Key Findings

EDIE Utility Structure: The utility model and governance structure is generally viewed as having worked very well. The public-private partnership, the inclusion of broad stakeholder representation and an equitable financing model were described as significant contributing factors. The Governance Committee provided effective oversight for the project scope, performance, data use agreements, and coordination among many stakeholders.

EDIE Utility Goals: Broad reduction in ED visits was not achieved. ED visits increased by approximately 12% between 2013-2015. However, from 2015-2016 the rate of increase was much smaller (0.5%) suggesting that efforts to reduce ED utilization may be beginning to have an impact. ED high utilizers with a care recommendation developed in EDIE/PreManage, had a subsequent 10% reduction in ED visits.

EDIE: All 60 eligible Oregon hospitals have implemented EDIE and are receiving notifications. Having all hospitals participating has made the data exchange very valuable. Most ED providers reported that the care they can provide is greatly enhanced by EDIE notifications, particularly when accompanied by brief patient-specific care recommendations. The inclusion of PDMP information into EDIE notifications is viewed as very helpful in efforts to reduce opioid prescribing. There are opportunities to add the Veteran's Administration, Oregon State Hospital and other facilities such as urgent care as well as improving some of the technical workflows and increasing collaboration with community providers.

PreManage: There has been widespread adoption of PreManage by CCOs, commercial health plans, primary care practices and behavioral health organizations. PreManage users describe the early identification of high utilizers and the ability to coordinate care and communicate across care settings as greatly enhanced. Several communities have begun collaborating to leverage the use of EDIE and PreManage to streamline and standardize processes for addressing high needs, high utilizing patients. Community adoption of EDIE/PreManage is viewed as an opportunity to improve care coordination and reduced duplication between hospitals, health plans, primary care and behavioral health. There are opportunities to further enhance the dissemination of best practices, and to provide tools and resources for users.

Additional Benefits: Many organizations describe benefits in the use of EDIE and PreManage beyond reducing ED utilization. This includes efforts to improve transitions of care and reduce readmissions, combining utilization and clinical information to identify patients at highest risk, and having an ability to communicate important patient information (e.g. POLST, high risk medications).

Recommendations

- Maintain the EDIE utility model and tiered financing structure as is for hospitals and health plans for an additional (3) year period. Incorporate the governance of the EDIE utility into the proposed HIT Commons structure.
- Develop strategic objectives and aligned operations metrics to guide future work
- Continue development of data reporting to evaluate progress in reducing ED utilization and to support performance improvement activities
- Support community collaborative efforts and mechanisms for peer networking and sharing of best practices related to reducing ED utilization
- Identify opportunities to leverage the use of EDIE and PreManage to support specific initiatives (e.g. Opioid prescribing reduction)

Background

In 2013, OHLC's Evidenced Based Best Practice Committee (EBBP) identified the reduction of avoidable ED utilization as a priority. EBBP learned that Washington State had initiated successful efforts to reduce potentially avoidable ED utilization through statewide implementation of an Emergency Department Information Exchange (EDIE). Looking to leverage the success in Washington, OHLC partnered with the Oregon Health Authority (OHA), Oregon Association of Hospitals and Health Systems (OAHHS), Oregon College of Emergency Physicians (OCEP) and Collective Medical Technologies (CMT) in a deliberate and collaborative effort to promote the implementation of the technology through a public-private partnership.

The first phase of implementation included obtaining a commitment from all hospitals in Oregon to implement the interface with EDIE for emergency HL7 Admit Discharge Transfer (ADT) feeds. OHA, OHLC and OHLC's member health plans supported the first-year costs of implementing EDIE. OHA covered approximately half of these costs using State Innovation Model (SIM) funds with the requirement that at least 75% of hospitals agreed to participate.

In 2014, the EDIE Utility was developed as a public good aimed at benefiting all participants and therefore something all participants were encouraged to adopt. Stakeholders agreed to a three-year commitment to use the technology (2015-2017). The funding for the EDIE Utility was established through a tiered financial structure across all the various participants. Hospitals paid half the costs and the health plans and CCOs were responsible for the remaining half. OHA supports the CCO share of costs using state and federal Medicaid administrative funds (50/50). The hospital costs were tiered based on revenue; the health plan/CCO costs were tiered based on membership size. The tiered system ensured that the costs were spread equitably across all participants. Grant funding was provided to ensure small and rural hospitals could participate.

The EDIE Utility was intended to provide all participants the ability to focus on and manage high-risk populations, identify at-risk patients in real time across the care continuum, identify patients at risk for hospital readmission, reduce duplication of tests and reduce reliance on costly ED utilization through better coordination of care. The EDIE Utility identified three specific goals to achieve through statewide implementation of the EDIE Utility:

- Reduce statewide ED utilization by 1% from 2013-2015 (a projected savings of $12 million)
- Achieve a 6.3% reduction in statewide utilization by 2016—a match of the existing utilization rates seen per 1,000 in Washington State
- Meet the existing Oregon Health System Transformation ED utilization benchmark for the Oregon Health Plan (Medicaid) population (44.4 ED admissions per 1,000-member months by the end of 2016, a 12% reduction)

OHLC and OHA serve as co-sponsors and OHLC acts as the fiscal agent and provides management support. Leadership and governance of the EDIE Utility was established through the development of a 16- member Governance Committee with broad stakeholder representation (Hospitals, Commercial Health Plans, CCOs, providers, OHA, OAHHS and ad hoc members). The EDIE Governance Committee's role, responsibilities and boundaries were defined through a charter approved by OHLC and OHA. A key role of the Committee was to establish principles and criteria for access and use of aggregated and de-identified data available through the Utility. Requests for certain uses of data are reviewed and approved by the Committee. The EDIE Governance Committee has also provided oversight for an operations subcommittee. The Operations Committee has focused on identifying and disseminating best practices in the use of EDIE and PreManage, coordination of related quality improvement initiatives and supporting use cases aimed at leveraging the use of the technology to enable healthcare transformation efforts.

By early 2015 all 60 Oregon hospitals had implemented EDIE and were receiving notifications. Many ED's integrated EDIE alerts into their ED tracking boards within the clinician's workflow. There was early adoption of PreManage by CCOs and primary care practices (PCP). In 2016, there was widespread adoption of PreManage by several additional CCOs, commercial health plans, primary care provider practices and behavioral health organizations. Legislation was successfully passed in 2016 to permit access to the Prescription Drug Monitoring Program (PDMP) via health IT systems including EDIE notifications to support statewide efforts to reduce opioid prescribing.

