Chronic Disease Improvement Collaborative (CDIC)
Orientation Guide

October 2014
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**Background**

Chronic Disease is the number one cause of death, accounting for 32% of mortalities in Maine in 2010. In Maine, diabetes rates have risen from 6% to 8.7% in 10 years with 92,000 adult residents with diabetes. According to the CDC 2012 Diabetes Report Card, 6.5% of Maine residents have been told they have pre-diabetes about 70,000 people. This represents approximately 162,000 Maine residents with diabetes or at great risk for developing diabetes. The BRFSS reports that 32% of Maine residents have ever been told that they have hypertension. This represents over 340,000 people. In addition, risk factors that contribute to hypertension and diabetes, obesity and inactivity, are higher than state and US averages in almost 40% of Maine counties (2014 County Health Rankings).

**The Challenges**

As a rural state with an aging population and a poverty rate of 14.7%, 1 Maine sees increasing rates of chronic disease: diabetes rates have increased from 6% to 8.7% over that past 10 years; with 92,000 adult residents having diabetes. 2 In Maine, heart disease, cardiovascular disease and diabetes are, respectively, the first, fourth and seventh leading causes of death, together accounting for 32.3% of mortalities in 2010. 3

Chronic disease is also an important factor in overall health care costs in Maine across payers. Medical costs for people with diabetes are more than double the costs for those without, and the risk of cardiovascular disease and stroke increases by up to four times in people with diabetes. Care and management of chronic disease among privately insured contribute to approximately 30% of total spending, and 40% of inpatient spending; 30% of the Maine Medicare population has a chronic disease, and drives approximately 65% of total spending and 70% of inpatient spending. 4

Primary care across the United States is undergoing transformation with the implementation of the Affordable Care Act, which supports an emphasis on prevention and population health. Further, there is an expanding base of knowledge about what constitutes evidence-based, efficacious, safe, and cost-effective care for people with chronic conditions. In addition, there is an increasing emphasis on ensuring patient-centered care, patient engagement and self-management. The emphasis on patient-centered care is driven by the need to include patients as a means to achieving better health outcomes. However, there is increasing understanding of the need to reconcile the tension for providers when evidence-based practices conflict with patient preferences. 5678

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8 Lacy NI, Backer EL. Evidence-based and patient-centered care: Results from an STFM group project. Family medicine 2008;40:417-22.
Overview

Maine Quality Counts is supporting quality improvement (QI) for provider practices in improving population health outcomes for patients with hypertension (HTN) and diabetes (DM). Through this Chronic Disease Improvement Collaborative, Maine Quality Counts will support primary care practices in engaging in changes and interventions that will result in improved outcomes for people living with diabetes and hypertension.

The purpose of the CDIC is to redesign Maine primary care practices to:

- Improve blood pressure control of hypertensive patients so that 65% of hypertensive patients have BP<140/90 mm Hg.
- Improve HbA1c control of diabetic patients so that 80% of diabetic patients whose most recent HbA1c level is <9.0% during the measurement year.

The project is supported by a Quality Counts contract with the Maine CDC, and is funded by a federal grant (US CDC grant award DP13-1305).

Several initiatives are currently underway to seek to sustain and revitalize primary care to improve health outcomes and reduce overall health costs, including Maine’s Patient-Centered Medical Home Pilot Project and Health Homes Initiative, and the federally-funded Maine State Health Care Innovation Model (SIM). The SIM cites the Triple Aim goals: improve the health of Maine’s population, improve the experience Maine patients have with their health care, and reduce the total costs of care: “… by providing a cohesive, streamlined framework for health care reform and innovation which includes fostering engaged consumers and communities, transforming delivery systems to support accountable and integrated patient-centered primary care, and aligning public and private payment, accountability, quality and data infrastructure, Maine will realize improved quality of care and service while positively impacting health outcomes, population health, and cost.”

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**Methods**

**Breakthrough Series (BTS)**

Maine Quality Counts will use the fundamental design of the Institute for Healthcare Improvement's Breakthrough Series (BTS) Collaborative as the foundation for the Chronic Disease Improvement Collaborative (CDIC). A BTS is a vehicle for improving care and outcomes for defined populations. The Collaborative structure and components are detailed below and please see Appendix 1 which outlines the general structure for the CDIC.

**The BTS Model in Action**

Between November 2014 and July 2015, QC will engage 3-5 primary care practices in a modified BTS collaborative to improve care for patients living with diabetes and/or hypertension. Following are the specific Improvement Collaborative components:

1) **Learning Collaborative**
   A) **Learning Sessions**
      o 1 Launch Webinar (required)
         ▪ Launch Webinar: Fri, Nov 7, 2014 - 8AM-10AM
      o 3 In-Person Learning Sessions (2 required, 1 optional)
         ▪ LS1: Thurs, Dec 4, 2014 (required)
         ▪ LS2: Late Feb- early March 2015 /Date TBD (required)
         ▪ LS3: June 2015 / Date TBD (optional)
      o See Appendix 2 for an outline of Learning Collaborative Content

   B) **Monthly Lunch & Learns: Case-Conferencing & Skill-Building Sessions**
      o **Lunch & Learn Specialist Case-Conferences** (required): Team case conference presentations with specialist consultants
         ▪ Every other month (odd months: Jan, Mar, May 2015 – dates TBD) - 12:15P-1:15PM
      o **Lunch & Learn Web-based/Virtual Learning Activity**: (recommended): Teams meet as a team to access one of pre-recorded web-based learning modules on HTN and diabetes care, self-management, etc; teams will then access virtual communication platform (e.g. QI Team Space) where they post key learnings, share successes & lessons learned on virtual learning platform
         ▪ every other month (even months: Feb, April 2015 – dates)

2) **On-Site Quality Improvement Assistance**
   A) **Baseline Assessment**: QC Quality Improvement (QI) staff will visit with each practice to assess current strengths and challenges of their team-based approach to improving chronic care for patients with diabetes & hypertension. Baseline assessment will include:
      o On-site meeting/discussion with team members
      o Use of standardized assessment tools - e.g.
         ▪ Assessing Chronic Illness Care (ACIC)
         ▪ Components of Safety Net Medical Home Assessment
      o Assessment of current status, functionality of practice chronic disease registry by QC HIT staff
o Assistance with collecting baseline data for project evaluation

B) **Ongoing QI Support:** QC QI staff will conduct regular check-ins with each practice to assess progress against stated aims, and to provide assistance with addressing challenges. Ongoing support will include
  o On-site meeting/discussion with team members 2X/month
  o Ongoing assessment and support of practice registry functionality by QC HIT staff (as needed)
  o Assistance with planning and conducting rapid cycle change improvements (using PDSA cycles) to address target areas for improvement
  o Assistance with collecting monthly data for project evaluation, and (as indicated) submission of data elements required for MOC credit

See Appendix 2 for the specific content outline for each intervention component above.

*Model for Improvement*

To achieve the CDIC goals, practice teams will learn to apply the Model for Improvement (MFI), a structured approach that teams use to accelerate and guide improvement. MFI emphasizes the inclusion of:

- A focused and time bound aim
- Process and outcome measures to track improvement and evaluate progress
- Strategies and change concepts

Strategies and change concepts are tested using the “Plan-Do-Study-Act” (PDSA) cycle. Practices will use the PDSA cycle to test changes, initially on a small scale in order to quickly identify promising ideas and adapt and develop them and eventually implement them in practice as part of their reliable systems. See Appendix 3 for a detailed explanation of the MFI.
**Key Drivers in Diabetes and Hypertension Care**

Improving chronic illness care requires that providers adhere to clinical guidelines, implement systems change concepts, and apply a systematic improvement process. The best results occur when multiple changes are made to the system to improve outcomes. The key drivers are the core areas that research has identified for practice teams to focus on to improve chronic care. The key drivers are interrelated activities designed to:

1) Inform and activate patients
2) Prepare and develop proactive practice teams

**The QI Team will identify specific strategies to focus improvement work addressing at least one of the four key drivers to improve BOTH hypertension and diabetes:**

1) optimize registries
2) standardize care processes
3) incorporate planned care into every visit
4) support patient self-management

See Appendix 4 for Driver Diagram details.

The change package for the CDIC outlines in detail the key change concepts designed to reduce variation and achieve success. Please see Appendix 5 for the Change Package Details.

**Measurement Strategy**

The Measurement is a critical component throughout the project that provides a means to evaluate the impact of strategies and interventions tested and adapted by the practices. Process measures, outcome measures, structural measures and qualitative data are used to assess progress toward the collaborative and individual practice goals.

The QC Improvement Specialist collaborative faculty have established core measurements for all participating teams to use in their sites. All participating practices will be required to collect and report data as part of the improvement experience. QI Teamspace will automatically display line charts of the measures and the data portal and practice coach will support teams in using run charts to analyze the data. The Measurement Strategy is described in detail in Appendix 7. For your reference, the expectations for measurement are also outlined in your Memorandum of Agreement for participation.
Collaborative Expectations

Activities and Resources of the Collaborative

- **Learning Sessions:** The learning collaborative offers one launch webinar (required) three Learning Sessions over a 9 month period; at least 3 representatives from practice team will be required to attend at least the first two 1-day learning sessions (note, the third session will be optional, and will be offered concurrently with the 1st learning session for the next cohort)

- **On-Site Practice Support:** This will include support on things such as conducting assessments and evaluation activities, providing registry technical assistance, and tailored QI Coaching: Available 2x/month

- **Case Conferencing calls:** At least one representative from each practice team is asked to attend every other month conference calls. These calls will focus on review of challenging patient cases or improvement issues using practice case presentations, and will include relevant specialists on calls.

- **Virtual (online) Learning Opportunities:** These include web-based learning modules relevant to CCM/PCMH and clinical content (DM & HTN improvement) that members of practice teams can access at times and locations most convenient to them; practices are encouraged to review on-demand modules at least four times over the 9 month period of the learning collaborative.

- **Virtual (online) Team Sharing and Collaborative Learning:** Online tools will be available; practices are encouraged to use these tools as often as desired, and are expected to report on their PDSAs and measures progress and contribute to online discussion at least 4 times through the nine month learning collaborative.

**Practice Expectation Checklist**

The following is an activities checklist for practices, based on participation expectations of the Pilot:

**To get started, practices are expected to:**

- Complete and submit **Memorandum of Agreement** and a **Business Associate Agreement**, as well as the necessary MOC paperwork (as applicable, see below) by October 31, 2014.

