**Supplemental Digital Content**

As described in the Qualitative Analysis section above there were rounds of baseline and endpoint interviews conducted for all participating offices. At least one key staff member was interviewed at baseline for the intervention and control arms. The endpoint interviews included only the intervention offices and for 4 of the offices at least one provider and one key staff member were interviewed. In one office only a physician was interviewed. The following is a breakdown of the Post-Intervention Practice interview findings for the intervention offices.

**INTERVIEWEES:**

Our participating family practices ranged in staff size: from as many as 11 physicians and mid-level providers to as few as one; from as many as six nurses to as few as one. One practice has a dozen medical assistants on staff; another does not employ any. Slight staffing changes from front to back end of the study.

Baseline: The averages for ten practices are: 5.2 physicians/mid-levels, 1.4 nurses, and 5 medical assistants.

Endpoint: The averages for five practices are: 5.8 physicians/mid-levels, 3.6 nurses, and 4 medical assistants.

Three of ten practices have multiple (two) locations/offices.

We collected post-study feedback through interviews with physicians and administrators. In several cases, the physician and administrator from the same practice gave differing answers.

**RESPONSES:**

**Q3. How does the clinical team know the appointment is for a patient’s diabetes care?**

Several practices changed their answers.

Baseline: two (of ten) practices say this information is listed on the day’s clinical schedule for that patient.

Endpoint: three (of five responding) practices give this answer.

Two (of ten) practices at the start of the study said this information is marked on the patient’s opening page in the EMR, including a physician (I-5) who changed his answer at the end of the study, explaining, "From prior visit, and we ask upon [patient] arrival, so tech or nurse knows when they're opening the chart and puts in the intake. We keep very little notes. It's not listed ahead of the visit." A staff member at that same practice (I-5) says that information is “marked on the patient's face sheet.”

Baseline, four (of ten) practices say this information is on the day’s clinical schedule for that patient and on the patient’s opening page in the EMR, including a practice (I-2) which did not name the EMR in the endpoint survey.

Baseline, one (of ten) practice (I-1) said the information is on both the day’s clinical schedule and the daily encounter form, but only cited the day’s clinical schedule at the endpoint .

**Q4. For a routine visit for diabetes care, do you routinely check for when the clinical assessment was last done?**

* **HgbA1c level:**

Baseline: All practices said “Yes” and named “Clinician.” Two practices added “sometimes an MA.”

Endpoint: The majority of responses say this is done by clinical staff. One staffer (I-5) says it’s the provider; another staffer (I-2) says it’s both physician and nurse.

* **Blood lipids test:**

Baseline: Again, “clinician” was the uniform answer.

Endpoint: Feedback at the end of the study was mixed, as a couple practices (I-3, I-2) changed their answers. The majority of responses say this is done by the provider. One physician (I-5) says it’s the clinical staff; a staffer (I-2) says it’s both physician and nurse; one practice (I-1) says it’s the clinical staff.

* **Foot exam:**

Baseline: “Clinician” was the answer practices gave across the board.

Endpoint: Again, the survey revealed some changed and mixed answers. The majority of responses say this is done by the provider. One physician (I-5) says it’s the physician or clinical staff; a staff member(I-2) says it’s both physician and nurse; one practice (I-1) says it’s the clinical staff.

**Q5. Who orders/performs the A1c, lipids panel or foot exam?**

In the baseline survey, all ten practices named the clinician.

But, at the end of the study:

* one practice responded that physicians order all tests/labs, and the provider performs the foot exam.
* two practices say the MAs have a standing order to perform the A1c, the clinician orders the lipids panel (in concert with doctor), and that clinicians order/perform foot exams.
* two practices say the physician/provider orders/performs all tests and exams, “or refers to a podiatrist" (I-2).

**Q6. How does this person know the testing is needed?**

Baseline:

-- Five of the ten practices said they use flow sheets, in the absence of automated computer prompts, to view results or clinical guidelines in place to instruct physicians/mid-levels or clinical staff on the frequency and type of testing for patients with diabetes.

-- Three of the ten have no prompts, flow sheets or built-in guidelines; providers and clinicians must review the medical record and make a determination based on their training.