Data Analysis

STATEWIDE ED RESULTS IN OREGON

2013-2016

	2013	2014	2015	2016
Goal #1				
Reduce ED utilization (2013-2015) by 1%	1,251,005	1,343,056	1,409,049	1,439,482
Goal #2				
Match Washington State ED utilization rates for 2011 (340/1000) by 2016	318.5	338.2	349.7	351.7
Goal #3				
Meet Oregon Health System Transformation ED Benchmark for Oregon Health Plan population (44.4/ 1000-member months)	50.5	47.3	45.7	47.2

EDIE Utility Goals

The goals established by the EDIE Utility acknowledged that any outcomes related to ED utilization would likely be impacted by several regulatory and economic shifts in the state: increased insurance coverage both through the health exchange and the Medicaid expansion population; general population growth in Oregon; and capacity issues with respect to primary care. The table above shows statewide ED results through 2016 in Oregon.

Oregon did not achieve the goal of a 1% reduction in ED utilization from 2013 to 2015—instead during this 2-year period the state increased ED utilization by 12%. Furthermore, by the end of 2016, Oregon ED visit rate of 351 per 1,000 population had not matched the Washington ED utilization rate of 340 per 1,000 population. Lastly, the Oregon Health Plan (OHP) benchmark for ED visits of 44.4/1000-member months was not met by the end of 2016.

Despite the initial goals of the EDIE Utility not being met—the table does demonstrate some promising trends. The rate of change per year from 2014 – 2016 shows that both the raw number of ED visits in Oregon and the ED utilization rate per 1,000 population are increasing at lower rates consistently each year (most dramatically, the ED rate went from a 6.19% increase from 2013-2014 to just 0.55% increase from 2015-2016). Additionally, the OHP visits per 1000-member months declined 7% between 2013-2016. These modest results suggest the need to continue monitoring progress to determine whether the ED visit rate stabilizes or potentially decreases as interventions aimed to reduce utilization are more broadly implemented.

The EDIE Utility has provided a reliable, statewide dataset on ED visits in Oregon. The EDIE data combined with Apprise's INFOH data has created a dataset that can accurately account for all ED visits in Oregon, including accurate payer and diagnosis information. This dataset (referred to as the "hospital dataset") provides insight on statewide ED utilization as well as the potential impact of EDIE Utility activities on varying types of utilization in Oregon.

The evaluation team analyzed several factors including the impact of avoidable ED visits, trauma-related visits, utilization by geographic region and distinct payer populations. The utilization patterns of ED high utilizers were examined in detail.

Avoidable and trauma-related ED visits

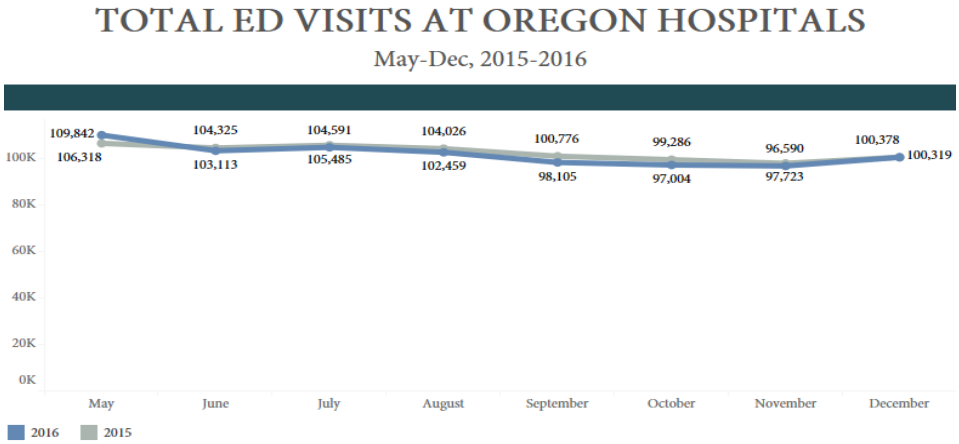
Avoidable ED visits and trauma ED visits were both evaluated to determine the effect on overall utilization. No significant findings were determined from analyzing these visit types and it does not appear that either visit types are contributing significantly to utilization trend changes.

Statewide utilization by payer and geography

Hospitals joined the EDIE Utility network on a rolling basis over a 15-month period. As such, a complete statewide dataset from EDIE was not available until May 2015. For this reason, the below graphs focus on May-Dec 2015 vs 2016 using the hospital dataset described above.

The graph below represents total ED visits statewide and presents a slight decrease in May-Dec visits in 2016 compared to 2015. While not enough of a difference to meet the EDIE goals, the decrease suggests some combination of factors may be leading to stabilization of ED visits across the state—notably during a period when the expanded Medicaid population are maintaining their utilization of all health care services and as Oregon experienced a significant period of population growth.

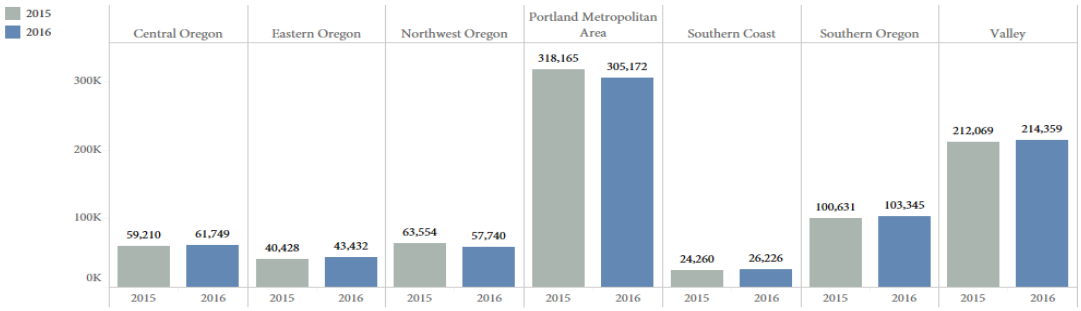
The estimated cost savings calculations are based on average charges multiplied by cost-to-charge ratio (CCR) multiplied by change in visits. CCR is an estimation for all Oregon hospitals based on the Total Operating Expenses / Total Charges. This calculation is based on DATABANK data for May-Dec 2016. The final CCR used was 0.4354.



