

Overview of QI Project Designated for Part IV MOC Credit

1. Title of QI project:

Using the Combined Actionable Report (CAR) and the Combined Gap Report to Improve LDL Testing and LDL Levels for Patients with Diabetes or with Vascular Disease

2. Timeline (Data collection periods largely align with intervention dates so that the majority of a data collection period follow the intervention or the adjustment and the data largely reflects their effects.)

Jan.–Dec. 2009 Baseline data collection – Data 1.
 May – June 2010 Intervention
 Jan.–Dec. 2010 Post intervention data collection – Data 2 (intervention affects last 6–7 months, adjustment affects last couple of months).
 Sep.–Dec. 2010 Adjustment (follow up intervention)
 Jan.–Dec. 2011 Post adjustment data collection – Data 3 (adjustment affects last 6–8 months)

3. Patients involved: Adults with diabetes or with vascular disease

4. Physician specialties and/or subspecialties involved:

General Internal Medicine, Med-Peds (using CareWeb.)

PLAN

5. Problem and project aim:

Problem: Better management of LDL has been shown to decrease cardiovascular disease and its complications in these patient populations. Based on National Guidelines, patients with diabetes or vascular disease need a yearly LDL test and need to maintain their LDL cholesterol < 100 mg/dl. However, at UMHS in 2009, for General Medicine only 87% of DM patients and 85% of CAD patients had a yearly LDL test done and only 59% of the DM patients and 62% of the CAD patients had LDL cholesterol < 100 mg/dl. In addition to improving patient well-being, this care for patients with DM and with CAD is a component of our organization’s pay-for-performance demonstration projects that link payments for care to meeting standards for care.

Aim: Increase % of adult patients with DM or CAD with 1) LDL tested yearly and 2) LDL < 100 mg/dl.

Organizational goals are:

- LDL test completed = 90%
- LDL test of < 100 mg/dl = ≥ 62%

Compared to those who currently had LDL measured, individuals not having LDL tests measured are expected to have a lower proportion of LDL < 100 mg/dl. Increasing the percent of individuals with LDL measured was expected to lower the percent of individuals with LDL < 100 mg/dl. Therefore, continuing to maintain and increase the percent with LDL < 100 mg/dl is important as the population of individuals with LDL measured increases.

(Data 1) **6. Baseline measures of performance:**

- a. What is measured? In 2009, percent patients with: 1) LDL measured, 2) LDL < 100 mg/dl
- b. Results

Time Period	Patients with Diabetes			Patients with Vascular Disease		
	N	LDL Tested	LDL < 100 mg/dl	N	LDL Tested	LDL < 100 mg/dl
1-12/2009	4,941	87%	59%	2,894	85%	62%

(Note: Individual patients with both diabetes and vascular disease are included in both patient groups.)

DO

7. Intervention(s):

- a. What is the intervention? Physicians are provided structured, patient-specific information to help guide the patient encounter

Before the baseline period for this project, an earlier project involved developing a Diabetes Actionable Report (DAR). This report was produced for individual patients with diabetes a day ahead of scheduled visits. It identified the patient's status on measures of diabetes care performance, including LDL testing and level. It prompted physicians to address needed annual LDL testing and LDL levels < 100 mg/dl. Baseline data reflected the impact of the DAR on LDL measures.

A Combined Actionable Report (CAR) was developed for this project that addressed measures of care for several chronic diseases. It was based on the previously developed DAR, expanding the approach from diabetes to include vascular disease, heart failure and asthma. Data are assembled from electronic medical records that identify a patient's status on measures of care for several chronic diseases. This report replaced the DAR, which was only for patients with diabetes and did not include any other chronic conditions. For the CAR, basic clinical logic is built into the report so that it organizes the clinical information into a clinically useful layout and prompts the clinician regarding the services needed for individual patients. The services include performing an annual LDL test for all patients with diabetes or with vascular disease and checking whether LDL is < 100 mg/dl.

Since many patients have more than one chronic medical condition (e.g., both diabetes and vascular disease), this report helps organize the planning of care across several medical conditions simultaneously. The CAR provides guidance concerning a broader range of medical conditions, making it more useful in helping physicians organize and prioritize problems to address in the patient encounter.

The utilization of the CAR over the previous "diabetes only" reporting prompts, was expected to have a greater improvement on LDL measures for patients with vascular disease, since no prompts had previously been provided for the care of these patients (unless they had both diabetes and vascular disease). Only a little improvement was expected on LDL measures for patients with diabetes, since the prompts were similar to those previously provided by the DAR for these patients.

