

Implementing an Academic Detailing Program with Massachusetts ACOs:

**Program Experience and
Summary Results from adviseRx**

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For the Massachusetts
Health Policy Commission**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	2
adviseRx	
adviseRx Milestones and Participants	
adviseRx PROGRAM DESIGN	4
Eligible Providers: Targeting Accountable Care Organizations	
Program Structure and Components: Training the Detailer	
Clinical Focus: Management of Type 2 Diabetes	
adviseRx PROGRAM IMPLEMENTATION.	7
Training of ACO Staff	
ACO Education Visits	
Impact of COVID-19	
adviseRx PROGRAM RESULTS.	9
Visit and Survey Data	
Outcomes Data	
CONCLUSION.	12

EXECUTIVE SUMMARY

The HPC was required to establish an evidence-based academic detailing program, designed to provide information and education on the therapeutic and cost-effective utilization of prescription drugs, pursuant to item 1450-1266 in the Commonwealth's budget for fiscal year 2019 (Chapter 154 of the Acts of 2018). Academic detailing offers prescribers a non-commercial, evidence-based source of information via peer-to-peer outreach. Using the \$150,000 in funding allocated by the legislature, the HPC developed an academic detailing program, branded as adviseRx, to support providers in Massachusetts. Through a competitive procurement process, the HPC selected Alosa Health Inc. to deliver the educational services to providers.

Based on stakeholder outreach, the HPC committed to a “train-the-detailer” approach to instruct select providers in performing academic detailing, and selected management of type 2 diabetes as the clinical focus of the adviseRx program. The HPC selected three accountable care organizations (ACOs) to participate in adviseRx following an application process. Each ACO selected two staff members (“ACO Educators”) to receive training in conducting peer-to-peer education to review current, evidence-based materials with prescribers in their own ACOs with supervision from Alosa Health educators. The ACO Educators participated in: independent study review of clinical trials and literature collected into learning modules by Alosa Health; three 60- to 90-minute webinars led by clinical experts; and an in-person training focused on the key skills needed to successfully complete each aspect of an academic detailing visit.

Alosa Health staff conducted ongoing program management with each of the participating ACOs in order to assist with program implementation, respond to any clinical questions, and share best practices. Alosa Health consultants were paired with the ACO Educators. They facilitated meetings, conducted field visits, shadowed the ACO Educators during sessions, and shared updates with the Alosa Health staff. At the close of the program, 104 visits were completed by all three participating ACOs.

The impact of COVID-19 on the adviseRx program was significant. Detailing visits began in January 2020 for two of the three participating ACOs, but all three ACOs halted program implementation in mid-March 2020 to redeploy resources in response to the COVID-19 outbreak. COVID-19 greatly impacted care delivery by the ACOs, as patient care shifted to telehealth at each participating ACO and opportunities to change prescriptions were curtailed. Though data collection was significantly impeded by the COVID-19 pandemic, providers who received an educational outreach visit did slightly increase their prescribing of newer therapies that were the focus of adviseRx visits relative to providers who did not receive a visit.

Because the adviseRx program was significantly impacted by COVID-19, its impact is difficult to gauge. However, the HPC did observe positive ACO responses to the adviseRx opportunity and indications that providers reached by the program may have begun shifting toward prescribing some newer agents. Together these promising findings suggest that interventions like adviseRx may support the provision of value-based, high-quality, and cost-effective care in the Commonwealth.

INTRODUCTION

Massachusetts has been a leader in promoting value-based care delivery. The Commonwealth's landmark health care cost containment law, Chapter 224 of the Acts of 2012, created both a benchmark for statewide growth of total health care expenditures and the Health Policy Commission (HPC) to monitor health care spending growth in Massachusetts. The HPC supports attainment of the benchmark in part by providing support for value-based care and innovative care delivery models, including through investment programs for provider organizations and administration of a certification program for accountable care organizations (ACOs). As providers work on delivery system reforms and take accountability for costs incurred by their patient populations, the cost of prescription drugs remains a concern. With a steady stream of new drugs of differing efficacies and prices coming to market, there is an opportunity for targeted education to help doctors and nurses make informed prescribing decisions as they work to manage costs and provide high-value care.