- **Save the Dates:** Please reserve the dates on your calendar for learning sessions and bi-monthly case conference calls and for the final (optional) session in June, 2015. The practice team, including the Provider Champion, Office Manager or third team member, must attend each call. If a provider leader is unable to attend, they must make arrangements for an alternate provider to attend in their place.

- **Add Time to your schedule** for team meetings (one hour) to work on your improvements. This work may include meeting with your QC Quality Improvement Specialist, reviewing your measures and identify and plan tests for improvements; time may also include completion of virtual learning activities.

- **Form your Improvement Team:** practice teams will need to be composed of at least one Provider Champion, Office Manager, and Nurse Champion or Medical Assistant.
Throughout the pilot, practices are expected to:

- **Complete an assessment and participate in evaluation activities** at the beginning and end of the project.
- **Complete a practice aim statement** and review measures for the project.
- **Submit monthly data cycles** on the 2nd Friday of each month. See Measurement Guide (APPENDIX 7) for details on these measures. At least one member of the practice team will need to submit data via a secure, web-based quality improvement site that will allow practices to chart and view their progress in real-time. Data submitted by the practices will not include patient protected health information and will be used for improvement in the evaluation process.
- **Review data monthly.** Practices will be able to review their own practice data and see the aggregate rates for all practices in the project. Practices will not be able to review other practices’ individual data. This data may also be viewed by QI Team Space staff who are providing technical assistance to Maine Quality Counts.
- **Submit a monthly PDSA cycle** on 2nd Friday of each month also via a secure website.
- **Share information** with the other participating organizations on at least one of the All Practice Calls/Webinars including details of changes made, what was learned from the changes tested, and the impact on the data.
- **Attend the Launch Webinar and at least two of the** Learning Collaborative Sessions. (See APPENDIX 2 for more information)

**Practices with providers wanting MOC must meet the following additional expectations:***

**MOC Requirements Checklist**

Practices with providers that would like MOC must meet the following additional expectations:

- Work with the Maine Quality Counts to **verify participation** in all requirements for MOC.
- Submit **additional monthly data cycles** (two clinical outcome measures, plus one additional process measure). See APPENDIX 7 for more details on these measures.
- If multiple physicians from a practice are requesting MOC, the physician leader will work with all providers in the practice to set aims and goals for the practice project, arrange monthly QI meetings to discuss the projects' progress, complete PDSA cycles, and review monthly data.
- Complete the necessary close-out MOC paper work by June 30, 2015.
- After the project completion, submit an MOC attestation form to Maine Quality Counts to be signed by the physician leader. Maine Quality Counts will then file the MOC credit with the ABIM or ABFM.
Pre-work Activities for Practice Teams

Teams are required to complete the following work prior to Learning Session 1 on December 4, 2014 in order to maximize time and effectiveness of the first learning session. The Quality Improvement Specialist will assist in completing each of these requirements. Pre-work consists of a number of activities you and your improvement team will need to complete before Learning Session 1 on December 4, 2014. You can use this packet to help your team prepare for participation in the Collaborative. Please use the following checklist to track your pre-work activities.

- Identify leadership team
- Meet with QI Specialist to:
  - Assess current state by completing a self-assessment/office systems survey
  - Establish data collection plan
  - Orient Team to website resources and Team Space
- Review Assessments and refine Aims/PDSA
- Prepare to collect and submit baseline data

Troubleshooting Pre-work

The Maine Quality Counts team is available to assist all teams in completing pre-work. Please contact Joanne Lafferty, QI Specialist at 207-620-8526 ext. 1008 jlafferty@mainequalitycounts.org.

Identify QI Leadership Team:

A team effort is necessary to impact health outcomes, population health, and reduced costs. Effective change relies upon the engagement of team members who can contribute unique perspectives and complementary skills. The team should include a primary care provider champion who can provide leadership to the team, a member with information technology expertise who can facilitate access to the data needed for QI, core staff familiar with day-to-day operations, and someone with operational decision-making authority. In some practices, one person may fill multiple roles. Including patients, family, or community members on your QI team ensures an essential perspective to improving patient-centered care. Maintenance of Certification requirements for the American Board of Family Medicine and the American Board of Internal Medicine require that physicians be meaningfully engaged in QI.

Following are some guidelines for who should be considered for your on-site leadership team:

- At a minimum a lead clinician/provider, a lead administrator, and a 3rd team member that could be a nurse, medical assistant, or other staff you feel would be important to include.
- Beyond this core team, the following skill sets and other individuals should be incorporated into team activities:
  - Physicians, Nurse Practitioners and Physician Assistants
  - IT staff
  - Pharmacists
  - Community Health Workers, Social Workers, Educators
  - Patients
In this package, you will find information that will help you and your QI Team to work collaboratively to identify goals, build a work plan to implement best practice strategies, and improve chronic disease among your patients.

Assess the Current State:
QI activities begin with an assessment of the system in its current state. Two office system assessment tools are included in Appendix 6.

- The **Assessment for Chronic Illness Care (ACIC)**, a validated instrument developed by the McColl Institute, has been used by teams in primary care settings to improve chronic illness care for a range of conditions including DM, HTN and depression. The instrument is organized around the six domains of the Chronic Care Model, with an additional section assessing the integration of the domains. This tool enables a team to identify areas of strength and focus for improvement efforts, as well as pre- and post-QI initiative measurement of the system of chronic illness care. It should be completed by the entire team. The team may sit down together to complete it, or may complete it individually and combine scores.

- The McColl **Institute Safety-Net Medical Home Assessment (PCMH-A)** provides feedback on whether important features of medical home are in place. The Patient-Centered Medical Home Assessment (PCMH-A) was jointly developed by the MacColl Center for Health Care Innovation at the Group Health Research Institute and Qualis health for the Safety Net Medical Home Initiative (SNMHI). It is based on the Change Concepts for Practice Transformation. A subset of questions from this tool are recommended for self-assessment.

Collect and Submit Baseline Data:

- Measurement in quality improvement projects is used to answer the question “has the change resulted in improvement?” Data on a set of measures is collected and reported periodically (frequency is dependent on the measure) by all teams throughout the Collaborative. Before Learning Session 1 (LS1), we require all teams to collect data on a subset of the project measures to help capture what is occurring at the beginning of the project. Appendix 7 describes the baseline data collection that is required and the detailed measurement strategy.

- Each team designates an individual who must take responsibility for ensuring that all of the pre-work baseline data elements are collected and posted to QI Teamspace. Every attempt to minimize the burden to practices of measurement and data collection will be made. Therefore, a sampling method will be used for data collection. Please randomly select 20 charts each month—10 of patients with diabetes and 10 or patients with hypertension seen during the month. If less than 10, report data on 100% of patients seen during the month. All baseline data must be posted to QI Teamspace by December 12th.
Develop Aim Statement

An aim statement answers the question: What are we trying to accomplish? It is an explicit statement summarizing what your practice plans to achieve during the project. An aim statement will focus your team’s actions, helping to improve care for the children in your practice. It should be specific, measurable, actionable, relevant, and time bound. Your team will have an opportunity to revise your original aim statement and build on the process measures as your project progresses. State your aim clearly, and use specific numeric goals. Teams make better progress when they have unambiguous, specific goals. Setting numeric targets clarifies the aim, helps to focus change efforts, and directs measurement activities. Be sure to refer to the overarching aim for the project and make sure that the practice aim is aligned. Enter your draft aim statement into QI Team Space.

As you begin to consider your team’s aim, be sure to do the following:

A. Involve leaders (e.g., physician leadership, hospital leadership, system leaders)
   Leadership must align the aim with strategic goals of the organization. They should also help identify an appropriate patient population for the initial focus of the team’s work.

B. Base the goals in your aim on existing data or organizational needs
   Examine available information about immunization care within your practice. Focus on issues that matter most to your patients and families.

C. Make the statement your own! It is acceptable to adopt the specific aim statement provided so long as it reflects what your practice wants to accomplish. Below are some guidelines for individualizing and making the aim statement your own.

Some Guidelines for Customizing Your Aim Statement:

- Discuss the aim statement with your team.
- Consider your target population, connecting to other initiatives occurring at your practice, etc.
  Review the office systems inventory to identify gaps in systems. Review baseline data to see what rates need to be improved.
- If using the project aim statement provided, customize it for your practice so the wording reflects what your practice wants to accomplish. Your aim statement should articulate to others what you are specifically trying to accomplish.
- Review the goals and measures. If your practice is planning on working on something that is not addressed, please add a numeric goal/measure and bring it to the Learning Session.
Developing a SMART Goal
SMART goals help improve achievement and success. A SMART goal clarifies exactly what is expected and the measures used to determine if the goal is achieved and successfully completed.

A SMART goal is:

**Specific:** Goals are specific and unambiguous.

**Measurable:** The success toward meeting the goal can be measured. Answers the question—How?

**Attainable:** Goals are realistic and can be achieved in a specific amount of time and are reasonable.

**Relevant (results oriented):** The goals are aligned with current tasks and projects and focus in one defined area; include the expected result.

**Time framed:** Goals have a clearly defined time-frame including a target or deadline date.

A sample smart goal for your HTN and DM care is the following:

*By the end of the April 2015, reduce the % of adult patients with diabetes whose most recent hemoglobin A1c (HbA1c) is >9% (out of control) from 65% down to 55%.*

Write out your SMART GOALS here:
Appendices

Appendix 1: General Structure and Timeline for the CDIC
Appendix 2: CDIC Content Outline
Appendix 3: Model for Improvement
Appendix 4: Driver Diagram
Appendix 5: Change Package
Appendix 6: Office System Assessments
Appendix 7: Measurement Strategy
Appendix 8: Other Resources
Appendix 9: Clinical Guidelines
Appendix 1: General Structure and Timeline for the CDIC

Maine Chronic Disease Improvement Collaborative: DM & HTN Improvement Learning Collaborative Model

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<tr>
<th>November 2014</th>
<th>Dec</th>
<th>Jan</th>
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<td>Virtual Launch Event 11/7/14</td>
<td>Learning Session 12/4/14</td>
<td>Learning Session TBD</td>
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Orient practices to:
- Plan for site visits/initial assessments
- Introduce virtual tools (WebEx/Zoom)
- Review data collect plan
- Clinical context of DM/HTN COM

On-Site Support (2x month) &
Virtual Learning Activities: Case Calls or Online Content (monthly)

TEAM-BASED, PRACTICE IMPROVEMENT (PDSAs)

DATA SUBMISSION & REVIEW BY PRACTICE TEAM

EVALUATION ACTIVITIES

Conference Line: 1-866-740-1260 x 9217167#
www.readytalk.com: Code 9217167
Appendix 2: CDIC Learning Collaborative Content Outline