-- One practice says it follows automated computer prompts built into the EMR, with the exception of one doctor (I-1) who uses flow sheets.

Endpoint:

This question elicited a variety of responses, changed answers from start to end of study, and conflicting answers from the same practice:

1. CCR form (I-1)
2. “Notes entered into EMR from CCR encounter form” (I-3 – which originally answered they must rely on reviewing medical record and training to make determination”)
3. No prompts, flow sheets or built-in guidelines. Providers must review the medical record and make a determination based on their training. (physician, I-2– at baseline said they use “automated computer prompts built into the EMR”)
4. "Use the CDSS and look back in the chart. We use that on a daily basis; if it doesn't match (that is, discrepancies), they make sure to update in case it's not documented in a meaningful way." (staffer, I-2)
5. There are automated computer prompts built into the EMR that prompt when testing is due for patients with diabetes; “We all used the tools. They were very helpful to most of us when accurate, but they became inaccurate and then were a waste. But, it would be ideal." (physician, I-5)
6. There are no prompts, flow sheets or built-in guidelines; “It doesn't always trigger a clinical decision support tool. For example, the last test might have been done by an endocrinologist; so no flow sheet and no results recorded. With a specialist report, the information sometimes is buried-- not in the EHR unless entered." (staffer, I-5)
7. "The EMR gives reminders -- push sheets. That's where I reference, but I typically ignore!" (physician, I-4 – initially told us “there are no automated computer prompts—they use flow sheets”)

**Q7. If the person ordering the test is not a physician/provider, how does he or she know to order it?**

Baseline:

This was not applicable for five of the ten practices. The remaining four said the clinician tells them… at least some of the time (I-5) or in addition to the provider using his/her own judgment (C-1).

Endpoint:

-- Three (of five) practices say only the physician orders the test

-- One practice credits the CCR form

-- One practice says they us their own judgment and knowledge

**Q8. When a test is ordered for a patient with diabetes:**

1. **Does someone perform the A1c on-site?**

Baseline:

-- Seven practices answered “no,” with one practice explaining that it “has the ability, but don't usually do [it] because [we’re] afraid of reimbursement issues.” (I-1). Another practice explained there is a lab in the office, but not in patient rooms (i.e. point-of-care) (I-4).

-- Two practices confirmed they perform the test on-site with results available at the time of the visit.

Endpoint:

-- Two practices answered no: "We order the test prior to the next visit and the results are ready in time for that." (physician, I-5); and, "I issue a lab test performed in my office. The vast majority of my patients, before they leave, are given a requisition for labs for the next visit." (physician, I-4)

-- Three practices said “yes” and that the results are available at the time of the visit – with two of those practices adding “most of the time, depending on insurance.”

1. **Does someone perform the blood lipid on-site?**

Baseline: Eight of ten practices answered “no.” One said “yes,” but the results are not available at the time of the visit (I-3).

Endpoint: All five practices say this is done at a lab.

**Q9. Are standing orders in place for patients with diabetes?**

Baseline: All ten practices answered “No,” with one office saying they have the “capability in EMR, but do not use.”(I-2)

Endpoint was divided:

-- Two practices have standing orders.

-- Two practices said “No” but plan to implement them: “We're in the process; protocol is being discussed" (staff, I-2); and, “Working on developing…training M.A.s (in clinical evaluation on their own) to get up to speed before ordering." (staff, I-5)

-- One practice has limited standing orders, explaining: "My nurse does some standing orders to review charts and make referrals or bring up issues with patients before I come in the room for things like mammograms, etc. But, not for diabetes, such as a PoC machine to prick fingers. That's the reason I haven't gotten a PoC A1c machine-- because patients are getting tests done in advance of the visits anyway, so the results are there." (physician, I-4)

**Q10. Does the practice experience limitations or difficulties in routinely monitoring results for A1c, lipids and foot exams in patients with diabetes due to the following:**

1. **The length of the office visit is not sufficient to do everything that is recommended?**

Baseline: Seven practices responded “No;” two answered “Yes” (I-2, I-4)

Endpoint: With the exception of an administrator (staff, I-5), all interviewees responded “No” they make time to do everything necessary. *(NOTE: physician, I-4 has indicated in similar questions that time is a constraint)*

1. **The reimbursement for the tests or office visit is insufficient?**

Divided answers at both start and end of study.