Change in Visits	-6,294
Change in Visits (%)	-0.8%
Approx. Cost Savings	($5,836,713.06)

ED VISITS BY REGION

May-Dec, 2015-2016



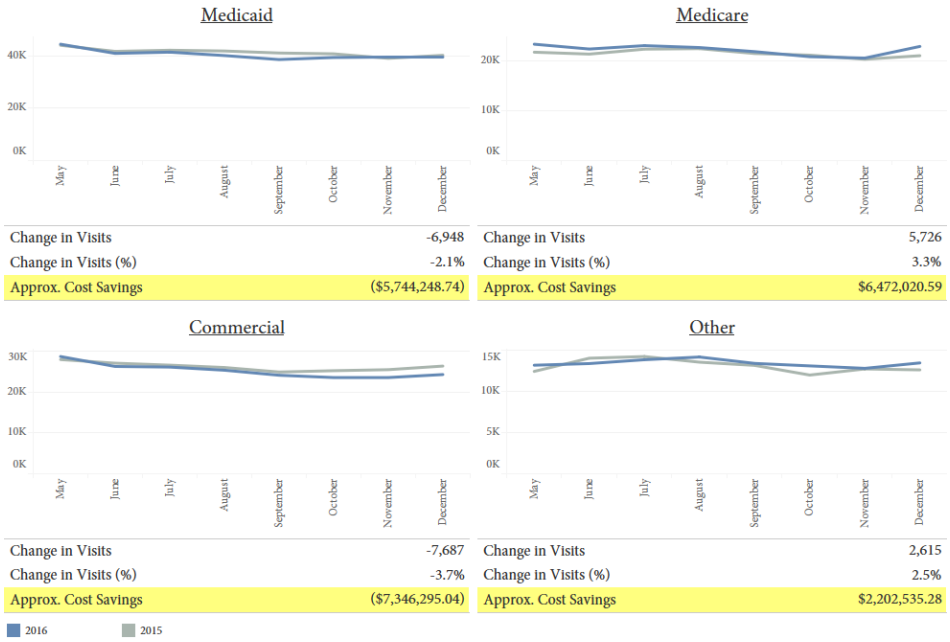
	Central Oregon	Eastern Oregon	Northwest Oregon	Portland Metropolitan Area	Southern Coast	Southern Oregon	Valley
Change in Visits	2,539	3,004	-5,814	-12,993	1,966	2,714	2,290
Change in Visits (%)	4.3%	7.4%	-9.1%	-4.1%	8.1%	2.7%	1.1%
Approx. Cost Savings	$2,333,566.44	$2,383,447.37	($5,813,580.53)	($12,120,736.86)	$1,362,743.19	$2,832,829.63	$2,065,495.85

Oregon has expansive rural and suburban areas in addition to concentrated areas of dense population, requiring the need to regionalize areas based on hospital location (see Appendix). The evaluation team analyzed regional utilization to determine whether these trends also varied. Most regions saw slight increases in ED visits between 2015 and 2016, with the exception of Northwest Oregon which saw a 9% decrease of ED visits and Portland Metro, which saw a 4% decrease, translating to almost 13,000 fewer ED visits in 2016.

The evaluation team reviewed the impact on ED utilization by different payer populations visualized below. Medicaid and Commercial patients have seen decreases in 2016, while Medicare and "Other" patients have not. Notably, the Medicaid population has been a significant focus of the EDIE Utility program, with three quarters of the CCOs in Oregon subscribing to PreManage.

ED VISITS BY PAYER CATEGORY

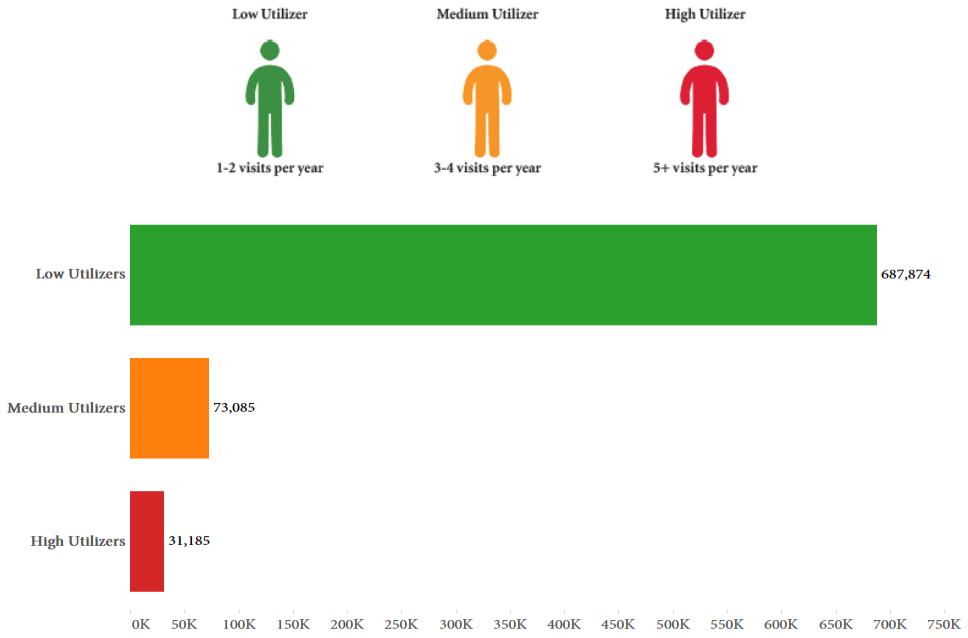
May-Dec, 2015-2016



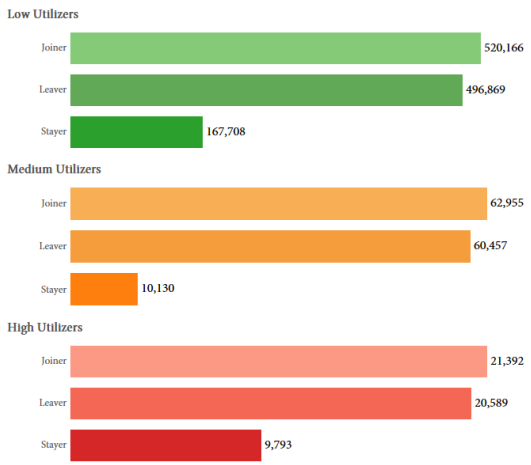
	Medicaid	Medicare	Commercial	Other
Change in Visits	-6,948	5,726	-7,687	2,615
Change in Visits (%)	-2.1%	3.3%	-3.7%	2.5%
Approx. Cost Savings	($5,744,248.74)	$6,472,020.59	($7,346,295.04)	$2,202,535.28

Overview of ED utilization and movement groups

The EDIE utility additionally focused on identifying high utilizers of ED resources, to determine if avoidable ED visits occurred. To evaluate whether different utilization groups have impacted ED visit rate differently in Oregon, patients have been grouped into the categories below based on the number of ED visits in the past year.