(November 2014 – June 2015)

➢ Learning Sessions

1) Launch Webinar (Required, virtual participation optional) – Fri, Nov 7, 2014 - 8AM-10AM
   • Format: virtual/video teleconference with each team together in one location
   • Agenda/Content:
     o Welcome & introductions (15 mins)
       ▪ Introduction to CDIC, and benefits to & expectations of teams
       ▪ Structure, QI Support and Learning Activities
     o Introduction of teams (15 mins)
       ▪ Who they are
       ▪ What they bring/ successes
       ▪ What they want to learn
     o CDIC Nuts & Bolts (30 mins)
       ▪ Using the Model for Improvement to Guide our Work
         ▪ Goals of CDIC: What is it we are trying to improve (Global Aim)
         ▪ Data & evaluation: Measures (How will we know the change is an improvement?)
         ▪ Change concepts/Key Drivers: What changes can we make that will result in improvement? (Specific Aims)
         ▪ Testing Changes Using Plan-Do-Study-Act
     o Break / team activity (30 mins)
       ▪ Teams work individually, using Aim Statement worksheet and with QI Specialist support, to develop their Aim (What is it we are trying to improve?)
         ▪ Identify Change Concept/Key Driver
         ▪ Create aim statement with specific targets
         ▪ Report out
     o Introduction of consulting specialist(s) (20 mins)
       ▪ Baseline Practice Assessment: What’s involved
       ▪ Challenges/opportunities of working with primary care
       ▪ How to be of most value to participating teams
     o Wrap-up & Next steps (10 mins)

2) Learning Session 1 (Required) – Thursday, Dec 4, 2014 – 9AM-3PM
   • Format: in-person (Augusta) / remote option in Presque Isle
   • Agenda/Content:
     o Welcome & introductions (15 mins)
       ▪ Check-in on format, expectations of CDIC
o Teams reports out on activities since last session (45 mins)
  ▪ Final aim statement and targets
    ▪ Include what driver selected for team focus
  ▪ Tests done during the month using P-D-S-A cycles
    ▪ What did they learn? Successes? Challenges?
o Driver 1: Optimizing Your Registry to Improve Care for Populations & Individuals (60 mins)
  ▪ Overview of key concepts – expert presenter (TBD, practice presenter, other? (30 mins)
  ▪ Structured learning activity with teams (30 mins)
    ▪ What did we find from our Registry Assessment? Next steps?
o Break (30 mins)
o Team-building activity / exercise (30 mins)
  ▪ Share findings from Registry Assessment and identify next steps
o Lunch
o Driver 2: Standardizing Care for Patients with Diabetes/HTN
  ▪ Overview of key concepts – specialist consultant (TBD) (30 mins)
  ▪ Structured learning activity with teams (30 mins)
  ▪ Flowmapping a care process for a chronic patient
o Sticky Issues: Getting Past Common Challenges – specialist consultant (TBD) (30 mins)
o Wrap-up & Next steps (15 mins)

3) Learning Session 2 (Required) – (Date TBD / end Feb/March 2015) – 9A-3P
 • Format: in-person (Augusta) / remote option for Presque Isle
 • Agenda/Content:
  o Welcome & introductions (15 mins)
    ▪ Check-in on progress of CDIC
  o Team Updates (45 mins)
    ▪ Summary of work over past months
    ▪ What have they been testing?
    ▪ What are their measures doing?
    ▪ What have they learned? Identified successes, challenges?
o Drivers 3 & 4: Optimizing Your Team (Inlcuding your Patient!) (60 mins)
  ▪ Overview of key concepts – expert presenter (TBD/Behavioralist) (30 mins)
  ▪ Structured learning activity with teams (30 mins)
    ▪ LEAP Team Activity
  o Break (30 mins)
o Team-building activity / exercise (30 mins)
o Lunch
o Driver 2: Standardizing Care for Patients with Diabetes/HTN
  ▪ Overview of key concepts – specialist consultant (TBD) (30 mins)
structured learning activity with teams (30 mins)
  o Sticky Issues: Getting Past Common Challenges - specialist consultant (TBD) (30mins)
  o Wrap-up & Next steps (15 mins)

4) **Learning Session 3: Wrap-Up for Pilot Practices/Spread Session for new Cohort**
   (in person / optional /+ launch of Rnd 2) – Date TBD/ June 2015 – 9A-3P
   • **Format**: in-person (Augusta - TBD/?Maple Hill)
   • **Agenda/Content**: 
     o Welcome & introductions (60 mins)
       ▪ Introduction to CDIC, and benefits to & expectations of teams
       ▪ Patient story: Importance of this work to patients from the voice of a patient
       ▪ Selected successes from Round 1 Practice Teams
     o Introduction of teams - One Round 1 Team meets with group of five Round 2 Teams (45 mins)
       ▪ Summary of aims
       ▪ Selected driver for team focus
       ▪ Identified successes, challenges
     o Driver 1: Optimizing Your Registry to Improve Care for Populations & Individuals (60 mins)
       ▪ Overview of key concepts - expert presenter (TBD, practice presenter, other? (30 mins)
       ▪ Structured learning activity with teams (30 mins)
     o Break (30 mins)
     o Team-building activity / exercise (30 mins)
     o Lunch
     o Driver 2: Standardizing Care for Patients with Diabetes/HTN
       ▪ Overview of key concepts – specialist consultant (TBD) (30 mins)
       ▪ Structured learning activity with teams (30 mins)
     o Sticky Issues: Getting Past Common Challenges - specialist consultant (TBD) (30mins)
     o Wrap-up & Next steps (15 mins)

➢ **Monthly Lunch & Learns: Case-Conferencing & Skill-Building Sessions**
  o **Lunch & Learn 1**: (Required) – Jan 2015 (day/date TBD) – 12:15P-1:15PM
    **Specialist Case-Conference**: DM/HTN (topic informed by whichever not covered in Dec LS)
      ▪ 2 – 3 Teams present on their improvement Aims, PDSAs, identify challenges, successes
      ▪ Specialist discussion
- Q&A

- **Lunch & Learn 2:** (Recommended) – Feb 2015 (day/date TBD) – 12:15P-1:15PM
  
  **Web-based Learning Activity:** Teams are encouraged to meet as a team to access one of pre-recorded web-based learning modules on HTN (diabetes?) care, self-management, etc and discuss key learnings, share successes & challenges to virtual learning community

- **Lunch & Learn 3:** (Required) – March 2015 (day/date TBD) – 12:15P-1:15PM
  
  **Specialist Case-Conference: DM/HTN** (topic is informed by whichever is not featured in Jan)
  
  - Presentation of challenging case by 2-3 teams
  - Specialist discussion
  - Q&A

- **Lunch & Learn 4:** (Recommended) – April 2015 (day/date TBD) – 12:15P-1:15PM
  
  **Web-based Learning Activity:** Teams are encouraged to meet as a team to access one of pre-recorded web-based learning modules on HTN (diabetes?) care, self-management, etc and discuss key learnings, share successes & challenges to virtual learning community

- **Lunch & Learn 5:** (Required) – May 2015 (day/date TBD) – 12:15P-1:15PM
  
  **Specialist Case-Conference: DM/HTN** (whichever is not featured in Dec LS)
  
  - Presentation of challenging case by 2-3 teams
  - Specialist discussion
  - Q&A
Appendix 3: Model for Improvement

Model for Improvement

After assessing practice readiness to participate in QI, your practice will want to better understand models for improvement and how new ideas and strategies can be tested. Information in this change package section can assist the QI Team to formulate your project goals/aims, measurements, and program improvement ideas.

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<th>Why A Model? What Purpose?</th>
<th>Improvement Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide organizing structure to guide thinking</td>
<td>• Listen to patients and families</td>
</tr>
<tr>
<td>• Ensure discipline and thoughtfulness</td>
<td>• Tap knowledge of the system by involving staff</td>
</tr>
<tr>
<td>• Support improvement principles</td>
<td>• Understand processes and interactions in system</td>
</tr>
<tr>
<td>• Facilitate improvement</td>
<td>• Use disciplined method in successive cycles to test changes</td>
</tr>
<tr>
<td>• Foster common language</td>
<td>• Test on small scale; move rapidly to improve</td>
</tr>
<tr>
<td></td>
<td>• Measure to learn and to understand variation</td>
</tr>
</tbody>
</table>

Model for Improvement

3 Key Questions for Improvement

What are we trying to accomplish?

**AIM**

How will we know that a change is an improvement?

**MEASURES**

What changes can we make that will result in an improvement?

**IDEAS**
Question 1: What are we trying to accomplish?

**AIM:** A specific, measurable, time-sensitive statement of expected results of an improvement process. A strong clear aim gives necessary direction to improvement efforts, and is characterized as:

- Intentional, deliberate, planned
- Unambiguous, specific, concrete
- Measurable with a numeric goal, preferably one that provides a “stretch” to motivate significant improvement
- Aligned with other organizational goals or strategic initiatives
- Agreed upon and supported by those involved in the improvement and by leaders

Make your aim actionable and useful. Include:

- A general description of what you hope to accomplish
- Specific patient population who will be the focus
- Some guidance for carrying out the activities that will be used to achieve the aim

Question 2: How will we know that a change is an improvement?

**MEASURES:** Measures are indicators of change. To answer key question #2, several measures are usually required. These measures also can be used to monitor a system’s performance over time. In Plan-Do-Study-Act (PDSA) cycles, measurement used immediately after an idea or change has been tested helps determine its effect.

In improvement, key measures and measurement should:

- Clarify and be directly linked to goals
- Be useful, not necessarily perfect
- Be integrated into daily work whenever possible
- Be graphically and visibly displayed
- Be simple and feasible enough to measure in close time proximity to tests of change (PDSA cycles).

Question 3: What changes can we make that will result in an improvement?