Baseline: Six practices said this is not a limitation; three indicated it can be (C-1, I-4, I-5).

Endpoint: Two practices said this is not a limitation; two practices said it can be a problem with some insurance carriers (I-1, I-3).

1. **Unable to conduct A1c or lipids test on-site?**

Divided answers at both start and end of study.

Baseline: Four practices said “No” and four responded “Yes” (C-2, C-3, C-4, I-2). One practice said they “don't have the ability to do lipids on-site, and don't do A1c on-site because [they’re] afraid of no payment.” (I-1) *(NOTE: this is consistent with I-1’s prior answer about insurance reimbursement concerns)*

Endpoint: Two practices said this is not cause for a problem (including I-1). One practice cited a problem of having to depend on off-site for lipids testing (I-2). Two practices said this can be a limitation, but it "benefits the patients but not the office, financially, to have on-site" (physician, I-5), while a staffer at the same practice cited the problem of "compliance issues (by patient) because of off-site lab." The second of those practices “might be interested in having a PoC machine for things other than chronic care, such as preventive care. [But] I guess cost might be an issue. “ (physician, I-4)

1. **The test results are not easy to access in our medical record?**

Uniformity from beginning to end of study.

Baseline: All responded “No,” with two practices mentioning that there can be an obstacle regarding foot and/or eye exams (C-2, I-2).

Endpoint: All responded “No”, that it’s easy, with one administrator pointing out that “lab results feed directly into EMR." However, one doctor added, “But, it's an annoying factor because information isn't always noticed or easily tracked. We have to search for reports." (physician, I-5)

1. **Sometimes you are too busy or forget?**

Baseline: Physicians were split as five said “No” and four said “Yes.”

Endpoint: Physicians at three practices said “Yes.” One doctor said “No”, but his administrator pointed out that it’s "possible, but unlikely, especially if patients have other issues." (staffer, I-5) *(NOTE: I-1 and I-2 were consistent beginning to end responding “Yes,” with both mentioning that it can happen occasionally.)*

1. **Other issues that present limitations?**

Baseline: A few physicians issued comments:

* + “Eye doctors never send results.”
* “Documentation of quality measure criteria takes additional time that could be used treating patients.” (physician, I-5)
* “Patient compliance with getting test done since we don't do point-of-care [testing].” (physician, I-4)

Endpoint:This elicited varied responses, including:

* + “Patient compliance” (I-3)
  + "With acute, on-going problems, we can get sidetracked. We see them come back for other medical issues and can forget to address the diabetes." (physician, I-2)
  + "We reschedule if a patient comes in for another issue."
  + "98% of chronic care patients are seen by mid-levels, but rarely for acute care." (physician, I-5)

**Q11. In the case of a patient diagnosed with diabetes who has scheduled an appointment for wrist pain, how do you know at this visit that the patient has diabetes?**

Baseline:

-- Five practices say “diabetes” does not appear on any list or visit documents; that they must rely on personal knowledge or review the patient’s medical record.

-- Four practices say that information is on documentation. Four practices indicate “diabetes” appears on the patient's intake or some other kind of paper work for the day's appointment, with three of those four specifying the “problem list” reviewed at every visit (one practice, C-1, mentions this list is in the EMR).

Endpoint:

-- Two practices responded that the diabetes diagnosis is on the problem list.

--One practice said that information is on the patient chart “and nowhere else.”

--One practice cites a combination of EMR and prior knowledge: “I know my patients, but it also appears prominently in the charts." (physician, I-4)

-- Conflicting remarks came from the fifth practice, at which a physician (I-2) reported “it’s not on that day's appointment paper work…it’s on the patient's medical record which the provider must review to know,” while the practice’s administrator said, “it’s on the day's appointment paperwork…we see all their medical background” (staffer, I-2).

**Q12. Is it your responsibility to address this patient’s diabetes-related needs during this visit, or only the presenting problem (i.e. wrist pain)?**

Uniformity in responses from start to finish.