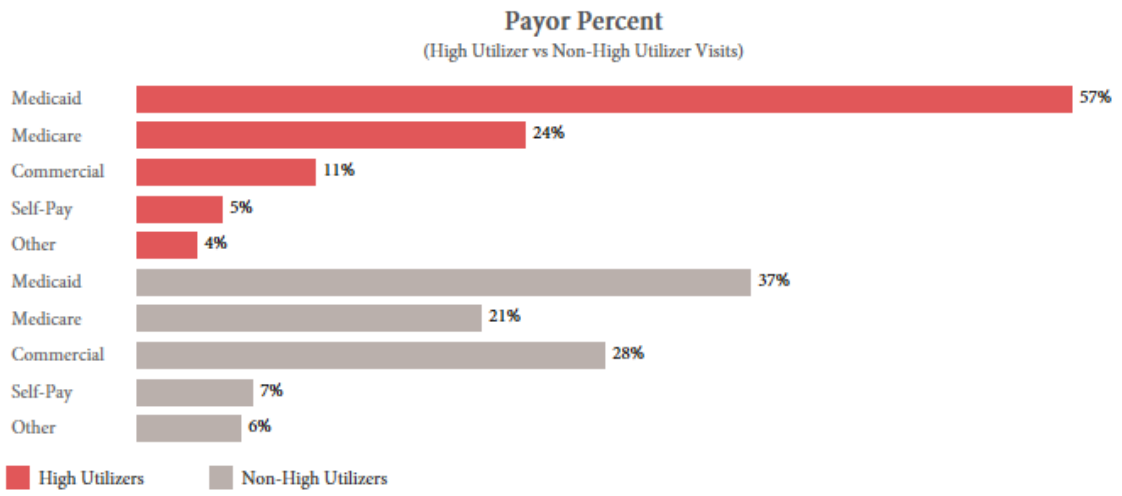
The High Utilizer population comprised less than 4% of all Oregonians that visited the ED in 2016, but the impact on health care systems is disproportionate. The evaluation team analyzed how the High Utilizer population is changing with respect to the other utilization groups. Within each utilization group (High, Medium, and Low) further groupings have been created to show movement in and out of these groups. The movement groups are referred to as Joiners, Leavers, and Stayers. A movement group is based on the patient's utilization group for the previous 12-month period. For example, a patient that was a Medium Utilizer from Q1 2015 – Q4 2015 and a High Utilizer from Q1 2016 – Q4 2016 would be considered a Joiner of the High Utilizer group and a Leaver of the Medium Utilizer group.



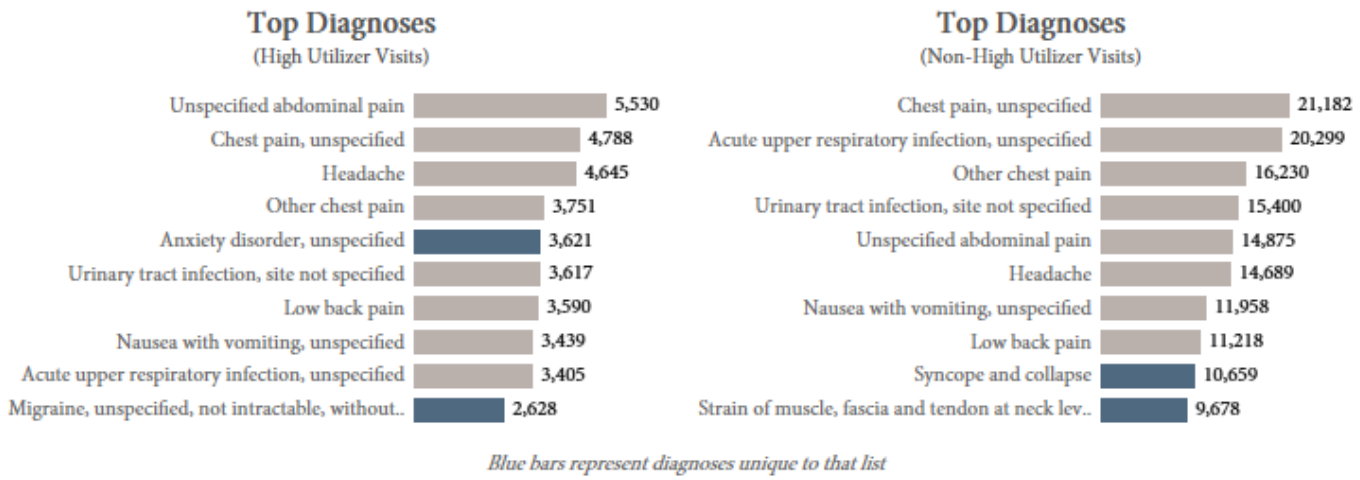
Notably, the group of High Utilizer Stayers is disproportionately higher than the group of Stayers in the Medium and Low Utilizers. The persistent High Utilizer population represents just over 1% of all hospital utilizers.

Focus on High Utilizer population

Further analysis was done on the High Utilizer population to understand the reasons for ED utilization. More than 80% of High Utilizers have a primary payor of Medicaid or Medicare. In contrast, among non-High Utilizers, 28% of visits were associated with commercial payers—and this represents a significantly larger number of visits overall.



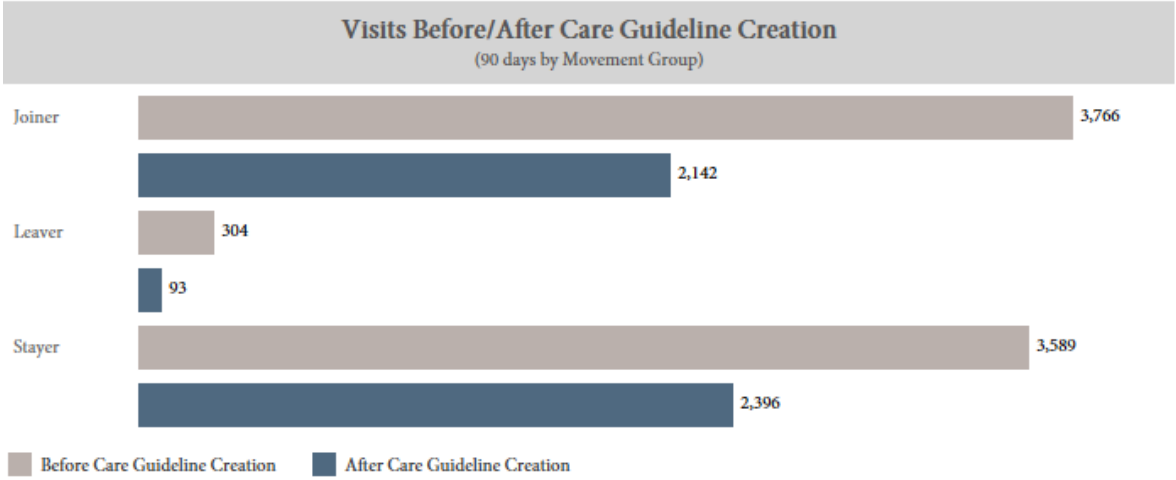
Comparing the common diagnoses among ED visits generally and those by High Utilizers showed that both group's ED utilization is primarily for complaints of pain—chest pain, headache, abdominal pain, etc. Markedly, anxiety was the fifth most common diagnosis among High Utilizers, and does not appear in the top 10 list for non-High Utilizers. Migraine was also common among High Utilizers, but did not make the list of top diagnosis for other utilizer groups. Both groups had Urinary tract infection as a top diagnosis—an issue that is generally addressable in an outpatient setting.