Data were collected daily from the electronic medical record using lab results, the problem summary list, word string searches and billing data. For patients in the diabetes and vascular disease patient registries, the CAR for an individual patient had to be printed the day prior to the patient visit. The printing was done in batches, meaning that The CARs for all the patients were printed out at the same time, sorted by arrival time and physician, and left in the medical assistant's station to be added to the patient's paperwork that print out when the patient arrives.

Printing, forwarding, and utilizing the report involved the entire team in a clinic. Training was provided to all relevant clinics, including the clinical and administrative leaders who oversee clinic operations, the front office staff who print the forms, the medical assistants who add them to the material for the clinician, and the clinicians who utilize them to organize and conduct the patient encounter.

- b. When (time period) does the intervention occur? May-June 2010.

CHECK

(Data 2)

8. Post-intervention measures of performance

- a. What was measured? (Same) In past year, % patients with: 1) LDL measured, 2) LDL < 100 mg/dl
- b. What time period was measured? Jan. – Dec. 2010
- c. What were the results?

Time Period	Patients with Diabetes			Patients with Vascular Disease		
	N	LDL Tested	LDL < 100 mg/dl	N	LDL Tested	LDL < 100 mg/dl
1-12/2009	4,941	87%	59%	2,894	85%	62%
1-12/2010	5,020	86%	60%	2,837	88%	69%

(Note: Individual patients with both diabetes and vascular disease are included in both patient groups.)

**ACT/
ADJUST**

9. Plan for review:

Review: Shortly after implementing the CAR, operational problems with its use were identified. Later, when actual performance data were available, data on the LDL measures were assembled and reported midyear (July) and at the end of the year (December, the above data). The operational problems and subsequent performance data by site were provided to the Diabetes Steering Committee, the Cardiovascular Disease Steering Committee, Faculty Group Practice (FGP), Quality Management Program (QMP) personnel, Ambulatory Care Services (ACS) leadership, health center/clinic medical directors and administrators, and individual physicians. Discussions to consider the results and possible improvements were held by the FGP, QMP, ACS leadership and ACS personnel meeting with medical directors and administrators, and administrators meeting with health center/clinic personnel.

Analysis: The operational problems provided an opportunity to review the processes of printing and utilizing the CAR. Two sets of underlying process problems were identified.

- Utilizing the CAR:
 - The CAR was batch printed and had to be attached to the patient's paperwork at the time the patient arrived. These additional work steps were not always performed. The report was not always printed in a timely manner and it was not always attached to the patient's clinical information.
 - Patients did not always receive the proper paperwork orders for LDL testing because providers who are addressing many aspects of care could overlook the prompt on the CAR to initiate a lab order.
- Patients not coming in for care or following through:
 - Patients who do not keep their appointments will not get the paperwork to go to the lab and therefore do not have an LDL test
 - Patients that did receive the proper paperwork sometimes are not going to the lab

10. Further intervention:

a. What is the intervention?

Redesign. These problems were addressed by changes in programming and in work flow.

- Automatic printing of the CAR:
 - The FGP QMP developed a plan for the CAR to be printed automatically as part of the paperwork that already prints automatically when a patient checks in, eliminating the extra steps (C-Cubed billing sheet)
 - Physicians and health center leadership determined that medical assistants could initiate laboratory forms when the CAR indicated that the patient needed laboratory tests. This saves the provider time and helps assure the preparation is not overlooked. The medical assistant lets the physician know that the paperwork for the lab is already filled out and part of the paperwork for review by provider.
- Development and use of the clinical gap reporting tool to have patients get needed lab tests:
 - The FGP QMP developed a program that identifies from the registry those patients with diabetes or vascular disease that have not received recommended care – a gap in care. The data can be pulled in “real time,” providing each health center a list of patients at that center who need specific types of care.
 - Physicians and health center leadership determined that panel managers (specialized medical assistants) would call the patients that were identified in the “gap reporting tool” explaining which

measures they were missing. In case of the LDL test, the panel manager would either mail or place a lab order for the patient in the computer. Patients that had an LDL > 100 mg/dl would be scheduled automatically with the PharmD to start on Statin therapy.