**IDEAS:** Ideas for change or change concepts to be tested in a PDSA cycle can be derived from:

- Evidence or results of research/science
- Critical thinking or observation of the current system
- Creative thinking
- Theories, questions, hunches
- Extrapolations from other situations
When selecting ideas to test, consider the following:

- Direct link to the aim and goals
- Likely impact of the change (avoid low-impact changes)
- Potential for learning
- Feasibility
- Logical sequencing
- Series of tests that will build on one another
- Scale of the test (start with 3 patients, NOT 30)
- Shortness of the cycle (1 week, NOT 1 month)

Tips to make the most of PDSA cycles and tests of change:

- Think a couple of cycles ahead
- Plan multiple cycles to test and adapt change
- Scale down size of test (# of patients, location)....A “cycle of 1” is often appropriate
- Do more cycles, at a smaller scale and faster pace instead of fewer, bigger, slower
- Test with volunteers first
- Don’t seek buy-in or consensus for the test
- Be innovative and flexible to make test feasible
- Collect useful (and only just enough) data during each test
- Test over a wide range of conditions
- Learn from failures as well as successes
- Communicate what you’ve learned
- Engage leadership support
Appendix 4: Driver Diagram

A driver diagram organizes information to highlight the relationships between the aim of the improvement project and the changes to be tested and implemented. The driver diagram below outlines a high level approach to improving practice-based chronic illness care based on the findings of the environmental assessment of primary care practices conducted by Maine Quality Counts in summer 2014. The key drivers are the core areas that research has identified for practice teams to focus on to improve chronic care. Secondary drivers are evidence-based process changes that are expected to impact the outcome. The key drivers are interrelated activities designed to:

1) Inform and activate patients
2) Prepare and develop proactive practice teams

The change package for the CDIC outlines in detail the key change concepts designed to reduce variation and achieve success. Specific evidence-based strategies addressing each of the key and secondary drivers are outlined in the Change Concepts section in Appendix 5.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Key Drivers</th>
<th>Secondary Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Optimize Registry</td>
<td>1. Organize patient records in order to improve care management and communication.</td>
</tr>
<tr>
<td></td>
<td>Standardize Care Processes</td>
<td>2. Track goals and progress reports.</td>
</tr>
<tr>
<td></td>
<td>Incorporate Planned Care Into Every Visit</td>
<td>3. Enhance care coordination among providers and providers and patients.</td>
</tr>
<tr>
<td>Outcomes:</td>
<td></td>
<td>2. Maximize technology to support care coordination within the practice and between the practice and specialists, hospitals, and other providers external to the practice.</td>
</tr>
<tr>
<td>Improve blood pressure control of hypertensive patients so that 65% of hypertensive patients have BP&lt;140/90 mm Hg.</td>
<td></td>
<td>1. Implement a multidisciplinary, tiered team approach to enable prepared patients and providers to engage in non-acute, person-centered care.</td>
</tr>
<tr>
<td>Improve HbA1c control of diabetic patients so that 80% of diabetic patients whose most recent HbA1c level is &lt;9.0% during the measurement year.</td>
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<td>2. Maximize the care team’s capacity.</td>
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<td></td>
<td>3. Leverage patient engagement at each phase of the medical visit—before, during and after.</td>
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<tr>
<td></td>
<td></td>
<td>1. Implement motivational interviewing into work flow as a standard of practice to facilitate patients in establishing achievable personal self-management goals.</td>
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<tr>
<td></td>
<td></td>
<td>2. Develop patient education packages tailored to health literacy and learning preferences of patients.</td>
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<td></td>
<td>3. Develop community-based health care support systems.</td>
</tr>
<tr>
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<td></td>
<td>4. Maximize technology (e.g., patient portals, computer-aided teaching tools).</td>
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</table>
Appendix 5: Change Package

Improving chronic illness care requires that providers adhere to clinical guidelines, implement systems change concepts, and apply a systematic improvement process. The best results occur when multiple changes are made to the system to improve outcomes.

Change Concepts

The following evidence-based change strategies link to the identified drivers for improvement of practice-based care for patients with DM and HTN. Multiple strategies taken from results of the literature review are provided for each driver. Based on the findings from your practice assessment, the specific staffing patterns of your practice, and your knowledge of the needs of your patients, select at least one strategy from each of the four key drivers to address both HTN and DM:

- optimize registry,
- standardize care processes,
- incorporate planned care into every visit, and
- support patient self-management

This approach aligns with recommendations that improvement of care for chronic conditions is best accomplished when multiple strategies are implemented, and recognizes the unique characteristics of each practice.

Regardless of the strategies selected, the endorsement of practice leadership is essential. Leaders should be explicit in their endorsement of all strategies and their rationales, and articulate to all staff how implementing the selected strategies address both patient and practice goals. Leaders can demonstrate their support by ensuring that adequate space and staff time are available for multidisciplinary participation in chronic care management and QI initiatives.
### Key Drivers, Secondary Drivers and Evidence-Based Strategies to Support Quality Care for Patients with Diabetes and Hypertension

<table>
<thead>
<tr>
<th>KEY DRIVER</th>
<th>SECONDARY DRIVERS</th>
<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
</tr>
</thead>
</table>
| Optimize registry | 1) Organize patient records in order to improve case management and communication, 2) track goals and progress reports, 3) Enhance care coordination among providers and providers and patients. | **Registry specifics:**  
- Incorporate point of care clinical decision support and templates within EMRs.  
- Implement a Medical Archival Retrieval System (MARS) to generate clinical reports and gauge fiscal outcomes.  
- Embed recommended standards of care, clinical guidelines (e.g. guideline-directed alerts) and protocols into decision support software.  
- Utilize data to monitor patient population and drive improvement.  
- Stratify practice population by risk to enable tracking and proactive management of care for patients at risk for adverse outcomes.  
- Use clinical decision support tools within electronic health record and clinical decision support systems such as: Diabetes Wizard and Cardiovascular Wizard.  
**Benefits of using a registry include:**  
- Enable tracking of ER utilization and hospital admissions for high risk chronic disease patients.  
- Support care coordination and manage transitions of care across care settings.  
- Support specialty referrals and coordination of specialty care.  
- Enable linkage through health information exchanges (e.g., HealthInfoNet\(^{12}\)) with other practices, hospitals and providers to create a single electronic patient health record that facilitates accurate diagnosis and treatment through more complete and current patient information. |

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\(^{12}\) [http://www.hinfonet.org](http://www.hinfonet.org)
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<thead>
<tr>
<th>KEY DRIVER</th>
<th>SECONDARY DRIVERS</th>
<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
</tr>
</thead>
</table>
| Standardize Care Processes | 1. Establish professionally – endorsed protocols for early identification of HTN and DM, and utilize clinical support tools designed to stratify patients by risk level for adverse outcomes.  
2. Maximize technology to support care coordination within the practice and between the practice and specialists, hospitals, and other providers external to the practice. | Protocols:  
- Implement clinical algorithms and clinical decision support tools.  
- Establish protocols that enable early identification of HTN and DM (see algorithms and guidelines included in this document).  
- Use professionally endorsed standards of care and clinical guidelines for innovative care delivery.  
- Attend to unique needs of special populations (e.g., children and adolescents, pregnant women, older adults, and patients with medical and mental health comorbidities).  
- Ensure that patients have same-day access to care (e.g., open-access scheduling for same-day appointments, telephonic support, and/or secure messaging).  
- Utilize clinical support tools designed for specific conditions and stratification of patients by risk level for adverse outcomes.  
- Integrate routine performance management processes such as disseminating reports to providers on how their individual performance compares to aggregated network practice levels to promote practice improvement.  
Medical team composition:  
- Support and strengthen capacity for team-based care, specific components include:\n  - Expanded nurse or medical assistant rooming protocol  
  - Standing orders  
  - Extended responsibility for health coaching, care coordination, and integrated behavioral health to non-physician members of the team  
  - Improving team communication through co-location, huddles, and regular team meetings.  
- Other components include:  
  - Define roles and tasks of team members  
  - Collaborate with primary care providers, specialists (ophthalmologists, podiatrists, endocrinologists) and other providers (educators, dieticians, pharmacists) |

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<th>KEY DRIVER</th>
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<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
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</table>
| Standardize Care Processes |                   | ○ Delegate care activities (e.g. medication management, adhere to treatment regimen, provide information and follow-up) to appropriate team member based on specialty and skillset.  
• Establish policies specific to clinical protocols and ensure routine competency assessment and certification for practice staff.  
• Offer provider continuing education through online distance learning to mitigate demands on time.  
• Utilize case managers and community health workers as intermediaries between primary care provider and patient.  
• Utilize patient navigators for individualized patient support through continuum of care.  
• Identify and support a provider champion.  
  **Technology use:**  
• Utilize EMR and personalized health records to coordinate goals and action plans.  
• Use inter-connected EMR systems to improve coordination of care, including e-consults between primary care providers and specialists.  
• Use biometric devices (digital scale, BP monitoring, etc.).  
  **Communication:**  
• Implement regular medical team debriefings to coordinate changes in team structure.  
• Provide staff training that maximizes scopes of practice for all practice staff.  
• Improve coordination between primary care provider and hospital.  
  **Community resources:**  
• Form partnerships with community organizations to support or develop programs as part of the patient centered medical home model, and refer patients for these services (e.g., YMCA and pharmacies for lifestyle changes education, counseling and support)  
• Identify areas resources that support on-gong self-management support. (e.g., Diabetes Self-Management Support (DSMS) planning). |
<table>
<thead>
<tr>
<th>KEY DRIVER</th>
<th>SECONDARY DRIVERS</th>
<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
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</table>
| Incorporate Planned Care into Every Visit | 1. Implement a multidisciplinary, tiered team approach to enable prepared patients and providers to engage in non-acute, person-centered care.  
2. Maximize the care team’s capacity.  
3. Leverage patient engagement at each phase of the medical visit—before, during and after. |  
**General operations:**  
- Use templates for patient care planning, education and guidance documents; link to registry.  
- Ensure that gap reports detailing recommended screenings and services that patients have not received are available to all staff.  
- Practice ongoing assessment of clinic protocols and practice patterns to determine clinical care knowledge and beliefs.  
- Establish parameters, including standing orders, to promote autonomy of service providers.  
- Engage Community Care Teams for to meet unique needs of complex patients.  
- Establish group visits and shared medical appointments if practice staffing has capacity to support them.  
**Before visit:**  
- Leverage patient portals for pre-visit communications.  
- Utilize risk assessment tools for patients and staff to use prior to every visit, such as How’s Your Health.  
- Implement pre-visit planning checklists for staff.  
- Call patients (nurse or medical assistant) to bring medications, assess their goals, and identify additional patient needs.  
- Use daily team huddles to review the schedule of patient charts, anticipate care needs, coordinate roles/tasks of team members, and enhance the flow of care.  
**During visit:**  
- Establish patient goals for their health and action plans for behavior change (be specific with how, when, where, how much, how often and assess barriers) that are aligned with motivational interviewing (make sure plan reflects the patient’s values) to foster engagement and assertiveness with patients during office visit decision-making discussions.  
- Provide the patient with a copy of the plan.