Baseline: Eight of ten practices do address both, though several of them indicate it’s not consistently practiced. Comments from various physicians indicate:

-- peak hours would be a limitation -- “Would not during Saturday or acute care hours” (I-1)

-- it happens “if the patient is seeing a responsible provider, but not if the patient is seeing a mid-level who is covering the acute visits” (I-5)

-- the provider “would address diabetes if related to the wrist pain (chief complaint of visit); if the pop-up says A1c or lipid is due, [the provider] would make sure the patient gets another appointment [specifically] for diabetes” (I-2)

Endpoint: Physicians at five practices said the address both the diabetes and presenting problem, although one physician (I-5) noted that is not his “prerogative” —*in a departure from his baseline comment*). Another physician (I-4) says he will “glance at the flow sheet to see if [patients are] up-to-date, or when they're due for the next routine visit."

Interestingly, it was the staffers at two practices (I-2, I-5) who said diabetes is “typically not addressed at acute visits” or “unless patient hasn't been in recently."

**Q13. Which of the following diabetes-related tests are checked during the visit for wrist pain?**

1. **Recent A1c result?**
2. **Recent blood lipids result?**
3. **Is a foot exam conducted?**

Baseline: Mixed bag of responses, as one physician said “Yes” to the above questions, two practices answered “No” to all of the above. Six practices responded “Yes” to A1c and lipids, but “No” to foot exam (I-1 says this may vary among their clinicians).

Endpoint: Physicians at three practices said “Yes” to the above questions; physicians at two other practices said “No.” *(NOTE: Both I-2 and I-5 said “No” at study’s end, but months earlier answered “Yes” to A1c and lipids, and “No” to foot exam. From beginning to end of study, I-4 was consistent. Both I-1 and I-3 changed their answers regarding the foot exam—“No” at baseline, “Yes” at endpoint.)*

**Q14. Does the practice experience the following when caring for diabetes patients at visits that are not for diabetes care/management *per se*:**

1. **The length of an office visit for wrist pain does not allow enough time to address diabetes as well?**

Baseline: Split decision as five practices report no problem with the length of the office visit, but four say it is an issue.

Endpoint: Physicians at four practices agreed that time constraints are a factor; one physician said it is not an issue. “Clicking all the boxes in the EMR… some of it is good because it reminds you of things that need to be done. But, there's a lot of busy work. And, people's health concerns are becoming more complicated as people live longer, so visits are running long.“ (physician, I-4) *(NOTE: I-3 initially said Yes, but at the end of the study said No [physician].)*

1. **Reimbursement is not sufficient to address diabetes at a non-diabetes related visit?**

Baseline: Again, five practices report this is not a barrier. Four say it is (can be).

Endpoint: One practice said this is a problem, while physicians at two practices said reimbursement is sufficient; and, a physician at a fourth practice said “yes and no—it’s sort of an issue.” (I-5 *-- which initially answered “Yes”)*

*(NOTE: Some practices changed answers. I-1 and I-3 initially said “No” but later said “Yes.”*

1. **Patients prefer focusing the visit on their presenting problem (e.g. wrist pain)?**

Baseline: Five physicians answered “Yes,” with one commenting “If in for an acute visit, [patients] may be seeing a provider other than their own who may not be as likely to address other issues” (I-1). Three responded “No;” one of those practices saying “Our physician assistants and nurse practitioners see our patients for acute care and don't have the time during those visits to address chronic conditions.” (I-5). One practice wasn’t sure (C-3).

Endpoint: Three practices said “No,” because the patients typically want everything checked: “this is a minor barrier…usually the patient wants to do all now” (I-1).

The fourth practice suggests the focus is on the presenting problem because "If the information is not in front of us -- updated lab work or discussion -- then it's hard to address." (I-5)

*(NOTE: I-1 and I-2 initially said “Yes” but ended the study responding “No.”)*

1. **Other issues?**

Endpoint: One response: “If the lab loses the script, or patients forget or claim they were never given it. Patient barriers usually happen 15-20 percent of the time. That’s why having a lab in my office helps. We call patients 48 hours ahead of the appointment and remind them to get the lab work. Most of my patients aren't computer savvy to check the portal. We just got an upgrade to get the lab results through the portal, but I haven't started using it yet. But, most of my patients are older, undereducated, don't have computers and won’t use the portal. Most of my clerical staff isn’t knowledgeable enough to issue specific reminders beyond a courtesy call -- 48-hour notice.” (physician, I-4)

**Q15. Does the practice have the capability to run queries on patient data for aggregate reporting?**

Baseline: Eight of ten said “Yes” (C-3 said “No”).