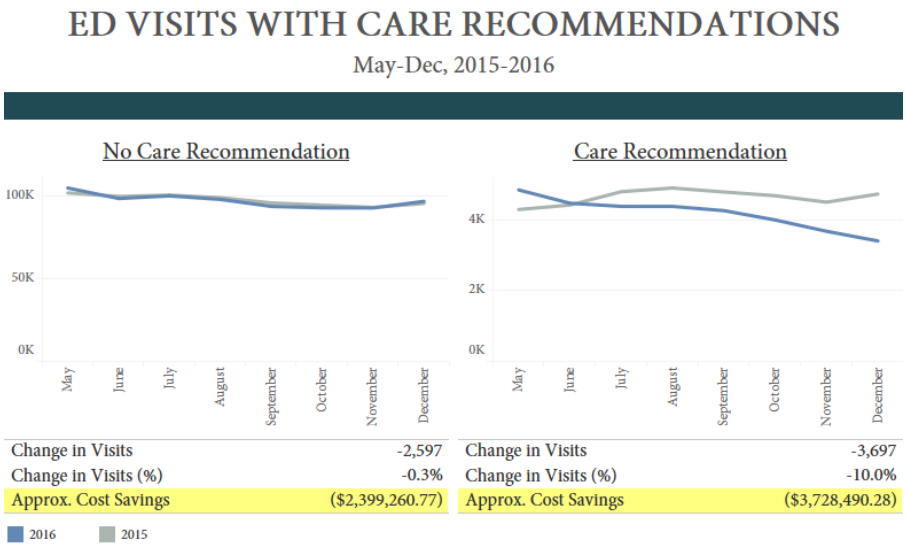
Impact on ED utilization by High Utilizers with care guidelines

One of the primary components of the EDIE system is the ability to add patient specific care guidelines (also known as care recommendations). To determine if these recommendations impacted the subsequent number of visits for High Utilizer patients, a 90-day pre-post analysis was performed, using the creation of the patient's first care guideline as the intervention point. The number of visits for each of those time periods is compared in the

visualization below. **Overall, visits decreased by 40% in the 90 days after an initial care guideline was created for a High Utilizer. Further analysis is desired to determine whether this effect is sustained**.

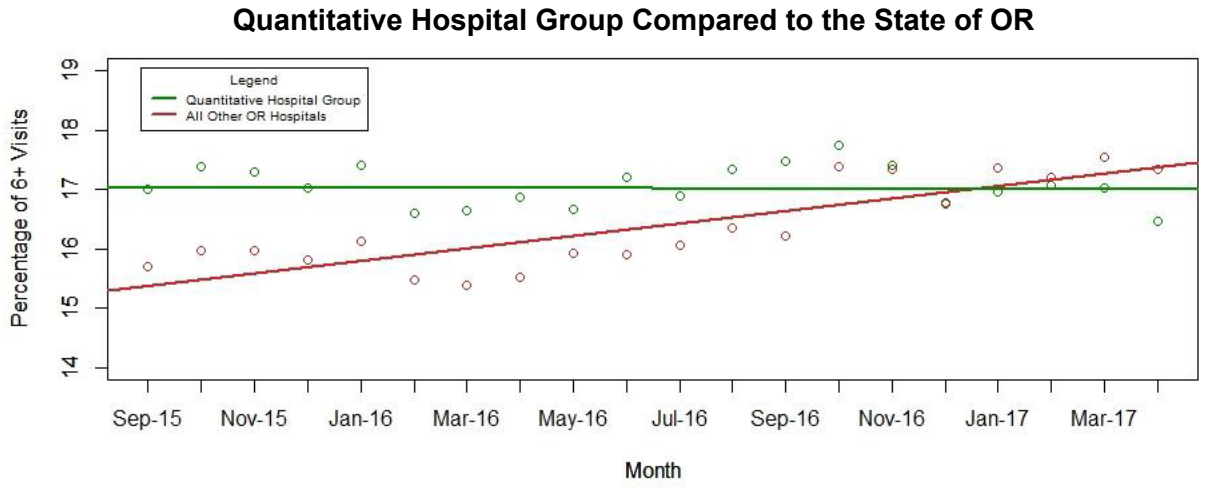


To help illustrate the impact of care guidelines, the evaluation team compared visits for High Utilizers who received a care recommendation against those that did not. The graph below displays these results with a two-year comparison. While the overall decrease is similar, it should be noted that the sample size of patients with a care recommendation is much lower than those without one. **A decrease of 3,697 patients corresponds to a 10% decrease in visits for patients with a care recommendation, compared to a 0.3% decrease for patients without one.**

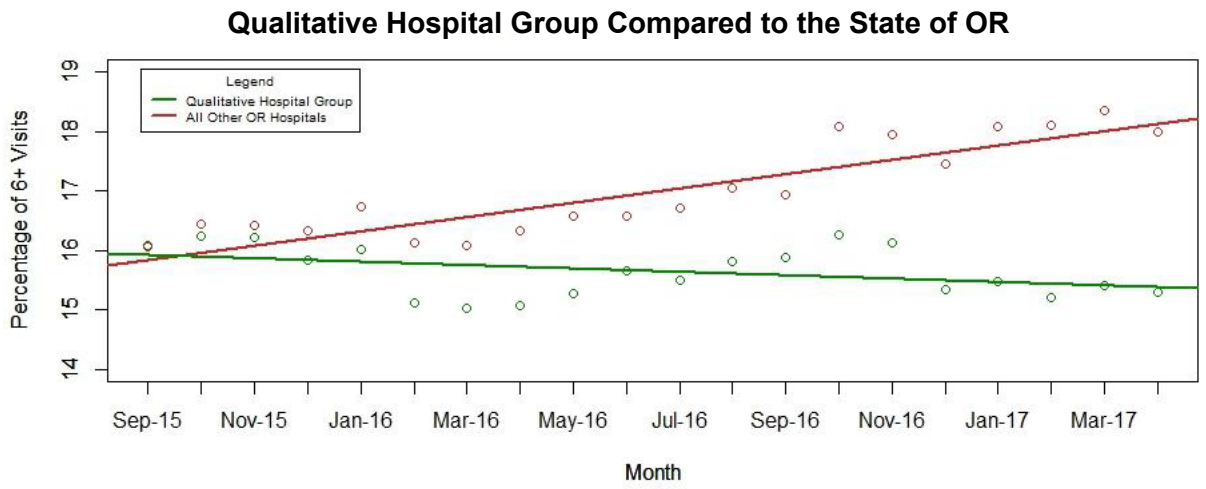


Reduction in High Utilizers visits by hospitals actively using EDIE

Given the promising downward trend in ED visits by High Utilizers with care recommendations, CMT sought to further understand whether EDIE notifications (including the care recommendation and other information) specifically contributed to this finding. Using CMT data alone (without the Apprise INFOH data), they compared the trend of ED visits by High Utilizers for hospitals with high use of EDIE, and other hospitals in Oregon. Two separate comparisons were run to help validate the findings.