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<thead>
<tr>
<th>KEY DRIVER</th>
<th>SECONDARY DRIVERS</th>
<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate Planned Care</td>
<td></td>
<td>• Use health coaches (such as certified diabetes educators) and nurses trained in DM self-management to reach more patients.</td>
</tr>
<tr>
<td>into Every Visit</td>
<td></td>
<td>• Schedule routine follow-up visit.</td>
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<td>• Use personalized decision support.</td>
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<td></td>
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<td>• Help the patient recognize that the whole health care team supports their care.</td>
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<td></td>
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<td>• Communicate by linking the treatment plan with self-care support.</td>
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<td></td>
<td></td>
<td>• Share success stories among team members.</td>
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<td><strong>After visit:</strong></td>
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<tr>
<td></td>
<td></td>
<td>• Conduct a “check out” with patients (nurse or medical assistant) at end of appointment to see if they have the resources they need to follow care plans.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Call new patients 1-2 weeks after first visit to follow up.</td>
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<tr>
<td></td>
<td></td>
<td>• Ask for patient’s experience with the plan and problem-solve and encourage.</td>
</tr>
<tr>
<td>KEY DRIVER</td>
<td>SECONDARY DRIVERS</td>
<td>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</td>
</tr>
<tr>
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</tr>
<tr>
<td>Support Patient Self-Management</td>
<td>1. Implement motivational interviewing into work flow as a standard of practice to facilitate patients in establishing achievable personal self-management goals.</td>
<td>Patient education:</td>
</tr>
<tr>
<td></td>
<td>2. Develop patient education packages tailored to health literacy and learning preferences of patients.</td>
<td>• Develop tailored patient education packages.</td>
</tr>
<tr>
<td></td>
<td>3. Develop community-based health care support systems.</td>
<td>• Ensure that support staff is trained to assess risk for complications of DM and HTN.</td>
</tr>
<tr>
<td></td>
<td>4. Maximize technology (e.g., patient portals, computer-aided teaching tools.</td>
<td>• Assess health literacy and learning preferences of patients to facilitate delivery of effective health education.</td>
</tr>
</tbody>
</table>
<pre><code>                                                                                                                                     | • Develop standard disease-specific paper and/or computer-aided patient education tools that reflect the cultural and literacy needs of your patient population, including: |
                                                                                                                                     | o Home monitoring education                                                                                     |
                                                                                                                                     | o Medications – purpose, side effects, costs, adherence,                                                     |
                                                                                                                                     | o Lifestyle considerations: role of nutrition, activity, sleep, stress reduction, etc.                      |
                                                                                                                                     | o Strategies and resources for self-driven health research                                                   |
                                                                                                                                     | o Foot care, vision care, etc.                                                                               |
                                                                                                                                     | o Interpretation of lab results                                                                               |
                                                                                                                                     | o Suggested lists of disease-specific questions the patient may ask the provider.                             |
                                                                                                                                     | • Encourage enrollment in certified Diabetes Self-Management Education program – practice- or community-based. |
                                                                                                                                     | • Offer small groups or individual based nutrition counseling for patients with DM.                          |
                                                                                                                                     | • Use group medical appointments, peer-led support groups, or patient education classes to provide opportunities for patients to share experiences and support. |
                                                                                                                                     | • Partner with community resources, such as pharmacists, to provide lifestyle education.                     |
                                                                                                                                     | Patient engagement/provider support:                                                                          |
                                                                                                                                     | • Establish a work flow that supports self-management coaching by various staff at multiple points of contact.|
                                                                                                                                     | • Implement motivational interviewing (MI) as a standard of practice for all practice staff to assess readiness for behavioral change and support/facilitate patient establishment of personal self-management goals |
                                                                                                                                     | o Staff training as needed to ensure standard application of MI                                              |
                                                                                                                                     | o Engage a team-approach that enables adequate time to educate, explore and                                  |
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<tr>
<th>KEY DRIVER</th>
<th>SECONDARY DRIVERS</th>
<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
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</thead>
</table>
| Support Patient Self-Management | Establish realistic personal goals  
- Use of decision aids (e.g. ABIM Choosing Wisely, Dartmouth-Hitchcock Medical Center Aids, Mayo Clinic’s Decision Aids\(^\text{15}\)), including Shared Decision Making tools.  
- Engage in collaborative decision-making/personalized decision support through the use of negotiated agendas at each visit.  
- Assign responsibility for self-management tasks to all team members, extending the work out from the provider.  
- Incorporate self-management goals into the EHR and address them routinely during patient visits.  
- Employ health coaching to review patient goals and develop strategies to overcome barriers to achieving goals.  
- Adopt a formal QI model that engages staff and patients.  
- Implement online forums to share and disseminate information.  
- Provide a written care plan or visit summary that includes goals and action plans to ensure patients and families know what to do when they leave the visit.  
Community resources/community support:  
- Develop community-based health care support systems.  
- Implement planned visits for patients with DM.  
- Facilitate peer support groups within or outside of the clinic.  
Technology use:  
- Establish patient portals that enable patients’ ready access to personal information such as medications, appointments, and lab results, and communication mechanisms that enable patient reminders.  
- Maximize supportive technology  
  - Utilize telemedicine for home monitoring (BP, glucose, foot temperature)  
  - Use of cell-phones for reminders |

\(^\text{15}\) [http://www.choosingwisely.org/](http://www.choosingwisely.org/)  
[http://www.mayo.edu/center-for-innovation/projects/decision-aids](http://www.mayo.edu/center-for-innovation/projects/decision-aids)  
[http://www.dartmouth-hitchcock.org/medical-information/healthencyclopedia/zx1768#av2281](http://www.dartmouth-hitchcock.org/medical-information/healthencyclopedia/zx1768#av2281)  
[http://www.dartmouth-hitchcock.org/medical-information/healthencyclopedia/aa44406#av2388](http://www.dartmouth-hitchcock.org/medical-information/healthencyclopedia/aa44406#av2388)  
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<th>EVIDENCE-BASED STRATEGIES/POTENTIAL CHANGES</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>• Implement patient management website to upload blood glucose monitoring and receive feedback from providers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provide computer aided DM teaching with interactive touch screen programs.</td>
</tr>
</tbody>
</table>
Appendix 6: Office System Assessments

These QI activities begin with an assessment of the system in its current state. Assessment of practice readiness for engaging in QI is a key first step in assessing readiness.

This section includes two instruments that enable a systematic approach to assessing your current practice: 1) Assessment for Chronic Illness Care (ACIC), and 2) select components of the Safety-Net Medical Home Assessment.

Assessment for Chronic Illness Care (ACIC)

The Assessment for Chronic Illness Care (ACIC) instrument, a validated instrument developed by MacColl Institute, has been used by teams in primary care settings to improve chronic illness care for a range of conditions including DM, HTN and depression. The ACIC 3.5 is organized around the six domains of the Chronic Care Model, with an additional section assessing the integration of the domains. This tool enables a team to identify areas of strength and focus for improvement efforts, as well as pre- and post-QI initiative measurement of the system of chronic illness care. It should be completed by the entire team. The team may sit down together to complete it, or may complete it individually and combine scores. The ACIC instrument is included below, and also available online here: http://www.improvingchroniccare.org/index.php?p=ACIC_Survey&s=35

Completing the ACIC

Users should complete the ACIC for one chronic condition at a time (e.g., how well they are providing care for DM). Respondents (practice teams, health plan representatives) are asked to rate the degree to which each component (e.g., partnerships with community organizations, patient treatment plans) is being implemented within their system for that chronic condition, using a scale ranging from 0 (not at all) to 11 (fully). To aid in selecting a value, the ACIC provides general descriptions for limited, basic, good and excellent support of chronic illness care in connection with that component. One of the advantages of the ACIC is that the most advanced category (the highest possible score for each item) describes optimal practice, educating respondents about where they should be targeting their practice.
# Assessment of Chronic Illness Care

**Version 3.5**

Please complete the following information about you and your organization. This information will not be disclosed to anyone besides the ICIC/IHI team. We would like to get your phone number and e-mail address in the event that we need to contact you or your team in the future. Please also indicate the names of persons (e.g., team members) who complete the survey with you. Later on in the survey, you will be asked to describe the process by which you complete the survey.

<table>
<thead>
<tr>
<th>Your name:</th>
<th>Date:</th>
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<tbody>
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<td></td>
<td>Day</td>
</tr>
<tr>
<td></td>
<td>Year</td>
</tr>
</tbody>
</table>

| Organization & Address:              | Names of other persons completing the survey with you: |
|                                      | 1.          |
|                                      | 2.          |
|                                      | 3.          |

| Your phone number: ( ) - - - - - - - | Your e-mail address: |

## Directions for Completing the Survey

This survey is designed to help systems and provider practices move toward the "state-of-the-art" in managing chronic illness. The results can be used to help your team identify areas for improvement. Instructions are as follows:

1. **Answer each question** from the perspective of one physical site (e.g., a practice, clinic, hospital, health plan) that supports care for chronic illness.
   
   Please provide name and type of site (e.g., Group Health Cooperative/Plan)

2. **Answer each question** regarding how your organization is doing with respect to one disease or condition.
   
   Please specify condition

3. For each row, circle the point value that best describes the level of care that currently exists in the site and condition you chose. The rows in this form present key aspects of chronic illness care. Each aspect is divided into levels showing various stages in improving chronic illness care. The stages are represented by points that range from 0 to 11. The higher point values indicate that the actions described in that box are more fully implemented.

4. **Sum the points in each section** (e.g., total part 1 score), calculate the average score (e.g., total part 1 score / # of questions), and enter these scores in the space provided at the end of each section. Then sum all of the section scores and complete the average score for the program as a whole by dividing this by 6.