Endpoint: All responded “Yes,” though one physician (I-5) mentioned “it's not an easy process."

1. **Do you run these types of reports currently?**

Baseline: Five responded “No;” three responded “Yes.”

Endpoint: Three of the practices report they do run the reports currently. One practice does not currently, but intends to; the physician (I-5) says they’re “specialized reports, not run routinely.” And the staffer (I-5) explained, “I ran the reports for the study project, and we're looking at more opportunities to do patient outreach (compliancy, etc.), so we will be implementing more as time goes on."

*(NOTE: I-5 said “Yes” at first, but changed to “No” at study’s end. I-2 said “No” at the start of the study – “No generally. Ran once for a report on overdue mammograms.” -- but ended saying “Yes.”)*

1. **Where do you get the reports?**

Baseline: *(NOTE: Apparently, this question was skipped in the survey.)*

Endpoint: The three practices that say they run reports tell us they come from their EHRs.

1. **Who runs these reports?**

Baseline: All three practices answered office staff.

Endpoint: Office staffers run the reports at two of the practices; a nurse (LPN) runs the reports at the third practice.

1. **What is done with these reports?**

Baseline: The three practices use the information to contact patients for follow-up; two of those practices say that, in addition, a flag for follow-up is placed in a patient's chart if there is a result out of range.

Endpoint: One practice does nothing with the reports. Two other practices use the information to contact patients for follow-up and “occasionally, the information is shared with the patient’s physician or mid-level provider.” (I-1)

**ENDPOINT SURVEY ONLY Q#16. THROUGH Q#29.**

**Q16. Did you typically use the Point of Care Encounter form for managing your patients’ diabetes care at their visits? Who uses the form at the visit and how were they used?**

This is another question that yielded varying responses from the practices.

Practice I-1 reports using the forms almost all of the time, handled by clinical staff. The forms were used to update data in the patient’s chart by entering it into the correct field; to reach out to a patient before the visit for them to get a test done; to provide information for the MA to order services for the patient; and, to decide how to treat these patients.

Practice I-2 says the PoC Encounter forms were used often by the physician. The team "went over it in huddle and kept them on the desk; we’re pulling throughout the day and it's checked a couple days before for scheduling…. We didn't use [the forms] to update data; but, we used it to order services for patients, such as labs, if needed. It's beneficial for the nurses to access it; at huddle, it gave reminders. And it's better reinforcement for patients." (physician, I-2) A staffer (I-2) adds that the forms were “printed every morning” and used almost all the time.

Practice I-3 says it did not use the forms, and adds that “the Information was put into the EMR in the reminder section.”

Practice I-5 reports “everyone was using [the forms] daily, then it tapered off to not at all." The forms were used by physicians and nurses who "had it at the start of the day and reviewed before the patient came in. It was generated the day of the visit and for chronic care-- not acute visits." (physician, I-5) A staffer (I-5) clarifies that the forms were used “as a reminder for providers about patients who needed updates or to look for testing results."

**Q17.** **Did you typically use the Point of Care Encounter form for managing your patients’ diabetes at their visits for an acute problem (e.g. wrist pain)? Who uses the form at the visit and how were they used?**

Again, an array of answers from the participating practices.

As with visits for diabetes care,Practice I-1 says it used the PoC Encounter forms almost all of the time, though “not if they scheduled the acute care appointment the day of or day before.” Again, the clinical staff used the forms to update data in the patient’s chart by entering it into the correct field; to provide information for the MA to order services for the patient; during daily huddle; and, the day before to put a prompt in the chart.

As before, Practice !-2 says it did not use the forms.