Given the pace at which new medications are developed, numerous medications have come to market after primary care providers completed their training and thus provider comfort with newer classes can be limited. Similarly, new evidence on prescribing and treatment practices continues to be published at a rapid rate. Providers are challenged to keep up to date on the latest evidence by reading guidelines or the studies themselves due to the massive amount of literature published on common primary care conditions. Common avenues for obtaining information about new drugs have significant deficiencies: standard Continuing Medical Education offerings may not fully address a prescriber's concerns or knowledge needs, and conversations with pharmaceutical representatives may not provide comprehensive information about patient selection, treatment monitoring, and side effects.

The HPC was required to establish an evidence-based academic detailing program, designed to provide information and education on the therapeutic and cost-effective utilization of prescription drugs, pursuant to item 1450-1266 in the Commonwealth's budget for fiscal year 2019 (Chapter 154 of the Acts of 2018). Academic detailing offers prescribers a non-commercial, evidence-based source of information via peer-to-peer outreach. It can facilitate more informed decision-making by prescribers and thereby improve the quality and affordability of care delivered.^{1,2} The academic detailing model has potential to empower physicians to provide better care for patients, contain rising costs, and help patients obtain safer, more effective, and more affordable drug therapy.

adviseRx

Using the \$150,000 in funding allocated by the legislature, the HPC developed an academic detailing program, branded as adviseRx, to support providers in Massachusetts. Academic detailing is an educational technique first developed in Massachusetts by Dr. Jerry Avorn and his colleagues at Brigham and Women's Hospital, funded by a federal grant to Harvard Medical School.³ The practice serves as an impartial alternative to the industry-based one-on-one drug marketing technique known as pharmaceutical detailing. Conversations with an academic detailer allow providers to fully understand new treatment guidelines, patient selection, dosing adjustments, monitoring, and management of side effects or complications.

The adviseRx program was designed to build expertise in academic detailing among select clinicians in participating provider organizations. Through a competitive procurement process, the HPC selected Alosa Health Inc. to deliver the educational services to providers. Alosa Health Inc. is a nonprofit organization that has been developing programs that provide health care professionals with unbiased, non-commercial information on the best ways to manage clinical problems. Alosa Health has delivered academic detailing since 2004 in several states.

adviseRx MILESTONES AND PARTICIPANTS

Following stakeholder outreach and program design (described below), the HPC and Alosa Health developed an application for provider organizations and distributed it publicly in May-June 2019 (see Appendix 1). Four ACOs submitted applications, and all four were accepted into the program in September 2019, though only three of the ACOs implemented academic detailing programs.ⁱ

ⁱ Following the Alosa-led training, one ACO withdrew from the program, citing insufficient staff capacity to participate.

Table 1: adviseRx-participating Accountable Care Organizations

ACO	Participating Educator Types	adviseRx Program Approach
Beth Israel Lahey Health Performance Network	<ul style="list-style-type: none">- 1 Clinical Pharmacy Specialist (PharmD, MS MTM)- 1 Clinical Pharmacist (RPh)	Build on previously identified prescriber variation and provider willingness to engage and improve care for type 2 diabetes across the entire organization
Cambridge Health Alliance	<ul style="list-style-type: none">- 1 pharmacotherapist (PharmD)- 1 nurse educator (MSN RN)	Leverage pharmacotherapy and nursing presence in ambulatory sites and enhance existing pathways and guidelines that support decision making for prescribers
Signature Healthcare	2 Clinical Pharmacists (RPh)	Extend pilot program to improve medication management for patients with uncontrolled diabetes and improve care for type 2 diabetes organization-wide

Training began in November 2019 with a two-day session conducted by Alosa Health at its Boston headquarters. The training program provided two educators from each ACO with tools to establish credibility, communicate with physicians, and promote behavior change. Following training, ACO academic detailers were deployed into their respective sites to begin meeting with providers beginning in the first quarter of 2020. The academic detailing initiative ended in March 2020 due to the COVID-19 pandemic. At the close of the program, 104 visits had been completed by all three participating ACOs.

ADVISERX PROGRAM DESIGN

Design of the adviseRx program began with a period of stakeholder engagement by the HPC. Prospective participants were surveyed to understand their clinical priorities and receptivity to potential program designs. Fourteen provider organizations subsequently attended a virtual information session hosted by the HPC in June 2019.