For more information about how to complete the survey, please contact:

Judith Schaefer, MPH  
Improving Chronic Illness Care  
A National Program of the Robert Wood Johnson Foundation  
Group Health Cooperative of Puget Sound  
1730 Minor Avenue, Suite 1290  
Seattle, WA 98101-1448

Tel. 206.287.2207; Schaefer.jk@gbc.org

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Assessment of Chronic Illness Care, Version 3.5

Part 1: Organization of the Healthcare Delivery System. Chronic illness management programs can be more effective if the overall system (organization) in which care is provided is oriented and led in a manner that allows for a focus on chronic illness care.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Organizational Leadership in Chronic Illness Care Score</td>
<td>... does not exist or there is a little interest.</td>
<td>... is reflected in vision statements and business plans, but no resources are specifically earmarked to execute the work.</td>
<td>... is reflected by senior leadership and specific dedicated resources (dollars and personnel).</td>
<td>... is part of the system’s long term planning strategy, receive necessary resources, and specific people are held accountable.</td>
</tr>
<tr>
<td>Organizational Goals for Chronic Care Score</td>
<td>... do not exist or are limited to one condition.</td>
<td>... exist but are not actively reviewed.</td>
<td>... are measurable and reviewed.</td>
<td>... are measurable, reviewed routinely, and are incorporated into plans for improvement.</td>
</tr>
<tr>
<td>Improvement Strategy for Chronic Illness Care Score</td>
<td>... is ad hoc and not organized or supported consistently.</td>
<td>... utilizes ad hoc approaches for targeted problems as they emerge</td>
<td>... utilizes a proven improvement strategy for targeted problems.</td>
<td>... includes a proven improvement strategy and uses it proactively in meeting organizational goals.</td>
</tr>
<tr>
<td>Incentives and Regulations for Chronic Illness Care Score</td>
<td>... are not used to influence clinical performance goals.</td>
<td>... are used to influence utilization and costs of chronic illness care.</td>
<td>... are used to support patient care goals.</td>
<td>... are used to motivate and empower providers to support patient care goals.</td>
</tr>
<tr>
<td>Senior Leaders Score</td>
<td>... discourage enrollment of the chronically ill.</td>
<td>... do not make improvements to chronic illness care a priority.</td>
<td>... encourage improvement efforts in chronic care.</td>
<td>... visibly participate in improvement efforts in chronic care.</td>
</tr>
<tr>
<td>Benefits Score</td>
<td>... discourage patient self-management or system changes.</td>
<td>... neither encourage nor discourage patient self-management or system changes.</td>
<td>... encourage patient self-management or system changes.</td>
<td>... are specifically designed to promote better chronic illness care.</td>
</tr>
</tbody>
</table>

Total Health Care Organization Score ________ Average Score (Health Care Org. Score / 6) ________

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Part 2: Community Linkages. Linkages between the health delivery system (or provider practice) and community resources play important roles in the management of chronic illness.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linking Patients to Outside Resources</td>
<td>... not done systematically.</td>
<td>... is limited to a list of identified community resources in an accessible format.</td>
<td>... is accomplished through a designated staff person or resource responsible for ensuring providers and patients make maximum use of community resources.</td>
<td>... is accomplished through active coordination between the health system, community service agencies and patients.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Partnerships with Community Organizations</td>
<td>... do not exist.</td>
<td>... are being considered but have not yet been implemented.</td>
<td>... are formed to develop supportive programs and policies.</td>
<td>... are actively sought to develop formal supportive programs and policies across the entire system.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Regional Health Plans</td>
<td>... do not coordinate chronic illness guidelines, measures or care resources at the practice level.</td>
<td>... would consider some degree of coordination of guidelines, measures or care resources at the practice level but have not yet implemented changes.</td>
<td>... currently coordinate guidelines, measures or care resources in one or two chronic illness areas.</td>
<td>... currently coordinate chronic illness guidelines, measures and resources at the practice level for most chronic illnesses.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Community Linkages Score __________ Average Score (Community Linkages Score / 3) __________
Part 3: Practice Level. Several components that manifest themselves at the level of the individual provider practice (e.g. individual clinic) have been shown to improve chronic illness care. These characteristics fall into general areas of self-management support, delivery system design issues that directly affect the practice, decision support, and clinical information systems.

Part 3a: Self-Management Support. Effective self-management support can help patients and families cope with the challenges of living with and treating chronic illness and reduce complications and symptoms.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment and Documentation of Self-Management Needs and Activities</td>
<td>...are not done.</td>
<td>...are expected.</td>
<td>...are completed in a standardized manner.</td>
<td>...are regularly assessed and recorded in standardized form linked to a treatment plan available to practice and patients.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Self-Management Support</td>
<td>...is limited to the distribution of information (pamphlets, booklets).</td>
<td>...is available by referral to self-management classes or educators.</td>
<td>...is provided by trained clinical educators who are designated to do self-management support, affiliated with each practice, and see patients on referral.</td>
<td>...is provided by clinical educators affiliated with each practice, trained in patient empowerment and problem-solving methodologies, and see most patients with chronic illness.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Addressing Concerns of Patients and Families</td>
<td>...is not consistently done.</td>
<td>...is provided for specific patients and families through referral.</td>
<td>...is encouraged, and peer support, groups, and mentoring programs are available.</td>
<td>...is an integral part of care and includes systematic assessment and routine involvement in peer support, groups or mentoring programs.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Effective Behavior Change Interventions and Peer Support</td>
<td>...are not available.</td>
<td>...are limited to the distribution of pamphlets, booklets or other written information.</td>
<td>...are available only by referral to specialized centers staffed by trained personnel.</td>
<td>...are readily available and an integral part of routine care.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Self-Management Score_________ Average Score (Self Management Score / 4)_________
**Part 3b: Decision Support.** Effective chronic illness management programs assure that providers have access to evidence-based information necessary to care for patients—decision support. This includes evidence-based practice guidelines or protocols, specialty consultation, provider education, and activating patients to make provider teams aware of effective therapies.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-Based Guidelines</td>
<td>... are not available.</td>
<td>... are available but are not integrated into care delivery.</td>
<td>... are available and supported by provider education.</td>
<td>... are available, supported by provider education and integrated into care through reminders and other proven provider behavior change methods.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Involvement of Specialists in Improving Primary Care</td>
<td>... is primarily through traditional referral.</td>
<td>... is achieved through specialist leadership to enhance the capacity of the overall system to routinely implement guidelines.</td>
<td>... includes specialist leadership and designated specialists who provide primary care team training.</td>
<td>... includes specialist leadership and specialist involvement in improving the care of primary care patients.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Provider Education for Chronic Illness Care</td>
<td>... is provided sporadically.</td>
<td>... is provided systematically through traditional methods.</td>
<td>... is provided using optimal methods (e.g. academic detailing).</td>
<td>... includes training all practice teams in chronic illness care methods such as population-based management, and self-management support.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Informing Patients about Guidelines</td>
<td>... is not done.</td>
<td>... happens on request or through system publications.</td>
<td>... is done through specific patient education materials for each guideline.</td>
<td>... includes specific materials developed for patients which describe their role in achieving guideline adherence.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Decision Support Score

Average Score (Decision Support Score / 4)
### Part 3c: Delivery System Design

Evidence suggests that effective chronic illness management involves more than simply adding additional interventions to a current system focused on acute care. It may necessitate changes to the organization of practice that impact provision of care.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice Team Functioning</td>
<td>... is not addressed.</td>
<td>... is addressed by assuring the availability of individuals with appropriate training in key elements of chronic illness care.</td>
<td>... is assured by regular team meetings to address guidelines, roles and accountability, and problems in chronic illness care.</td>
<td>... is assured by teams who meet regularly and have clearly defined roles including patient self-management education, proactive follow-up, and resource coordination and other skills in chronic illness care.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Practice Team Leadership</td>
<td>... is not recognized locally or by the system.</td>
<td>... is assumed by the organization to reside in specific organizational roles.</td>
<td>... is assumed by the appointment of a team leader but the role in chronic illness is not defined.</td>
<td>... is guaranteed by the appointment of a team leader who assures that roles and responsibilities for chronic illness care are clearly defined.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Appointment System</td>
<td>... can be used to schedule acute care visits, follow-up and preventive visits.</td>
<td>... assures scheduled follow-up with chronically ill patients.</td>
<td>... are flexible and can accommodate innovations such as customized visit length or group visits.</td>
<td>... includes organization of care that facilitates the patient seeing multiple providers in a single visit.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Follow-up</td>
<td>... is scheduled by patients or providers in an ad hoc fashion.</td>
<td>... is scheduled by the practice in accordance with guidelines.</td>
<td>... is assured by the practice team by monitoring patient utilization.</td>
<td>... is customized to patient needs, varies in intensity and methodology (phone, in person, email) and assures guideline follow-up.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Planned Visits for Chronic Illness Care</td>
<td>... are not used.</td>
<td>... are occasionally used for complicated patients.</td>
<td>... are an option for interested patients.</td>
<td>... are used for all patients and include regular assessment, preventive interventions and attention to self-management support.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Continuity of Care</td>
<td>... is not a priority.</td>
<td>... depends on written</td>
<td>... between primary care providers</td>
<td>... is a high priority and all chronic</td>
</tr>
</tbody>
</table>

Copyright 2000 MacColl Institute for Healthcare Innovation, Group Health Cooperative
<table>
<thead>
<tr>
<th>Components</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>disease interventions include active coordination between primary care, specialists and other relevant groups.</td>
</tr>
<tr>
<td><strong>Part 3d: Clinical Information Systems.</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>(From Previous Page)</strong></td>
</tr>
<tr>
<td><strong>Total Delivery System Design Score</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Average Score (Delivery System Design Score / 6)</strong></td>
</tr>
<tr>
<td><strong>Registry</strong> (list of patients with specific conditions)</td>
<td>... is not available.</td>
<td>... includes name, diagnosis, contact information and date of last contact either on paper or in a computer database.</td>
<td>... allows queries to sort sub-populations by clinical priorities.</td>
<td>... is tied to guidelines which provide prompts and reminders about needed services.</td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Reminders to Providers</strong></td>
<td>... are not available.</td>
<td>... include general notification of the existence of a chronic illness, but does not describe needed services at time of encounter.</td>
<td>... includes indications of needed service for populations of patients through periodic reporting</td>
<td>... includes specific information for the team about guideline adherence at the time of individual patient encounters.</td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Feedback</strong></td>
<td>... is not available or is non-specific to the team.</td>
<td>... is provided at infrequent intervals and is delivered impersonally.</td>
<td>... occurs at frequent enough intervals to monitor performance and is specific to the team’s population.</td>
<td>... is timely, specific to the team, routine and personally delivered by a respected opinion leader to improve team performance.</td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Information about Relevant Subgroups of Patients Needing Services</strong></td>
<td>... is not available.</td>
<td>... can only be obtained with special efforts or additional programming.</td>
<td>... can be obtained upon request but is not routinely available.</td>
<td>... is provided routinely to providers to help them deliver planned care.</td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Patient Treatment Plans</strong></td>
<td>... are not expected</td>
<td>... are achieved through a standardized approach.</td>
<td>... are established collaboratively and include self management as well as clinical goals.</td>
<td>... are established collaborative an include self management as well as clinical management. Follow-up occurs and guides care at every</td>
</tr>
<tr>
<td>Components</td>
<td>Level D</td>
<td>Level C</td>
<td>Level B</td>
<td>Level A</td>
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<tr>
<td></td>
<td>Score</td>
<td>Score</td>
<td>Score</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Total Clinical Information System Score</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

**Integration of Chronic Care Model Components.** Effective systems of care integrate and combine all elements of the Chronic Care Model; e.g., linking patients' self-management goals to information systems registries.