The quantitative hospital group (n=15) represented hospitals with the greatest use of EDIE as defined by the amount of data they contributed to the system (care recommendations, care providers, etc.) compared to their total notifications received. This methodology biases toward smaller facilities with a smaller overall number of ED visits. Thus, CMT conducted a secondary analysis with a modified test group.



The qualitative hospital group (n=15) represented hospitals with the greatest use or familiarity with EDIE as defined by results of a survey conducted in October 2016, in partnership with OHLC. This methodology allowed the group to be more representative of geographic and demographic variation across the state. This design is also intentionally biased by design toward hospitals that are likely greater users of EDIE.

The findings demonstrate that the test groups in each analysis had a more promising downward trend in High Utilizer visits. The decrease in the qualitative test group was statistically significant at the 0.05 level. This suggests that use of EDIE is at least a contributing factor to the decrease in High Utilizer visits at these facilities.

Conclusion

The combined activities of Oregon providers and communities during the 2015-2017 EDIE Utility pilot period were unable to achieve the original goals of the EDIE Utility—Oregon has not been able to replicate the dramatic decrease in utilization that Washington State saw after implementing the seven best practices in emergency medicine in 2012. A closer look at utilization, however, suggests that promising trends are being seen and that total statewide utilization might be masking these results. The analysis conducted by the evaluation team found that **utilization is trending down for the commercial and Medicaid populations compared to other payer groups**. The Portland metro area and the Northwest regions of the state are showing regional decreases in ED visits. The High Utilizer population is seeing decreases in visits compared to the broader population—**this decrease is notably larger when the patient has a care recommendation in the EDIE system. Finally, hospitals that are active users of EDIE show a marked decrease in visits by High Utilizers compared to other hospitals in the state.**

These findings suggest that EDIE in Oregon may take a longer period before significant results are observed, as the original EDIE goals projected. The EDIE Utility Governance Committee is now armed with more informative data to guide goals/milestones that demonstrate progress on ED utilization in Oregon.

Stakeholder Feedback

EDIE

In the fall of 2016, OHLC, in partnership with CMT, conducted a comprehensive survey of Oregon hospitals to evaluate the use of EDIE by Emergency Department providers and care managers. Information was gathered from stakeholders using individual and group interviews, conducted either in person or by telephone. Overall the respondents highly value EDIE for improved care, cost and efficiency. Many ED providers reported the care they provide has been greatly enhanced by receiving EDIE notifications. They cited the visit information (number of visits, visit location and date of visit) and care recommendations as the most useful tools. Additionally, many noted a significant value in reduced time spent collating patient information obtained from disparate hospital and clinic records. Over half of the ED's surveyed have used EDIE information to coordinate care with outpatient providers.

Some barriers have been cited in the use of EDIE. These were time, staffing resources, physician buy-in, training and orientation to best practices. Areas for improvement identified by ED providers and care managers included increasing efficiency of technical workflows, improving the content of care recommendations and expanding the collaboration of primary care and the community at large.

During the course of interviews, several promising EDIE practices and stories of success were shared by a number of Emergency Departments. EDIE is used routinely by Oregon Health Sciences University (OHSU) ED providers and care managers to identify individuals with high utilization. OHSU has a committee (ED MD, RNs, SW) which regularly meets to review cases and develop or update care recommendations. They described EDIE care recommendations as a tool to coordinate care and outreach with staff when they visit other ED's.

> *"We had a homeless patient who had well over 100 visits in a year. Once we were able to start engaging him with outpatient support, the team working with him used the information in his care recommendation to successfully transition him into appropriate housing. The patient continues to be housed today and has had only 3-4 visits in the past 12 months".*
>
> *Drew Grabham, Social Worker*

Providence Portland Medical Center (PPMC) conducted a successful pilot program that was designed specifically to address the hospital's most vulnerable patients. Their goal was to reduce ED utilization by focusing on finding better, more effective treatment options to meet the patient's needs. They selected 50 of the most frequent ED utilizers, and worked extensively with each patient to develop a personalized multi-disciplinary plan. PPMC

utilized EDIE as a platform for collaborating and sharing treatment information among different care providers. Over the course of the intervention they saw an overall 46% reduction in emergency department utilization.

> *"EDIE has allowed me to increase my day-to-day engagement with our pilot patients. Whenever one of our patients visits the emergency department, I get an alert on my phone. I go to the hospital to find out why the patient is visiting the emergency department and take steps to support them in working with the care plan that we have collaboratively created"*
>
> *Ian Bruce, ED Care Coordinator*

At Sky Lakes Medical Center, the ED social workers review all EDIE notifications and meets with patients while they are still in the Emergency Department to connect them to resources in the community. They regularly develop care recommendations on identified patients and utilize the ED providers for consultation on information most valuable to them. Sky Lake ED social workers also regularly reach out to primary care offices and others who are involved with the patient to develop a shared care guideline.

> *"The clinics have seen what EDIE can do for ED staff, so now the PCP's come to me with ideas and requests for what they would like to see in the patient's care guideline"*
>
> *Sarah Allen, ED Social Worker*

Kaiser Permanente Northwest initially utilized EDIE to identify a group of approximately 250 "Super Utilizers" who visited the ED more than six times in six months. In 2014, an ED Intensive Case Management Core team (RN, SW, Navigator, ED MD team leader) was developed to support these individuals, better understand factors driving utilization and connect them with resources. Each identified member was assigned a main point of contact who has a comprehensive view of the member. They develop an interdisciplinary plan of care with the team (including the patient) and enter the key information into the EDIE care recommendations to communicate across settings. They cited using care recommendations has increased relationships with other people who are involved in the care of the member, created consistent messaging for the patient and allowed for more real-time coordination and communication. Over the three years of this program they have seen a 42% reduction in ED visits and 49% reduction in inpatient (IP) admissions for those individuals who have been enrolled in this program.

PreManage

There has been widespread adoption of PreManage by CCOs, commercial health plans, primary care and behavioral health. Most organizations have expressed value in having timely notifications of ED and inpatient utilization, knowing who is involved in the care of the patient, and ability to intervene quickly and track patients over time. Organizations who have developed care management workflows to address high needs and high utilizing individuals have reported that the tools have increased their efficiency and enabled them to more effectively communicate and coordinate care with others.

There have been a few challenges identified in the adoption and use of PreManage. Some organizations who have adopted PreManage do not have established mechanisms for working with high utilizing individuals. They have struggled to effectively implement processes, and in some cases, are using PreManage in a very limited way, if at all. OHLC, some CCOs and CMT have provided limited technical assistance for organizations. There have been a few software issues related to the provider attribution methodology. CMT is actively working to address these concerns. Due to the rapid widespread adoption of PreManage, there has been some fragmentation, resulting at times in multiple care recommendations being developed for the same individual.