ELIGIBLE PROVIDERS: TARGETING ACCOUNTABLE CARE ORGANIZATIONS

The HPC decided at the outset of program design to target the adviseRx opportunity toward its cohort of Certified ACOs. Sixteen provider systems in Massachusetts are certified by the HPC as ACOs, which are groups of physicians, hospitals, and other health care providers who come together to provide patient-centered, coordinated care to their patients, with the goal of improving quality and reducing health care spending growth.⁴ The ACO model is a major vehicle for supporting delivery system transformation that encourages the provision of value-based, high-quality, and cost-effective care in the Commonwealth. Thus HPC-certified ACOs were a logical target for adviseRx. This academic detailing initiative was intended to enhance ACOs' quality improvement efforts; help ACOs establish common treatment protocols; and support ACO clinicians with specific prescribing needs or challenges.

PROGRAM STRUCTURE AND COMPONENTS: TRAINING THE DETAILER

The HPC and Alosa Health contemplated two possibilities for structuring the adviseRx program: academic detailing provided directly to ACO prescribers by Alosa Health's educators, or a "train-the-detailer" approach to instruct select ACO providers in performing academic detailing.

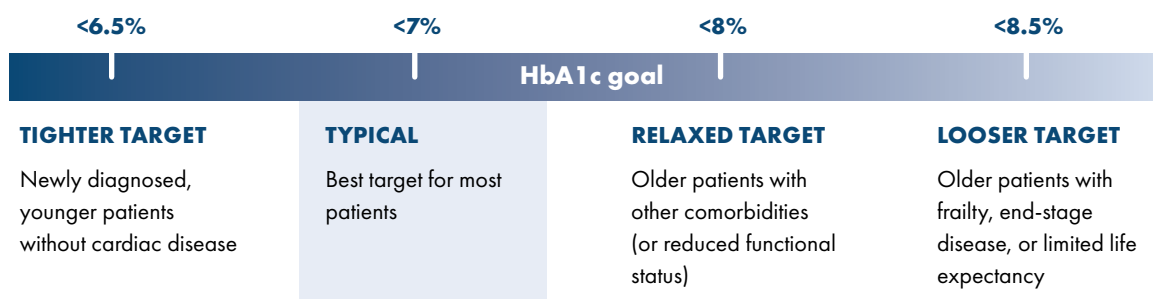
The latter approach was chosen in order to build capacity for conducting academic detailing in-house at participating ACOs. This approach included the identification of two staff members at each participating ACO to develop skills to effectively educate colleagues on evidence-based prescribing practices. Over a five-month period, ACO staff participants were trained in current evidence-based treatment recommendations for type 2 diabetes, as described below.

CLINICAL FOCUS: MANAGEMENT OF TYPE 2 DIABETES

The HPC and Alosa Health selected management of type 2 diabetes as the clinical focus of the adviseRx program based on stakeholder outreach that revealed this to be a major clinical priority for ACOs in Massachusetts.

Clinical Significance. Type 2 diabetes is a common health condition that affects more than 30 million Americans, including nearly nine percent of Massachusetts residents as of 2015.^{5,6} Diabetes is linked with serious complications at a patient level such as cardiovascular events (e.g., stroke, heart attack), eye injury (e.g., retinopathy), kidney injury (e.g., nephropathy) or vascular events (e.g., amputation). For practices and health systems, diabetes management is tied to key quality indicators that may be linked to reimbursement, such as the proportion of patients significantly above goal (e.g., those with a hemoglobin (Hb) A1c > 9%).⁷ Figure 1 below shows the HbA1c goal based on patient characteristics.

Figure 1: HbA1c goals for diabetics



For many years treatment options were limited to insulin, metformin, sulfonylureas, and thiazolidinediones. Efficacy for these agents is defined primarily in terms of reducing HbA1c, a three-month average of blood sugar levels. However, these agents, excluding metformin, tend to produce side effects such as weight gain and an increased risk of low blood sugar (hypoglycemia). The introduction of dipeptidyl peptidase-4 (DPP-4) inhibitors in 2006 offered new treatment options that caused neither weight gain nor low blood sugar.

Potential Cost Savings on Diabetes Medications. Metformin has long been recognized as the first-line treatment for diabetes due to a reduction in microvascular diabetes-related outcomes, lower risk of hypoglycemia and weight gain compared to other available treatment options, and positive outcomes in early clinical trials.⁸ Despite this, only about 58% of patients are started on this medication.⁹ Other patients are started on a sulfonylurea (23%), certain types of thiazolidinediones (6%), or a DPP-4 inhibitor (13%).¹⁰ These clinical decisions can have important impacts on cost. Starting a patient on a DPP-4 inhibitor, for instance, is significantly more costly than starting a patient on metformin. By starting with metformin instead of second-line therapies, prescribers have opportunities to reduce patient costs for initial diabetes care, a factor that may promote patient adherence to treatment. Table 2 on the following page shows the potential cost-savings of starting with metformin.