<table>
<thead>
<tr>
<th>Components</th>
<th>Little support</th>
<th>Basic support</th>
<th>Good support</th>
<th>Full support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informed Patients about Guidelines</td>
<td>...is not done.</td>
<td>...happens on request or through system publications.</td>
<td>...is done through specific patient education materials for each guideline.</td>
<td>...includes specific materials developed for patients which describe their role in achieving guideline adherence.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

| Information Systems/Registries | ...do not include patient self-management goals. | ...include results of patient assessments (e.g., functional status rating; readiness to engage in self-management activities), but no goals. | ...include results of patient assessments, as well as self-management goals that are developed using input from the practice team/provider and patient. | ...include results of patient assessments, as well as self-management goals that are developed using input from the practice team and patient; and prompt reminders to the patient and/or provider about follow-up and periodic re-evaluation of goals. |
| Score                          | 0              | 3             | 6             | 9            |
|                                | 2              | 5             | 8             | 10           |

| Community Programs | ...do not provide feedback to the health care system/clinic about patients' progress in their programs. | ...provide sporadic feedback at joint meetings between the community and health care system about patients' progress in their programs. | ...provide regular feedback to the health care system/clinic using formal mechanisms (e.g., Internet progress report) about patients' progress. | ...provide regular feedback to the health care system about patients' progress that requires input from patients that is then used to modify programs to better meet the needs of patients. |
| Score              | 0              | 3             | 6             | 9            |
|                    | 2              | 5             | 8             | 10           |

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<table>
<thead>
<tr>
<th>Components</th>
<th>Little support</th>
<th>Basic support</th>
<th>Good support</th>
<th>Full support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Organizational Planning for Chronic Illness Care</td>
<td>...does not involve a population-based approach.</td>
<td>...uses data from information systems to plan care.</td>
<td>...uses data from information systems to proactively plan population-based care, including the development of self-management programs and partnerships with community resources.</td>
<td>...uses systematic data and input from practice teams to proactively plan population-based care, including the development of self-management programs and community partnerships, that include a built-in evaluation plan to determine success over time.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Routine follow-up for appointments, patient assessments and goal planning</td>
<td>...is not ensured.</td>
<td>is sporadically done, usually for appointments only.</td>
<td>is ensured by assigning responsibilities to specific staff (e.g., nurse case manager).</td>
<td>is ensured by assigning responsibilities to specific staff (e.g., nurse case manager) who uses the registry and other prompts to coordinate with patients and the entire practice team.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Guidelines for chronic illness care</td>
<td>...are not shared with patients.</td>
<td>...are given to patients who express a specific interest in self-management of their condition.</td>
<td>...are provided for all patients to help them develop effective self-management or behavior modification programs, and identify when they should see a provider.</td>
<td>...are reviewed by the practice team with the patient to devise a self-management or behavior modification program consistent with the guidelines that takes into account patient’s goals and readiness to change.</td>
</tr>
<tr>
<td>Score</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>
Total Integration Score (SUM items): ________  ➔  Average Score (Integration Score/6) = ________
Briefly describe the process you used to fill out the form (e.g., reached consensus in a face-to-face meeting; filled out by the team leader in consultation with other team members as needed; each team member filled out a separate form and the responses were averaged).

Description: ____________________________________________________________

<table>
<thead>
<tr>
<th>Scoring Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(bring forward scoring at end of each section to this page)</td>
</tr>
<tr>
<td>Total Org. of Health Care System Score</td>
</tr>
<tr>
<td>Total Community Linkages Score</td>
</tr>
<tr>
<td>Total Self-Management Score</td>
</tr>
<tr>
<td>Total Decision Support Score</td>
</tr>
<tr>
<td>Total Delivery System Design Score</td>
</tr>
<tr>
<td>Total Clinical Information System Score</td>
</tr>
<tr>
<td>Total Integration Score</td>
</tr>
</tbody>
</table>

**Overall Total Program Score (Sum of all scores)** _______

**Average Program Score (Total Program /7)** _______

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What does it mean?

The ACIC is organized such that the highest “score” (an “11”) on any individual item, subscale, or the overall score (an average of the six ACIC subscale scores) indicates optimal support for chronic illness. The lowest possible score on any given item or subscale is a “0”, which corresponds to limited support for chronic illness care. The interpretation guidelines are as follows:

Between “0” and “2” = limited support for chronic illness care
Between “3” and “5” = basic support for chronic illness care
Between “6” and “8” = reasonably good support for chronic illness care
Between “9” and “11” = fully developed chronic illness care

It is fairly typical for teams to begin a collaborative with average scores below “5” on some (or all) areas the ACIC. After all, if everyone was providing optimal care for chronic illness, there would be no need for a chronic illness collaborative or other quality improvement programs. It is also common for teams to initially believe they are providing better care for chronic illness than they actually are. As you progress in the Collaborative, you will become more familiar with what an effective system of care involves. You may even notice your ACIC scores “declining” even though you have made improvements; this is most likely the result of your better understanding of what a good system of care looks like. Over time, as your understanding of good care increases and you continue to implement effective practice changes, you should see overall improvement on your ACIC scores.

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**Scoring the ACIC**

The ACIC provides subscale scores corresponding to each of the Chronic Care Model elements, as well as an overall score. Scores for each section are obtained by summing the values for all items within a section (e.g., self-management support) and dividing by the number of items within that section. The overall score is derived by dividing the average scores for each section by the number of sections administered. For Version 3.5, you should divide the overall score by 7 (the number of subscales in Version 3.5) to obtain the average overall score.

The ACIC is organized such that the highest "score" (an "11") on any individual item, subscale, or the overall score (an average of the seven ACIC subscale scores) indicates optimal support for chronic illness. The lowest possible score on any given item or subscale is a "0", which corresponds to limited support for chronic illness care. The interpretation guidelines are as follows:

- Between "0" and "2" = limited support for chronic illness care
- Between "3" and "5" = basic support for chronic illness care
- Between "6" and "8" = reasonably good support for chronic illness care
- Between "9" and "11" = fully developed chronic illness care
Safety-Net Medical Home Assessment

The McColl Institute Safety-Net Medical Home Assessment (PCMH-A) provides feedback on whether important features of medical home are in place. The Patient-Centered Medical Home Assessment (PCMH-A) was jointly developed by the MacColl Center for Health Care Innovation at the Group Health Research Institute and Qualis health for the Safety Net Medical Home Initiative (SNMHI). It is based on the Change Concepts for Practice Transformation. A subset of questions from this tool are recommended for self-assessment.
### PART 4: CONTINUOUS & TEAM-BASED HEALING RELATIONSHIPS

4a. Establish and provide organizational support for care delivery teams accountable for the patient population/pool.
4b. Link patients to a provider and care team so both patients and provider/care team recognize each other as partners in care.
4c. Ensure that patients are able to see their provider or care team whenever possible.
4d. Define roles and distribute tasks among care team members to reflect the skills, abilities, and credentials of team members.

<table>
<thead>
<tr>
<th>Items</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Patients are encouraged to see their paneled provider and practice team</td>
<td>only at the patient’s request.</td>
<td>by the practice team, but is not a priority in appointment scheduling.</td>
<td>by the practice team and is a priority in appointment scheduling, but patients commonly see other providers because of limited availability or other issues.</td>
<td>by the practice team, is a priority in appointment scheduling, and patients usually see their own provider or practice team.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>14. Non-physician practice team members</td>
<td>play a limited role in providing clinical care.</td>
<td>are primarily tasked with managing patient flow and triage.</td>
<td>provide some clinical services such as assessment or self-management support.</td>
<td>perform key clinical service roles that match their abilities and credentials.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>15. The practice</td>
<td>does not have an organized approach to identify or meet the training needs for providers and other staff.</td>
<td>routinely assesses training needs and ensures that staff are appropriately trained for their roles and responsibilities.</td>
<td>routinely assesses training needs, ensures that staff are appropriately trained for their roles and responsibilities, and provides some cross training to permit staffing flexibility.</td>
<td>routinely assesses training needs, ensures that staff are appropriately trained for their roles and responsibilities, and provides cross training to ensure that patient needs are consistently met.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
</tbody>
</table>

**Total Health Care Organization Score** 0  
**Average Score (Total Health Care Organization Score/3)** 0.0
### PART 5: ORGANIZED, EVIDENCE-BASED CARE

5a. Use planned care according to patient need.
5b. Identify high risk patients and ensure they are receiving appropriate care and case management services.
5c. Use point-of-care reminders based on clinical guidelines.
5d. Enable planned interactions with patients by making up-to-date information available to providers and the care team at the time of the visit.

<table>
<thead>
<tr>
<th>Item</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.  Comprehensive, guideline-based information on prevention or chronic illness treatment</td>
<td>...is not readily available in practice.</td>
<td>...is available but does not influence care.</td>
<td>...is available to the team and is integrated into care protocols and/or reminders.</td>
<td>...guides the creation of tailored, individual-level data that is available at the time of the visit.</td>
</tr>
<tr>
<td>17.  Visits</td>
<td>...largely focus on acute problems of patient.</td>
<td>...are organized around acute problems but with attention to ongoing illness and prevention needs if time permits.</td>
<td>...are organized around acute problems but with attention to ongoing illness and prevention needs if time permits.</td>
<td>...are organized to address both acute and planned care needs. Tailored guideline-based information is used in team huddles to ensure all outstanding patient needs are met at each encounter.</td>
</tr>
<tr>
<td>18.  Care plans</td>
<td>...are not routinely developed or recorded.</td>
<td>...are developed and recorded but reflect providers' priorities only.</td>
<td>...are developed collaboratively with patients and families and include self-management and clinical goals, but they are not routinely recorded or used to guide subsequent care.</td>
<td>...are developed collaboratively, include self-management and clinical management goals, are routinely recorded, and guide care at every subsequent point of service.</td>
</tr>
<tr>
<td>19.  Clinical care management services for high-risk patients</td>
<td>...are not available.</td>
<td>...are provided by external care managers with limited connection to practice.</td>
<td>...are provided by external care managers who regularly communicate with the care team.</td>
<td>...are systematically provided by the care manager functioning as a member of the practice team, regardless of location.</td>
</tr>
</tbody>
</table>
### PART 7: ENHANCED ACCESS

7a. Promote and expand access by ensuring that established patients have **24/7 continuous access** to their care team via phone, email or in-person visits.