State Medicaid Subscription

Oregon Health Authority supports a statewide Medicaid Subscription for PreManage for those groups responsible for coordinating and managing care for Medicaid enrollees including, but not limited to: CCO staff and partners , including physical health, dental care, and behavioral health case management partners; Medicaid Fee-For-

Service care coordination contractor(s) and OHA staff coordinating care for FFS enrollees; Critical behavioral health case management teams serving Medicaid enrollees (e.g. Assertive Community Treatment Teams, Community Mental Health Programs); Tribal clinics and Federally Qualified Health Centers (FQHCs) which are not covered under a CCO or community partner subscription and serve Medicaid patients; Care managers, such as long-term care discharge planners, for Medicaid enrollees receiving long-term supports and services; and the Office of Health Analytics staff who receive aggregate data from the vendor for monitoring the operations of the Medicaid program. The Subscription is currently covering 865,073 (approximately 89%) Medicaid lives.

CCOs

Fourteen CCOs have adopted PreManage or are in the process of adoption. CCOs who are utilizing PreManage have communicated that having "real time" member utilization information (ED and inpatient) has enabled them to work more effectively with members as well as coordinate care with the provider network.

CareOregon is using PreManage extensively to track hospital ED and inpatient activity among members resulting in timely outreach and care coordination. CareOregon staff create groups and cohorts in PreManage, which they report has significantly improved their ability to efficiently track high needs members and coordinate care both internally as well as with external partners. They also utilize PreManage for case finding to identify members who might be a good fit for a specific program.

> *"As a behavioral health care coordinator, I focus on psychiatric-related discharges for Medicare members. When I receive email notifications, I immediately connect with the ED case worker to inform them about the member and connections they have to community supports. We all work together to develop an OP plan for the member—it's a great example of care coordination and integration"*
>
> *CareOregon ENCC Care Coordinator*

Dental Medicaid Plans

Six Dental Medicaid plans (DCOs) have adopted PreManage or are in the process of adoption. They are actively tracking members who have been in the Emergency Department for non-traumatic dental pain. The designated staff follow-up with members to provide information and navigation to facilitate access to their primary care dental provider. The DCOs report that prior to the adoption of PreManage they did not receive consistent and timely information about ED utilization and therefore were not able to intervene in a timely manner.

Assertive Community Treatment teams (ACT)

There are 13 ACT teams throughout the state that have adopted PreManage. ACT teams manage high needs individuals who are affected by serious and persistent mental illness and other complex issues. The ACT team staff have described PreManage as a "game changer" because they are notified in real time when a patient is in the ED or admitted to the hospital. ACT team staff can either immediately go to the hospital, or phone the hospital to provide information and resources to assist patients. They also rely on ED notifications to "find" patients who they have been unable to locate due to factors such as homelessness. This enables them to provide in-person support and resources to get the individual reconnected to ongoing care.

Community Paramedicine

Jackson Care Connect CCO has extended their subscription to PreManage to Mercy Flights, which operates a community paramedicine program. The EDs in the Medford area refer patients to Mercy Flights who have had more than 4 visits in the previous 90 days. Mercy Flights does follow-up with patients for up to 60 days to address barriers to engaging in primary care, provide education and connection to community resources. Notifications are used to track the patients subsequent ED utilization and intervene real time in the ED if possible. In 2016, they worked with 126 patients and saw a subsequent 57% reduction in the use of ED by these individuals

Commercial Health Plans

In addition to the CCOs, most of the commercial health plans in Oregon have adopted PreManage. Similar to the CCOs, the commercial health plans express significant value in having real time notifications of member's ED and inpatient utilization. This has allowed earlier intervention to assist with engaging primary care if not already engaged, provide resources and coordinate care with others.

Primary Care

Over 200 primary care practices have adopted PreManage or are in the process of adoption. Those live on PreManage have communicated that knowing the patient's ED utilization has been very helpful in early identification of high needs, high utilizing patients who need additional care management. They also describe that the tools in PreManage (groups, cohorts, etc.) have increased the efficiency and effectiveness of their processes, requiring less work to build information about the patient from a variety of sources. Several primary care practices interviewed are now entering care recommendations. Northwest Primary Care has stated that they have entered care recommendations on nearly all their ED high utilizing patients. As a result, they are regularly contacted by ED providers and behavioral health care managers to coordinate care.

Behavioral Health

Approximately 30 community behavioral health organizations are currently using PreManage. They report not having reliable information about patient ED or inpatient utilization prior to having PreManage. Similar to primary care practices, they cite access to this information has provided earlier intervention with clients, allowing them to provide resources and support to avoid future ED and IP admissions. A statewide Behavioral Health EDIE/PreManage user community meets quarterly to develop the behavioral health use case and agree on appropriate information to share with ED providers.

Community Collaboration

In 2015 OHLC, OHA and CMT partnered with leadership from Pacific Source CCO, St Charles Health System and selected medical groups to pilot a community adoption of EDIE/PreManage tools to support efforts in reducing ED utilization and to improve cross organizational care coordination. The pilot was successful in clarifying roles and streamlining and standardizing workflows among organizations. Benefits cited by the pilot organizations included: reduced duplication of efforts, better insight into who is involved with the patient, improved relationships/collaboration between health plan, hospitals and clinics, and the ability to see the same information, discuss specific cases and assist each other.

Several additional communities have followed similar processes to begin collaboratively utilizing EDIE and PreManage tools to identify opportunities to improve care coordination and communication.

Other PreManage Use Cases

In addition to the use of PreManage tools in reducing ED utilization, a number of organizations have identified other benefits to improving care. Several organizations report that utilizing the inpatient notifications in PreManage allows for follow-up with patients post hospitalization in a more timely manner and potentially reduces readmissions. Options Counseling in Salem reported challenges in tracking and providing follow-up within 7 days to mental health clients discharged from the hospital. They relied on hospitals to send discharge information, often received days later. Within a year of receiving real time notifications from PreManage, they successfully implemented a workflow that resulted in 99% of patients receiving follow-up care within 7 days. Central City Concern and Cascadia Behavioral health have incorporated the ED and inpatient utilization information into their data systems to create a more cohesive picture of the patient. This information is then utilized to target interventions for individuals who are identified as high-risk for readmittance to ED or Inpatient. Care Oregon's Pharmacy team is using the information in PreManage to identify members with a high pharmacy risk score to assist with more timely comprehensive medication reconciliation post discharge.