Updated Treatment Guidelines. Newer agents, such as glucagon-like peptide 1 (GLP-1) receptor agonists and sodium-glucose cotransporter 2 (SGLT-2) inhibitors, have demonstrated not only effects on HbA1c reduction but also positive cardiovascular effects. Where some older drugs were associated with an increased risk of heart attack, in the past five years trials showed cardiovascular protection (e.g., reduced risk of heart attack and stroke) from the use of newer medications. This protective effect has dramatically changed the treatment of diabetes. Instead of focusing on HbA1c alone, the guidelines have shifted to recommending medications that can also reduce cardiovascular events and protect the kidneys, especially in patients who have already had a cardiovascular event or with preliminary signs of renal impairment.^{11,12,13} These new agents (GLP-1s and SGLT-2s) have now become a standard of care, second-line option after metformin, for many patients with diabetes.

Discussions with an academic detailer can convey the role of GLP-1s for weight loss in patients with diabetes, or clarify the role of an SGLT-2 inhibitor for the management of a patient with diabetes and heart failure. Ultimately this builds prescriber knowledge of the new standards of diabetes care, increases comfort with monitoring use, and can lead to more patients receiving guideline-directed care recommendations.

Table 2: Drug Classes for Treatment of Type 2 Diabetes¹⁴

Drug Class (Approval Year of First Drug in the Class)	Exemplar Drugs in the Class	HbA1c Lowering Potential	Additional Clinical Benefits	Hypoglycemia risk	Weight effects	Risks, Side Effects, and Precautions	Typical Cost for a 30-Day Supply
First line therapy							
Biguanide (1995)	Metformin (Glucophage)	1–1.5	Cardiovascular outcomes	No	Loss	Gastrointestinal intolerance	\$4
Second line therapies							
SGLT-2 inhibitors (2013)	Canagliflozin (Invokana) Empagliflozin (Jardiance)	0.5–1	Cardiovascular outcomes, heart failure	No	Loss	Urinary tract infections (UTI); ketoacidosis, genital infections; hypotension; bone fractures; amputation	\$476–\$987
DPP-4 inhibitors (2006)	Linagliptin (Tradjenta) Sitagliptin (Januvia)	0.5–1		No	Neutral	Potential risks of heart failure; joint pain; pancreatitis	\$174–\$455
GLP-1 receptor agonists (2005)	Dulaglutide (Trulicity) Liraglutide (Victoza)	1–1.5	Cardiovascular outcomes	No	Loss	Gastrointestinal side effects; pancreatitis	\$617–\$773
Thiazolidinediones (1999)	Pioglitazone (Actos)	1–1.5	Cardiovascular outcomes	No	Gain	Increased risk of heart failure; bone fractures; bladder cancer	\$9
Sulfonylureas (1984)	Glyburide (DiaBeta, Glynase) Glimepiride (Amaryl)	1–1.5		Yes	Gain		\$4–9
Insulin (1982)	Aspart (Novalog), Lispro (Humalog), Glulisine (Apidra), Regular (Humulin R), NPH (Humulin N), Degludec (Tresiba), Detemir (Levemir), Glargine (Lantus, Toujeo)	Variable based on dose		Yes	Gain		\$25–\$374*

* price is per 1000 units of insulin

ADVISERX PROGRAM IMPLEMENTATION

In September 2019, the HPC and Alosa Health shifted from program design to program implementation by holding introductory calls on program goals and objectives with each of the participating ACOs. The ACOs identified key programmatic objectives: increased knowledge of updated treatment guidelines, better understanding of comorbidities, cost-reduction due to changes in prescribing patterns, and increased familiarity with new agents (GLP-1s and SGLT-2s).

TRAINING OF ACO STAFF

Under the adviseRx program’s “train-the-detailer” model, two ACO staff members from each ACO (“ACO Educators”):

1. Received training on up-to-date, evidence-based treatment recommendations for type 2 diabetes via independent study, clinical content webinars, and follow-up seminar calls;
2. Obtained the skills necessary to educate others within their ACO on evidence-based prescribing practices via a two-day skills-based training; and
3. Conducted educational visits with prescribers in their ACO. Each ACO Educator was paired with an Alosa Health mentor to help guide and continue skills development as the ACO Educators met with clinicians in the field.