Implementation

- Automatic printing of the CAR:
 - The FGP QMP developed the programming specifications and Ambulatory Care Services (ACS) performed the necessary programming into C-Cubed.
 - ACS provided in-service to clerical staff, medical assistants, and providers about the CAR printing out when the patient checks in and about ways various personnel would help initiate needed care.
 - Local providers and medical assistants decided as a team where the CAR would be placed in the patient’s paperwork, that the medical assistant would initiate preparation of the lab order for LDL testing when indicated on the CAR, and the medical assistant would alert the provider if the CAR identifies that the patient is due for LDL in next 9 months.
 - The provider is to continue to discuss with the patient the importance of having the LDL test done and the impact of the results on overall health, lifestyle education (including referral to nurse educator as needed), and statin therapy when LDL > 100 (including referral to PharmD as needed and when available).
- Clinical gap reporting tool to prompt getting needed lab tests:
 - The FGP QMP developed the programming specification and the tool
 - ACS provided in-service to the panel managers, health center managers and providers about the “gap reporting tool”.
 - Local providers and panel managers decided as a team whether the panel manager will first focus on calling local patients that need an LDL test done.

b. When (time period) does the intervention occur?

- 1) automated CAR, Sep. – Dec. 2010
- 2) use gap reporting tool, Dec. 2010.

RE-CHECK
(Data 3)

11. Post-adjustment measures of performance

- a. What is measured? (Same) In past year, % patients with: 1) LDL measured, 2) LDL < 100 mg/dl
- b. What time period is measured? July 2010 – June 2011.
- c. What were the results? For General Medicine patients:

Time Period	Patients with Diabetes			Patients with Vascular Disease		
	N	LDL Tested	LDL < 100 mg/dl	N	LDL Tested	LDL < 100 mg/dl
1-12/2009	4,941	87%	59%	2,894	85%	62%
1-12/2010	5,020	86%	60%	2,837	88%	69%
1-12/2011	5,824	89%	61%	2,928	88%	68%

(Note: Patients with both diabetes and vascular disease are included in both patient groups.)

- For General Medicine patients with diabetes:
 - LDL testing improved 2 percentage points
 - LDL < 100 mg/dl improved 2 percentage points
- For General Medicine patients with vascular disease:
 - LDL testing improved 3 percentage points
 - LDL < 100 mg/dl improved 6 percentage points

The interventions expanding from the DAR to the CAR appear to have meaningful impact on LDL < 100 mg/dl for patients with vascular disease, for whom prompts were not previously provided.

The intervention to use the clinical gap report to identify patients needing LDL testing and not scheduled for an upcoming visit does not yet appear to have resulted in appreciably increased testing.

FURTHER 12. **Plan for review:**

**ACT/
ADJUST**

Review: The data by site were assembled and reported midyear (July) and at the end of the year (December, the above data). The data were provided to the Diabetes Steering Committee, the Cardiovascular Disease Steering Committee, Faculty Group Practice (FGP), Quality Management Program (QMP) personnel, Ambulatory Care Services (ACS) leadership, health center/clinic medical directors and administrators, and individual physicians. Discussions to consider the results and possible improvements will be held by the FGP, QMP, ACS leadership and ACS personnel meeting with medical directors and administrators, and administrators meeting with health center/clinic personnel.

Analysis, Redesign, and Implementation

In addition to reviewing the work flow and utilization of the CAR, the above groups reviewed the change in percent of patients with LDL cholesterol tested and with values of < 100 mg/dl at these sites and for the institution overall.

- Local improvements: Health center administrators met with health center/clinic personnel to discuss the extent to which the processes of providing the CAR and utilizing the gap tool are occurring as planned and how their use may be improved locally. Each health center initiates its own local improvements
- Institutional improvements. ACS personnel meet with medical directors and administrators to learn about how production and use of the CAR and use of the gap tool are being improved locally and receive suggestions for institutional changes that would facilitate local improvements. Members of the Diabetes Steering Committee (which includes ACS personnel) will discuss their personal experiences with the production and use of the CAR and local use of the gap tool along with information learned from health centers. The Diabetes Steering Committee will recommend further central institutional changes, which will be carried out by FGP QMP, ACS, and other institutional units they engage.

**PHYSI-
CIANS**

13. **How physicians are involved**

- a. Review and reflect on own baseline performance.
 - Physicians are provided baseline data on performance for percent of eligible patients on the measures of "LDL test completed and LDL < 100 mg/dl". The data are provided to them
 - (a) for all patients seen by clinicians at their clinic/health center,
 - (b) for all patients seen by clinicians seen in their department/division, and
 - (c) for all patients seen by UMHS clinicians overall. National performance benchmarks are also provided.
 - Physicians review this information and assess the need for improvement as part of their performance evaluation with leadership.
- b. Implement using of the Combined Action Report (CAR) to guide care they provide by using prompts.
 - Physicians learn about the CAR and how it assists physicians in prioritizing and providing care. (Specific method of providing information to physicians varies by site.)
 - Physicians participate with health center/clinic staff in understanding and finalizing the work flow that results in the CAR for a patient being available to the physician at the time of the patient visit.
 - Physicians utilize the CAR in providing care for patients with diabetes. Physicians also try out personal improvements in the way they use the CAR to provide care.
 - Physicians, as needed, provide feedback to their Health Center leaders and members of the Diabetes Steering Committee of the FGP QMP regarding the functionality of the CAR and to health center/clinic staff regarding the work flow that gets the CAR to the physician.
- c. Review and reflect on own post-intervention performance.