Governance and Operations

Governance

The EDIE Utility has been overseen by the EDIE Utility Governance Committee which is comprised of a broad representation of stakeholders. Principles for governance and financing were mutually agreed upon and a tiered financing model to spread annual costs equitably across all participating organizations was developed and implemented. OHA and OHLC serve as co-sponsors of the EDIE Utility. OHLC was identified as the fiscal agent and has provided management services. The Governance Committee was charged with overseeing the relationships among stakeholders, CMT and management. This includes developing and overseeing parameters for data use and data reporting. The committee was also accountable for financial operations, as well as determining the scope of services and setting annual objectives and priorities.

Governance Committee members interviewed for this evaluation stated that they thought the utility model has worked very well. They described several factors as being key to the successful implementation. These included the early focus on gaining support from all stakeholders for a utility model, the development of a tiered financing model and including broad stakeholder representation on the Governance Committee. Many committee members cited the development and subsequent refinement of data use parameters and oversight for data reporting as an important and successful contribution by the Governance Committee.

Committee members interviewed also offered some opportunities for improvement. They expressed appreciation for the collaborative "organic" nature of the implementation of EDIE and PreManage, but suggested that a more structured approach may be needed in the future, including the development of strategic objectives with aligned operational metrics. Committee members expressed concern that participation was somewhat limited for those members who participated by phone. Other suggestions included providing opportunities for committee members to learn more about each other to better appreciate perspectives they might offer, and providing more in-depth information about topics in advance of meetings to enhance discussion and decision making.

Operations

The initial implementation of EDIE is generally viewed as very successful. There was strong collaboration between OAHHS, OHLC, OHA and CMT which resulted in all 60 Oregon hospitals having implemented the EDIE ADT data interfaces within 15 months. There were effective systems in place to track progress and resolve issues. The EDIE Operations Committee comprised of key organizational leaders and users of EDIE and PreManage, was charged with identifying operational priorities and tracking progress. These priorities included sharing best practices, promoting the widespread adoption and meaningful use of care recommendations, supporting the development of use cases that promote cross organizational care coordination and reduced ED utilization, and developing and distributing meaningful data analytics. The Operations Committee has also provided oversight to several community based and statewide learning collaboratives. In 2016 OHA provided a grant to OHLC to develop an online Learning Community to accelerate the sharing of best practices and workflows.

As adoption of PreManage increased, there was significant attention given to the adoption and use of PreManage and less focus on Emergency Department utilization of EDIE. This was recognized by the Operations Committee in 2016, resulting in a survey of ED providers to assess successes and challenges, as well as identify opportunities to optimize use of EDIE. There have been some challenges in the communications of best practices, toolkits and other support materials. CMT provided good technical assistance in the initial adoption of EDIE and PreManage, but as adoption has become widespread, it has been challenging for CMT to provide ongoing support for all users to optimize the use of EDIE and PreManage. There are limited resources available for ongoing staff training. In some situations, this has hindered organization's ability to leverage the use of the tools for improved care. Lastly, the initial data reports regarding ED utilization were high level and not viewed as particularly useful for process

improvement. Apprise and CMT have worked with data analytics staff from key organizations to develop a more meaningful ED utilization report. Processes are being developed for dissemination of these reports on an ongoing basis.

Conclusion, Recommendations

While the initial goals of the EDIE utility were not realized during the three-year pilot, the recent trend (2015-2016) appears to indicate that efforts to reduce ED utilization, particularly among high utilizers is beginning to show a reduction in ED visits. Further development of the data analysis may be of value to monitor progress and identify specific areas of focus for ongoing improvement efforts.

The EDIE Utility model has been a successful public private-partnership with statewide engagement of hospitals, health plans and CCOs and many clinical volunteers. The collaborative effort across multiple stakeholders has enabled economies of scale through coordination of effort, centralized management processes and an effective governance structure that provided effective oversight. Sustaining the structure and financing model as is for an additional three years will support continued efforts to reduce ED utilization. Strategic objectives and aligned operations metrics should be developed to guide the future work. OHA, OHLC and Oregon stakeholders are currently exploring a broader public-private partnership, the "HIT Commons" in 2018, leveraging lessons learned and successes of Oregon's EDIE Utility model.

EDIE and PreManage users consistently report that knowing the patient's ED and inpatient utilization, who the care team members are, and important patient information in real time has greatly improved the efficiency and effectiveness of their care. As the adoption of PreManage becomes more widespread, opportunities to work together across communities to coordinate efforts that better support high need, high utilizing individuals will likely yield significant improvements. Opportunities such as these require organizational commitment and sustained efforts over time. There should be continued support for these community collaborative efforts and sharing of best practices to accelerate overall progress.

The use of EDIE and PreManage has leveraged the ability to improve care beyond reducing emergency department utilization. There should be continued focus on identifying specific initiatives where the use of EDIE and PreManage tools can be leveraged to support transformation efforts (e.g., the opioid epidemic, etc.).

Regional Areas of Oregon Hospitals

Central Oregon

- Mid-Columbia Medical Center
- Pioneer Memorial Hospital – Prineville
- St. Charles Medical Center – Bend
- St. Charles Medical Center – Madras
- St. Charles Medical Center – Redmond

Eastern Oregon

- Blue Mountain Hospital
- Good Shepherd Medical Center
- Grande Ronde Hospital
- Harney District Hospital
- Lake District Hospital
- Pioneer Memorial Hospital – Heppner
- St. Anthony Hospital
- Wallowa Memorial Hospital

Northern Oregon

- Columbia Memorial Hospital
- Providence Newberg Medical Center
- Providence Seaside Hospital
- Samaritan North Lincoln Hospital
- Samaritan Pacific Communities Hospital
- Tillamook Regional Medical Center
- Willamette Valley Medical Center

Portland Metropolitan Area

- Adventist Medical Center
- Kaiser Sunnyside Medical Center
- Kaiser Westside Medical Center
- Legacy Emanuel Medical Center
- Legacy Good Samaritan Medical Center
- Legacy Meridian Park Medical Center
- Legacy Mount Hood Medical Center
- Oregon Health & Science University
- Providence Milwaukie Medical Center
- Providence Portland Medical Center
- Providence St. Vincent Medical Center
- Providence Willamette Falls Medical Center
- Tuality Healthcare

Southern Coast

- Bay Area Hospital
- Coquille Valley Hospital
- Curry General Hospital
- Lower Umpqua Hospital

Southern Oregon

- Asante Ashland Community Hospital
- Asante Rogue Regional Medical Center
- Asante Three Rivers Medical Center
- Mercy Medical Center
- Providence Medford Medical Center
- Sky Lakes Medical Center

Valley

- Good Samaritan Regional Medical Center
- PeaceHealth Cottage Grove Community Hospital
- PeaceHealth Peace Harbor Hospital
- PeaceHealth Sacred Heart Medical Center at RiverBend
- PeaceHealth Sacred Heart Medical Center University District
- Salem Hospital
- Samaritan Albany General Hospital
- Samaritan Lebanon Community Hospital
- Santiam Memorial Hospital
- Silverton Hospital
- West Valley Hospital