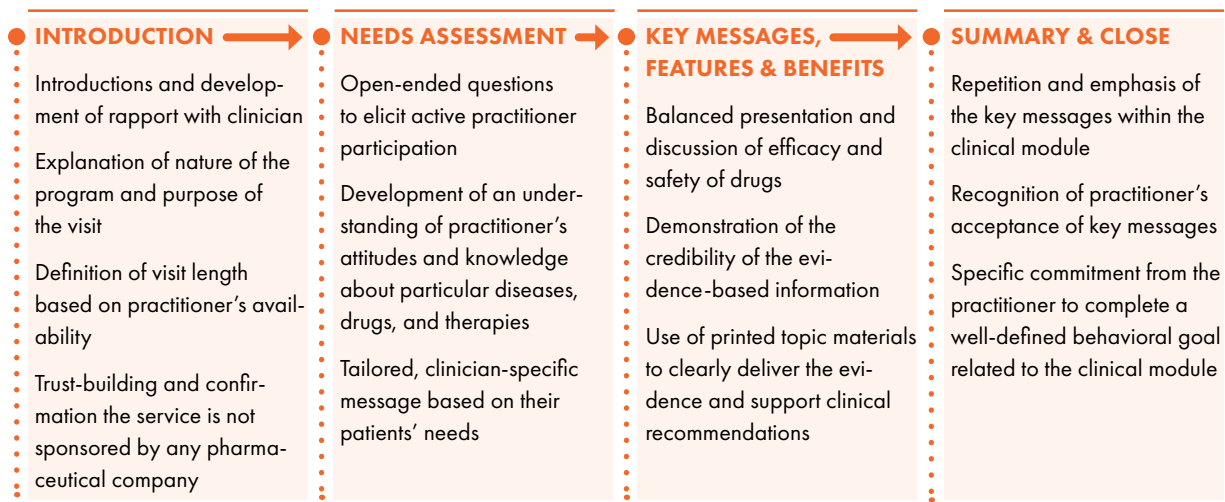
Independent Study and Pre-Training Clinical Review. ACO Educators began their training with eight hours of independent study review of clinical trials and literature collected into learning modules by Alosa Health. The ACO Educators then participated in three 60- to 90-minute webinars led by clinical experts. The webinars provided a focused clinical review in advance of the in-person training, allowing for more interactive sessions during in-person training. The webinars were held in October and November 2019 and covered:

- Prediabetes and treatment goals,
- Insulin therapy, and
- Pharmacologic management,
- Care in older adults.

In-Person Skills Training. Clinical content in the form of electronic academic detailing materials (i.e., educational materials to be used during a detailing visit) was sent to the participants before the training to allow them to gain familiarity with it. At the live training, a hard copy resource was provided to the trainees. Each educational module typically includes four documents: a comprehensive “evidence document” that provides an overview of the literature; a shorter full-page brochure that summarizes key points; a small reference card that fits into physician coat pockets; and an accompanying patient brochure or brochures that physicians can use for patient education.

Beyond reviewing the clinical content ACO Educators would be conveying to prescribers in their ACOs, the in-person training focused on the key skills needed to successfully complete each aspect of an academic detailing visit: Introduction; Needs Assessment; Key Messages, Features & Benefits; and Summary and Close.

Figure 2: Components of an Academic Detailing Visit



Trainees received key insights into requirements for successful academic detailing services, as well as practical tips. An overview of key components of the in-person skills training session is available in Table 3 below.

Table 3: Overview of In-Person Skills Training

Training Component	Content
Clinical content supplement	Clinical supplement to three clinical webinars and Q&A with content experts
Introduction to academic detailing	Immersion in basic concepts on social marketing (an approach that combines ideas from commercial marketing and the social sciences to influence behavior) ¹⁵ , problematic prescribing, and academic detailing
Practice detailing sessions (small group sessions)	<ul style="list-style-type: none"> - Coaching and personal support with individualized feedback - Exposure to a variety of techniques and communication strategies effective in providing educational outreach
Role-playing exercise	Exercises with community-based physicians to help trainees practice their skills; sessions were videotaped and sent to trainees for review

At the conclusion of this training, ACO Educators were fully equipped to effectively deliver educational messages to providers, using the best practices and social marketing techniques described earlier. The complete training agenda and results from participant surveys can be found in Appendix 2.