At Practice I-2, both physicians and clinical staff used the forms often, as it did with the diabetes care visits. "Not necessary to order tests; but, for a time, to check patient care and update upcoming visits." (physician, I-2) The administrator says the forms were used for acute visits “Occasionally, sometimes not, hit or miss… we printed for the entire roster for the day-- all visit types included." (staffer, I-2)

Practice I-5, in a departure from the use of PoC Encounter forms for managing their patients’ diabetes care, says the forms were never used for those patients’ acute care appointments. A staffer (I-5) explains, “Mid-levels did not use these forms because they were same-day or walk-in visits, so information was not readily available."

**Q18. Do you ever use the Point of Care Encounter forms at times other than for patient visits?**

In this instance, there was uniformity among the practices, with most participants responding “No.” One practice says the “MA prints schedule, goes through CCR, enters data and if the MA has a question or needs information, will review with the provider during daily huddle.” (I-1)

**Q19. Has using the PoC form empowered the staff to provide appropriate services?**

Most participants answered “Yes”:

* “It served as a reminder" (physician, I-2)
* “It was helpful to highlight things that needed to be done and were overdue" (staffer, I-2)
* “Some empowerment to encourage us to order or get things done that wouldn't get done otherwise. Allowed [staff] to provide more insight and bring them more into the loop." (physician, I-5)
* "It was a good reminder to our providers at times. For staff, it did provide some good talking points with providers when reviewing the day's schedule in the huddle." (staffer, I-5)

However, one practice disagreed, as a physician commented, "I think it was also the 25th, 26th and 27th thing we asked the MAs to do before they came into the room." (physician, I-3)

**Q20. In what way has using the PoC Encounter forms changed your practice?**

Participants who believed the forms empowered staff were equally positive about the forms’ impact on their practice.

* “[The forms] allowed the staff to become more involved and take more responsibility for patient care. Also, it created a more systematic way of tracking necessary screenings.” (I-1)
* "It encouraged us to be more routine and consistent in diabetes exams and management. It reinforced what we wanted." (physician, I-2)
* "Made us more aware in monitoring what had or hadn't been done; put more attention on exams and items that needed to be done, such as eye or foot exams. We would provide better care when [we] have those standards." (physician, I-5)
* "In the short term, we're going to have a bigger focus on population health moving forward. That is, being more proactive." (staffer, I-5)
* Interestingly, a physician who did not believe the forms empowered its staff, does think those forms had a positive effect on the practice in general:

"Ironically, I think they’re doing better now than they were a month ago. I don’t think we were, but are doing a better job now at PoC ordering." (You might have numerous initiatives and projects?) "To take 20 minutes or half an hour to say 'This is what we’re doing'... to educate ourselves would help. It's hard to give all of them proper attention. Too many different people asking for the information." (physician, I-3)

**Q21. The CCR Clinical Decision Support tool includes retrospective reports – did you use those reports?**

No respondents said they used these reports. One physician (I-2) says he doesn’t recall seeing them. Another practice says, "We already had access to reporting in our own system, so it wasn't helpful." (staffer, I-5). A third practice says they’re planning to use such reports, but at this time “there's no one to help pull that information together." (physician, I-4)

**Q22./Q23. The DVOR team provided additional retrospective reports to the office throughout the study – did you used those reports? Why haven’t you used/how did you use the retrospective reports?**

Three practices did not use these reports. One explains, "I think it's a good idea, and a good idea to delegate that tool to a dedicated staff member. I don't do it now because we can't take a paid staffer, such as an MA, out of handling patient care just for that." (physician, I-4)

One practice says it occasionally used the reports but “didn’t need that type of assistance.” (I-1)

Another practice says it used these reports "to encourage physicians to show percentages and make them more aware of deficiencies, and track provider progress feedback -- not patient care." (physician, I-5) An staffer (I-5) adds, "To verify that the numbers you were pulling were accurate."