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- Physicians are provided data on performance similar to those described above, but for the time period following the intervention.
 - Physicians review this information, assess the extent of improvement for their patients, consider the value of the CAR and the gap reporting tool in improving care, and consider and share ways that the CAR and the clinical gap reporting tool and the process that provides it may be improved.
- d. Continue using the CAR to guide care they provide and support using the gap report tool.
- Physicians continue to use the CAR, adjusting to any improvements in content or the process that provides it, and trying out improvements in the way they personally use it in providing care.
 - As panel managers implement use of the clinical gap report tool to contact patients regarding needed laboratory tests, physicians will understand that effort and provide assistance as needed in confirming patients to be contacted and having orders for lab testing prepared.
 - Physicians, as needed, provide any further comments for improvements in the CAR and the clinical gap reporting tool and related processes.
- e. Review and reflect on continuing performance.
- Diabetes QI data are reviewed with the physicians during their annual performance reviews.
 - Physicians are provided data on performance similar to those described above, but for the time period following the post-intervention period.
 - Physicians review this information, assess the extent of improvement for their patients, consider the value of the CAR and the clinical gap reporting tool in improving care, and consider and share ways that the CAR and the process that provides it may be improved.

Data by health center for all three years are presented on the attached pages.

**LDLC Trending Report for: Gen Med and Med/Peds Health Centers
For Diabetes and Vascular Disease Registry Patients
Includes Report Periods of 2009, 2010, and 2011**

Clinic Name	Report Period	Diabetes Registry			Vascular Disease		
		N	LDLC Testing	LDLC Control	N	LDLC Testing	LDLC Control
Clinic A	200912	861	89%	64%	492	88%	67%
	201012	940	88%	63%	505	92%	71%
	201112	978	90%	65%	496	89%	71%
Clinic B	200912	828	87%	62%	530	85%	61%
	201012	849	86%	62%	520	89%	69%
	201112	861	88%	65%	518	88%	69%
Clinic C	200912	815	86%	55%	525	87%	63%
	201012	770	86%	57%	491	89%	71%
	201112	844	87%	60%	453	87%	68%
Clinic D	200912	286	86%	55%	185	81%	57%
	201012	258	90%	58%	164	85%	65%
	201112	274	89%	56%	154	84%	60%
Clinic E	200912	592	89%	62%	324	86%	67%
	201012	594	87%	60%	319	87%	66%
	201112	630	91%	65%	332	92%	73%
Clinic F	200912	267	93%	61%	137	87%	63%
	201012	282	90%	57%	134	90%	72%
	201112	280	93%	58%	128	87%	66%
Clinic G	200912	285	87%	59%	129	83%	70%
	201012	306	88%	68%	140	89%	76%
	201112	333	92%	69%	147	93%	78%
Clinic H	200912	336	86%	62%	267	82%	59%
	201012	320	83%	60%	250	87%	68%
	201112	269	86%	64%	217	84%	64%
Clinic I	200912	405	82%	50%	168	77%	49%
	201012	424	73%	45%	174	79%	55%
	201112	434	79%	46%	150	77%	52%
Clinic J	200912	266	79%	56%	137	83%	65%
	201012	277	83%	64%	140	91%	71%
	201112	320	93%	67%	166	91%	68%
General Medicine	200912	4941	87%	59%	2894	85%	62%
	201012	5020	86%	60%	2837	88%	69%
	201112	5223	89%	62%	2761	88%	68%

Clinic Name	Report Period	Diabetes Registry			Vascular Disease		
		N	LDLC Testing	LDLC Control	N	LDLC Testing	LDLC Control
Clinic K	200912	377	89%	56%	137	83%	61%
	201012	424	83%	52%	121	83%	62%
	201112	396	89%	54%	113	90%	66%
Clinic L	200912	144	90%	60%	42	93%	64%
	201012	161	88%	58%	49	82%	59%
	201112	205	85%	59%	54	87%	61%
Med/Peds	200912	521	89%	57%	179	85%	62%
	201012	585	84%	54%	170	82%	61%
	201112	601	87%	55%	167	89%	65%