ACO EDUCATION VISITS

The foundation of the academic detailing model is peer-to-peer education sessions. A typical session or visit is conducted one-on-one with a health care practitioner and an educator, during which the participants review current, evidence-based materials in a clinically relevant way by determining and addressing the practitioner's needs. Under the train-the-detailer approach adopted for the adviseRx program, ACO Educators were trained to conduct these visits with prescribers in their own ACOs with supervision from trained Alosa Health mentors.

Ongoing Program Consultation. Following the in-person training, ACO Educators shifted their focus from training to conducting visits. Throughout this time, Alosa Health staff conducted ongoing program management with each of the participating ACOs in order to assist with program implementation, respond to any clinical questions, and share best practices. Expert detailer-mentoring pairs assigned during the in-person training were an important part of the ongoing program consultation.

Expert Detailer Coaching and Field Mentoring. In order to best support the adviseRx program, two Alosa Health consultants ("Alosa Health Mentors") were paired with the ACO Educators. They facilitated meetings, conducted field visits, shadowed the ACO Educators during sessions, and shared updates with the Alosa Health staff. During each coaching meeting, the coaches completed a check-in form that was sent to Alosa Health staff. These check-in forms were then reviewed as a piece of Alosa Health's ongoing program consultation. Additional information on the participating coaches is available in Appendix 5.

IMPACT OF COVID-19

The impact of the COVID-19 pandemic on the adviseRx program was significant. Detailing visits began in January 2020 for two of the three participating ACOs (one ACO was delayed until early March 2020). But all three ACOs halted program implementation in mid-March 2020 and cancelled scheduled academic detailing visits to redeploy resources in response to the COVID-19 outbreak.

In addition to curtailing the number of educational visits, COVID-19 greatly impacted both care delivery and data collection by the ACOs, as patient care shifted to telehealth at each participating ACO. For diabetic patient panels, HbA1c levels were no longer being collected, as these patients were not able to complete in-person lab testing. Additionally, telehealth visits constrain how aggressively providers can adjust treatments since they cannot take action without the necessary lab testing. Consequently, providers were limited in prescribing new medications, including the newer agents that were the focus of these educational visits.

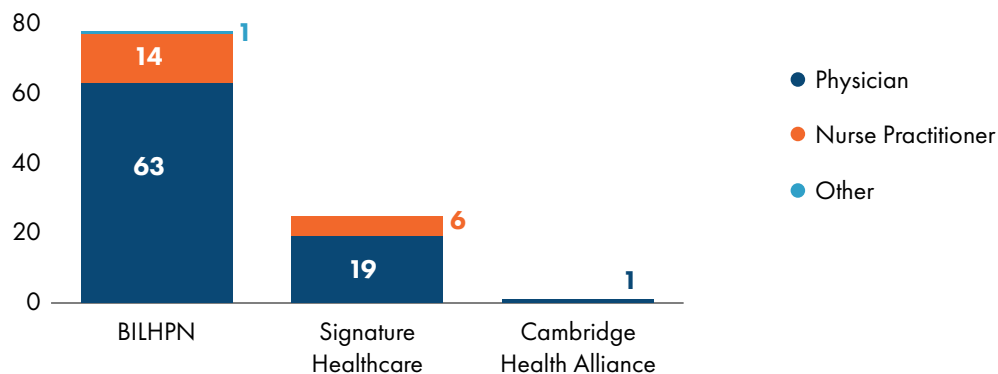
ADVISERX PROGRAM RESULTS

Each ACO agreed to track and report on key metrics as a condition of participation in the adviseRx program. However, due to COVID-19 related disruptions in care delivery and data collection, opportunities to identify an impact on outcomes from adviseRx in the months following the program's implementation were significantly limited.

VISIT AND SURVEY DATA

ACO Educators at each of the ACOs tracked total visits completed. A “visit” is defined as a unique, one-on-one encounter between a health care practitioner and a clinical educator. These visits can further be separated by practitioner type (nurse practitioners or physicians). The tables and graphs in this section are based on visit data reported by each ACO Educator.

Figure 3: Total Number of Visits per ACO, by Practitioner Type



To evaluate program impact on prescribers' knowledge and behavior, post-intervention surveys were given to participating providers after educational outreach visits. The post-visit survey consisted of seven statements that respondents ranked on a Likert scale of 1–5, in which a ranking of 1 represents strong disagreement, a ranking of 3 is neutral, and a ranking of 5 represents strong agreement. The table below shows average responses per statement across all surveys received. (For results per ACO, see Appendix 3.)