**Q24. Overall, how much do you agree that the CDS for Diabetes study was helpful in improving the care of your patients diagnosed with diabetes?**

A split among the practices as one strongly disagreed (I-4—see Q27.), one wasn’t sure, one agreed (“somewhat”), and two offices strongly agreed the study was helpful. One of those latter two offices clarified the study was helpful "if used with more consistency and if they were more accurate” (physician, I-5) and said it "provided proper reminders to physicians who get bogged down in daily activities." (staffer, I-5)

**Q25. Overall, how much do you agree that the CDS for Diabetes study was helpful in empowering your staff to improve the care of your patients diagnosed with diabetes?**

Physicians at four practices “Strongly Agreed,” which is consistent with their responses to Q19. Comments: "I really think it helped the nurses focus and be more cognizant” (physician, I-2) and "[it] made our MAs more aware of some necessary testing." (staffer, I-5)

One practice “Strongly Disagreed”: "I prefer to call the shots. If I take time to train them, that's time away from seeing patients and generating revenue. And, there's the cost of paying them while training them. In an ideal world it would be nice if there were a way to focus on quality, not quantity, in patient care. Where my office is located, socio-economically, people wouldn't support a concierge model." (physician, I-4)

**Q26. Overall, has using the CDS for Diabetes study tools and workflows been at all disruptive to the workflow in your practice?**

There was not agreement among the participants. Answers ranged from “not at all disruptive” to “very disruptive.”

**Q27. Please describe how your workflow has been disrupted by use of the CDS for Diabetes study tools and workflows?**

* “Someone had to retrieve reports from the online. That took a bit of time; we didn’t always have it when we needed it.” (physician, I-2 – thought study elements were “disruptive on rare occasions”)
* “The main problem: times that we had discrepancies in reports meant going back to remap Crimson with our EHR. That made things a little difficult, though it did help.” (staffer, I-2 –thought study elements were “somewhat disruptive”)
* “The issue was lack of accuracy, though not initially.” (physician, I-5—thought study elements were “somewhat disruptive”)
* “Frustrating when the data was not accurate.” (physician, I-3 – thought study elements were very disruptive)
* "I don’t know that we really did access the forms. I would have to say, at the end, we said we just can’t do it. Not because of decision-making tools, necessarily. One of the biggest things we ran into: you hear about "pop-up fatigue" or "alert fatigue." The “Allscripts” is not a good tool and we were already ignoring that. We had staff putting in reminders by hand (manually) and other ones were popping up, bright red and catchy. But, for me, they were redundant. Or there were nine or ten reminders in there and it was just too much. When you first click on a patient's name, there’s a pop-up screen with a list of reminders, and you have to go past that screen to get information about the appointment, and where there’s ten of them from the Crimson tool, random ones, ones that Casey entered about wishing happy birthday, tests that are due, etc... it’s too many." (Did this slow down the IT system?) "Yes, I know that it did." (physician, I-3 – thought study elements were very disruptive)
* "I'm a small practice trying to keep overhead down, and to be conscious of the study…. I'm seeing 25 patients a day. We deal with 30-40 patients a day at the practice, and trying to keep up with looking over everything was just too much stuff. I thought the info looked pretty cool; but, then I'd just forget about it. It was overwhelming." (physician, I-4)

**Q28. Do you think you will continue to use the CDS for Diabetes study tools and workflows after the study concludes?**

The respondents were generally positive:

* “Yes. The real question will be, one year from now, will Allscripts be able to do this or would the office pay CCR?” (I-1)
* “Yes, as a check” (physician, I-3)
* "We're looking at it now. It became part of our routine, it made us more aware." (physician, I-2)
* "I think [we] would if we could get 99% or 100% accuracy in reports. That is, more of their system linking with our system…meshing." (staffer, I-2)
* "The concept is ideal and we should have a system to give us that information." (physician, I-5)
* "Yes, if built into our system and 100% accurate. There are issues when providers lose confidence in accuracy." (staffer, I-5)
* "I think using the tools is necessary, but I don’t know if we were using it right, or if we have enough resources at a small practice to use it. If I could have a designated person, a medical assistant, to handle it that would have been perfect. I don’t think the incentive is there yet. If you pay an MA just to handle these pop-ups, I think the return on investment is obvious." (Did you just have Casey get the Crimson Care Sheet? Just have the MA look at that in addition to the pop-ups or instead of the pop-ups?) "It would have been more effective for them to have had it in hand maybe. I'm not sure." (physician, I-3)
* "I'll have my staff run reports when we have capability and then reach out to my patients." (physician, I-4, who already indicated that he thinks this is a good idea, but doesn’t have staff coverage to utilize the tools – see Q23.)