Table 4: Post-Visit Provider Survey Results (n=26)

	Avg. Response
Information provided by the adviseRx educator will benefit the well-being of my patients.	4.88
The educator presented factors that drive medication selection, including the evidence on the cardiovascular benefit of select glucose-lowering medications.	4.88
The information provided will impact the way I make clinical decisions in caring for my patients.	4.80
The adviseRx educator provided current, non-commercial, evidence-based information that will enable me to improve patient care.	4.80
The adviseRx educator presented tools to assist with diet and lifestyle education for patients with prediabetes and diabetes.	4.80
The educator described a strategy for reducing treatment burden for patients on insulin.	4.69
As a result of this visit, I will simplify insulin regimens in patients who are having recurrent hypoglycemia.	4.57

Scoring results from the surveys were consistently positive, with clinicians indicating that the information provided by the ACO Educators would impact clinical decision-making and benefit patients.

OUTCOMES DATA

The HPC and Alosa Health planned to collect data from the ACOs on two outcomes:

- 1. Medications/classes of medications prescribed to patients.** The impact of the program on prescribing patterns could potentially be discerned from the proportions of prescriptions written for categories of medications representing the most common prescriptions related to the management of type 2 diabetes: biguanides, SGLT-2 inhibitors, GLP-1 receptor agonists, DPP-4 inhibitors, thiazolidinediones, sulfonylureas, and insulin. Given the adviseRx program objective of increasing understanding of the emerging standard of care for second-line options after metformin, it could be expected that prescriptions written for newer agents such as SGLT-2s and GLP-1s would increase after participation in the program.
- 2. Aggregate patient HbA1c levels pre- and post-educational intervention.** As previously mentioned, HbA1c is a measure of blood sugar control over a 3-month period. Average patient HbA1c levels can be collected pre-visit and post-visit, in consideration with changes in prescriptions written, to evaluate the impact of the adviseRx program in each ACO. As providers begin prescribing more of the newer agents discussed above, their diabetic patient panels may have lower aggregate HbA1c levels. Additionally, for certain glucose-lowering medications patient panels would begin to see cardiovascular benefits, though capturing this effect was beyond the scope of this evaluation.

Unfortunately, data collection was significantly impeded by the COVID-19 pandemic. The truncation of the implementation period and changes in clinical practice patterns associated with the pandemic limited the utility of data on patient HbA1c and medication classes prescribed as potential indicators of programmatic impact. Moreover, the pandemic put significant stress on the ACOs, placing limits on their staffing and necessitating reallocation of information technology resources away from adviseRx program reporting requirements and toward the pandemic response.

As discussed above, beginning in March 2020, the ACOs relied predominately on telehealth to conduct appointments and deliver care to patients. Many diabetic patients did not participate in these telehealth appointments since completing labs to measure HbA1c levels is an important component of their care. Consequently, HbA1c levels were not measured from mid-March 2020 until in-person care resumed. Moreover, without labs to measure HbA1c and gather other patient information, providers have limited ability to adjust treatments and medications. Most ACO providers were thus unable to adjust medications and prescribe new medications during the COVID-19 pandemic.

Due to these limitations in reliable HbA1c data, the only available outcome measure to evaluate the impact of adviseRx was the percentage of prescriptions written by therapeutic class of medications used to manage type 2 diabetes. However, due to technical and staffing issues at one ACO, data on prescribing patterns was available from only one of the two participating ACOs that conducted multiple visits before adviseRx implementation concluded (representing 78 of 104 completed visits). While these limitations must be noted, the available data (shown in Table 5) do suggest some potential positive impact from the adviseRx program.

Table 5: Total prescriptions written (% of total), by medication class

	adviseRx-participating Prescribers			Other ACO Prescribers		
	Baseline Data Collection Period	Evaluation Period	Variance	Baseline Data Collection Period	Evaluation Period	Variance
	Aug 1–Dec 31, 2019	Apr 1–Jun 30, 2020		Aug 1–Dec 31, 2019	Apr 1–Jun 30, 2020	
Biguanide (Metformin)	1,771 (40.6%)	1,174 (38.9%)	-1.7%	16,154 (42.2%)	10,645 (41.5%)	-0.7%
Insulins	1,163 (26.7%)	849 (28.1%)	1.5%	8,500 (22.2%)	5,471 (21.3%)	-0.9%
GLP-1 receptor agonists	382 (8.8%)	272 (9.0%)	0.3%	3,690 (9.6%)	2,756 (10.7%)	1.1%
SGLT-2 inhibitors	238 (5.5%)	199 (6.6%)	1.1%	2,341 (6.1%)	1,743 (6.8%)	0.7%
Sulfonylureas	571 (13.1%)	383 (12.7%)	-0.4%	5,632 (14.7%)	3,761 (14.7%)	-0.04%
DPP-4 inhibitors	208 (4.8%)	119 (3.9%)	-0.8%	1,509 (3.9%)	982 (3.8%)	-0.1%
Thiazolidinediones (TZD)	27 (0.6%)	15 (0.5%)	-0.1%	493 (1.3%)	308 (1.2%)	-0.1%
Prescriptions All Classes Total	4,360	3,017		38,319	25,666	

One notable result is that providers who received an educational outreach visit increased the proportion of SGLT-2 inhibitor prescriptions written six months after the intervention period (+1.1%) more than did providers who were not visited by an academic detailer (0.7%). This is consistent with the fact that the adviseRx educational outreach sessions were often focused on recently published clinical trials of SGLT-2 inhibitors and the identified benefits these approved medications have for patient long-term health.

Prescriptions for another standard-of care medication class for second-line therapy, GLP-1 agonists, also rose slightly as a proportion of total prescriptions written over the implementation period. However, the increase was less for the adviseRx-participating providers (0.3%) than for other ACO prescribers (1.1%). This may suggest a need for greater emphasis on this medication class in academic detailing visits.

Results related to insulin and metformin, which also might be expected to increase as a proportion of prescriptions written after an academic detailing visit, were mixed. The proportion of insulin prescribing rose among prescribers who received a visit (+1.5%) but fell among prescribers who did not (-0.9%). However, metformin, the inexpensive first line therapy, was underutilized in clinical practice overall. While metformin prescriptions initially comprised approximately 40-42% of the type 2 diabetes prescribing, metformin declined as a proportion of prescriptions written by both groups during the intervention. This result underscores the need to continue to educate providers about the benefits of this low cost, first-line therapeutic option.

The increase in prescriptions written for SGLT-2, GLP-1, and insulin was coupled with a decrease in prescribing for other medication classes, particularly for the adviseRx participant group. For example, DPP-4 inhibitor prescribing, which was deprioritized in the latest type 2 diabetes treatment guidelines, declined by 0.8% among prescribers visited by an academic detailer compared to 0.1% for non-visited providers.

CONCLUSION

As the Massachusetts health care community continues to pursue value-based care delivery, the rising cost of prescription drugs remains a pressing concern for providers and patients in the Commonwealth. Greater provider awareness of the most up-to-date evidence-based guidelines can encourage prescribing decisions that support better, more cost-effective care. The HPC's adviseRx program funded by the Massachusetts Legislature attempted to fill some of this need, but the program faced serious challenges due to the COVID-19 pandemic. These challenges included truncation of program implementation due to providers' reallocation of resources, changes in clinical practice patterns, and related data limitations that inhibited program evaluation.

Despite these challenges, there was clear evidence of provider organization interest in the adviseRx programming, and a general appetite for opportunities to access unbiased, evidence-based guidance on prescribing in a variety of clinical areas. Initial strong interest from ACOs during program development, informal feedback from participating ACO Educators, and formal survey responses from providers visited by the ACO Educators all suggested considerable demand for and appreciation of this information. However, even though there was strong demand for the information, ACO capacity to engage in formal academic detailing sessions was limited. This suggests a need to explore the possibility of designing more individualized programs tailored to ACO-specific work, as well as a need to examine the merits of adviseRx's train-the-detailer model to build in-house capacity at ACOs relative to providing direct detailing. Navigating the challenge of limited provider bandwidth in the future may require finding alternative ways to engage providers in this work and to incorporate academic detailing curriculum content into provider workflows.

Because the adviseRx program was significantly impacted by COVID-19, its impact is difficult to gauge. However, the HPC did observe positive ACO responses to the adviseRx opportunity and indications that providers reached by the program may have begun shifting toward prescribing some newer agents. Together these promising findings suggest that interventions like adviseRx may support the provision of value-based, high-quality, and cost-effective care in the Commonwealth.

ENDNOTES

- 1 Soumerai SB, Avorn J. Economic and policy analysis of university-based drug “detailing”. *Med Care*. 1986;24(4):313-331.
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