**Q29. Other comments regarding the study’s tools and workflows based on your experiences to date with this CCR system?**

* “CCR has been very diligent in assuring software was working properly. This is rare. It worked better than most everything else we’ve encountered to date.” (I-1)
* "I think that, as frustrating as EMRs are sometimes, I believe in its power to move forward. I think if you could teach the system to recognize itself and push information to me, NOT just a pop-up note or reminder note, but the EMR putting it in for me, such as automatically implement tests. You would need a software writer who’s also a physician." (physician, I-3)
* "We didn't need a whole page for each patient -- 100 pages to print up! It’s better to have a list or spreadsheet on who needs what; also, something more easily obtained…condensed… a little more concise way to print up copies or reminders for the doctors and nurses to check." (physician, I-2)
* "A tool like that to extract information for ANY given diagnosis would be ideal. Computer systems to make it easier and make sure things are getting done. If accurate and consistent, it's a great benefit.” (physician, I-5)
* "Overall, the premise of the project was good, especially heading into pay-per-performance model (a.k.a. value-based payments)." (staffer, I-5)

**Q30. Overall, considering your practice’s standard processes for the care and management of diabetes patients, what other improvements could be made? Would this be feasible and how?**

Baseline: Four of the ten practices gave no feedback (including I-2 and SDMG, which addressed this at the end of the study).

* One physician (C-2) offered “better access to specialists’ info,” but went on to say this would not be feasible in that office.”
* Another physician (I-4) emphasized the need for “Time, time, time” and said that could be resolved with the addition of “more staff, another doc, and additional support.” But, the doctor adds that will not be happening; that is, it’s not feasible.
* Prior to his Endpoint response, a physician (I-5) said, “We need to add standing orders into our workflow to help streamline care and save time for providers,” and added that it’s “Currently a work in process. We need additional training for our MA/CNAs.”
* A practice (I-1) doesn’t believe it’s feasible to overcome this obstacle: “Data, such as eye exam results, are not automatically entered into "fields." [There’s] some difficulty – it’s cumbersome -- documenting a foot exam,” for instance.
* A fifth physician (C-1) wants “More protocols put in place,” and says in order for this to be feasible, the practice would “need higher reimbursement to run reports, tracking and follow-up, and create protocols.”

Endpoint: The majority of participants discussed their ideas for improvements, which mainly focused on better reporting, recording data, and accuracy re: EHR and CDS.

* One physician (I-3) responded, "Chronic care management is not taking top priority at the practice." (To what extent do you reach out to patients who need certain tests, etc., for chronic care?) "Not consistently. At this point, we have assistant entering information, like a pop-up note, but not following through with the patient." He went on to say that changing this would be feasible "if someone (CCM) was paid to do that job. And, it would be more feasible if you made it more real time reimbursement-- if a staffer got paid for each unit of work per patient."
* Another physician (I-2) suggested, "Perhaps protocols available to do A1c if indicated. Maybe nurses do the foot exam. We're considering practice changes. That's our next step."
* His administrator (I-2) has a more general idea, “Review reports better and get the big picture in an organized way to set a plan of action for the masses. It's really patient specific." To accomplish that, she says it’s "just a matter of coming up with a way. We have office meetings every Tuesday to review what we're lacking…what could be changed at our practice."
* One physician (I-5) said, “I would like a process in place for reaching out to patients, for follow-up, who haven't come into the office." To accomplish that, he suggested, "As we become more patient-centered, we would all run the reports. That requires staff, protocol. That's probably our greatest downfall."
* His administrator (I-5) added, “If EHR can get CDS with 100% accuracy."
* Using CMS as example, a physician (I-4) answered "They need to look again at the metrics. Every time a patient comes in, we shouldn't have to click all the boxes. They need to rework it to make it less burdensome for those of us in the trenches." *(consistent with answer to Q14a.)*

Two participants had little to add here, and only made these final comments:

* “The study was helpful. Cross pollination with other practices was a helpful outcome. Survival of primary care practices will depend on working together and sharing best practices.” (I-1)
* “Good process.” (physician, I-3)