7b. Provide scheduling options that are patient- and family-centered and accessible to all patients.

7c. Help patients attain and understand health insurance coverage.

<table>
<thead>
<tr>
<th>Items</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. Appointment systems</td>
<td>...are limited to a single office visit type.</td>
<td>...provide some flexibility in scheduling different visit lengths.</td>
<td>...provide flexibility and include capacity for same day visits.</td>
<td>...are flexible and can accommodate customized visit lengths, same day visits, scheduled follow-up, and multiple provider visits.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>27. Contacting the practice team during regular business hours</td>
<td>...is difficult.</td>
<td>...relies on the practice’s ability to respond to telephone messages.</td>
<td>...is accomplished by staff responding by telephone within the same day.</td>
<td>...is accomplished by providing a patient a choice between email and phone interaction, utilizing systems which are monitored for timeliness.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>28. After-hours access</td>
<td>...is not available or limited to an answering machine.</td>
<td>...is available from a coverage arrangement without a standardized communication protocol back to the practice for urgent problems.</td>
<td>...is provided by coverage arrangement that shares necessary patient data and provides a summary to the practice.</td>
<td>...is available via the patient’s choice of email, phone or in-person directly from the practice team or a provider closely in contact with the team and patient information.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>29. A patient’s insurance coverage issues</td>
<td>...are the responsibility of the patient to resolve.</td>
<td>...are addressed by the practice’s billing department.</td>
<td>...are discussed with the patient prior to or during the visit.</td>
<td>...are viewed as a shared responsibility for the patient and an assigned member of the practice to resolve together.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
</tbody>
</table>
## PART 8: CARE COORDINATION

8a. Link patients with community resources to facilitate referrals and respond to social service needs.
8b. Integrate behavioral health and specialty care into care delivery through co-location or referral protocols.
8c. Track and support patients when they obtain services outside the practice.
8d. Follow-up with patients within a few days of an emergency room visit or hospital discharge.
8e. Communicate test results and care plans to patients/families.

<table>
<thead>
<tr>
<th>Items</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Medical and surgical specialty services</td>
<td>...are difficult to obtain reliably.</td>
<td>...are available from community specialists but are neither timely nor convenient.</td>
<td>...are available from community specialists and are generally timely and convenient.</td>
<td>...are readily available from specialists who are members of the care team or who work in an organization with which the practice has a referral protocol or agreement.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>31. Behavioral health services</td>
<td>...are difficult to obtain reliably.</td>
<td>...are available from mental health specialists but are neither timely nor convenient.</td>
<td>...are available from community specialists and are generally timely and convenient.</td>
<td>...are readily available from behavioral health specialists who are on-site members of the care team or who work in a community organization with which the practice has a referral protocol or agreement.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
<tr>
<td>32. Patients in need of specialty care, hospital care, or supportive community-based resources</td>
<td>...cannot reliably obtain needed referrals to partners with whom the practice has a relationship.</td>
<td>...obtain needed referrals to partners with whom the practice has a relationship.</td>
<td>...obtain needed referrals to partners with whom the practice has a relationship and relevant information is communicated in advance.</td>
<td>...obtain needed referrals to partners with whom the practice has a relationship, relevant information is communicated in advance, and timely follow-up after the visit occurs.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
</tbody>
</table>
**PART 8: CARE COORDINATION (CONTINUED)**

8a. Link patients with community resources to facilitate referrals and respond to social service needs.
8b. Integrate behavioral health and specialty care into care delivery through co-location or referral protocols.
8c. Track and support patients when they obtain services outside the practice.
8d. Follow-up with patients within a few days of an emergency room visit or hospital discharge.
8e. Communicate test results and care plans to patients/families.

<table>
<thead>
<tr>
<th>Items</th>
<th>Level D</th>
<th>Level C</th>
<th>Level B</th>
<th>Level A</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. Follow-up by the primary care practice with patients seen in the Emergency Room or hospital</td>
<td>...generally does not occur because the information is not available to the primary care team.</td>
<td>...occurs only if the ER or hospital alerts the primary care practice.</td>
<td>...occurs because the primary care practice makes proactive efforts to identify patients.</td>
<td>...is done routinely because the primary care practice has arrangements in place with the ER and hospital to both track these patients and ensure that follow-up is completed within a few days.</td>
</tr>
<tr>
<td>34. Linking patients to supportive community-based resources</td>
<td>...is not done systematically.</td>
<td>...is limited to providing patients a list of identified community resources in an accessible format.</td>
<td>...is accomplished through a designated staff person or resource responsible for connecting patients with community resources.</td>
<td>...is accomplished through active coordination between the health system, community service agencies and patients and accomplished by a designated staff person.</td>
</tr>
<tr>
<td>35. Test results and care plans</td>
<td>...are not communicated to patients.</td>
<td>...are communicated to patients based on an ad hoc approach.</td>
<td>...are systematically communicated to patients in a way that is convenient to the practice.</td>
<td>...are systematically communicated to patients in a variety of ways that are convenient to patients.</td>
</tr>
<tr>
<td>Items</td>
<td>Level D</td>
<td>Level C</td>
<td>Level B</td>
<td>Level A</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9. Patients</td>
<td>...are not assigned to specific practice panels.</td>
<td>...are assigned to specific practice panels but panel assignments are not routinely used by the practice for administrative or other purposes.</td>
<td>...are assigned to specific practice panels and panel assignments are routinely used by the practice mainly for scheduling purposes.</td>
<td>...are assigned to specific practice panels and panel assignments are routinely used for scheduling purposes and are continuously monitored to balance supply and demand.</td>
</tr>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
<td>10 11 12</td>
</tr>
</tbody>
</table>
Appendix 7: Measurement Strategy

Measurement Strategy

Overview
Maine Quality Counts is supporting quality improvement (QI) for provider practices in improving population health outcomes for patients with hypertension (HTN) and diabetes (DM). This initiative is funded by the Centers for Disease Control (CDC) (DP13-1305) and supports QI activities through practice level coaching. Through this Chronic Disease Improvement Collaborative, Maine Quality Counts will support primary care practices in engaging in changes and interventions that will result in improved outcomes for people living with diabetes and hypertension.

The purpose of the CDIC is to redesign Maine primary care practices to:
• Improve blood pressure control of hypertensive patients so that 65% of hypertensive patients have BP<140/90 mm Hg.
• Improve HbA1c control of diabetic patients so that 80% of diabetic patients whose most recent HbA1c level is <9.0% during the measurement year.

Family of Measures:
The table on the following page includes all measures that will be collected for improvement purposes during the Collaborative, referred to as the Project “Family of Measures.”
• For the baseline and ongoing (monthly) data collection, we require that all practices report on 5 measures (2 Outcome and 3 Process)
• For practices participating for MOC, we will require reporting on a total of 8 measures (4 Outcome and 4 Process).
• The operational definitions for each measure are below to guide your data reporting process.

Data Collection and Reporting
Each month, your team (with support of QI Specialists as needed) will review patient charts to determine appropriate data (as specified below) to enter into the web-based portal.

Process: Please randomly select 20 charts each month—10 of patients with diabetes and 10 for patients with hypertension seen during the month. If less than 10, report data on 100% of patients seen during the month. A sampling method is being used to reduce the burden of data collection. Please sample based on your knowledge of the process. For example, do not select 10 charts from the same week /same provider since it would not be a representative sample. Review each chart for the information below and enter them into the data collection tool.

Enter the numerator and denominator for each measure (or number yes/no as applicable) by the 2nd Friday of each month into the web based portal.

Analysis and Improvement
Teams will be able to generate monthly run charts on these measures and, with the support of the Quality Improvement Specialist, review trends to track improvement patterns. Your QI Specialist will guide you in analyzing measure trends and testing improvements. Teams are expected to meet at least monthly, and a Quality Improvement Specialist will be available 2x/month to support this work.
Family of Measures for Ongoing Reporting
The following measures will be reported monthly, due the 2nd Friday of each month for the reporting period ending with the prior month.

NON-MOC Participating Practices report 5 measures monthly (see definitions, p 3 & 4)

<table>
<thead>
<tr>
<th>1 &amp; 2. Outcome Measures (Baseline/Monthly)</th>
<th>3 &amp; 4. Process Measures (Baseline/Monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Numerator / Denominator via QI Team Space</td>
<td>Attest via QI Team Space (Y or N)</td>
</tr>
<tr>
<td>HTN: BP measured &amp; controlled: BP &lt;140/90 (NQF 18)</td>
<td>Registry Use</td>
</tr>
<tr>
<td>Diabetes: Glycemic control measured &amp; collected : HbA1c &gt;9% (NQF 59)</td>
<td>Population Management</td>
</tr>
</tbody>
</table>

5. Additional Process Measures: All practices select one measure from this category.
(Chart Audit: 10 charts each condition; report N & D via QI Team Space)

- Intensifying Clinical Management
- Pre-Visit Planning
- Team-Based Care Plan
- Self-Management Goal
- Referral for Diabetes Education

MOC Participating Practices report 8 measures monthly (see definitions, p 3 & 4)

<table>
<thead>
<tr>
<th>1 – 4. Outcome Measures (Baseline/Monthly)</th>
<th>5 &amp; 6. Process Measures (Baseline/Monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Numerator / Denominator via QI Team Space</td>
<td>Attest via QI Team Space (Y or N)</td>
</tr>
<tr>
<td>HTN: BP measured &amp; controlled: BP &lt;140/90 (NQF 18)</td>
<td>Registry Use</td>
</tr>
<tr>
<td>Diabetes: Glycemic control measured &amp; collected : HbA1c &gt;9% (NQF 59)</td>
<td>Population Management</td>
</tr>
<tr>
<td>HbA1c &lt;8% (NQF 0575)</td>
<td></td>
</tr>
<tr>
<td>LDL &lt;100 (NQF 0064)</td>
<td></td>
</tr>
</tbody>
</table>

7 & 8. Additional Process Measures: All practices select two measures from this category.
(Chart Audit: 10 charts each condition; report N & D via QI Team Space)

- Intensifying Clinical Management
- Pre-Visit Planning
- Team-Based Care Plan
- Self-Management Goal
- Referral for Diabetes Education
**MEASURE DEFINITIONS**

The following measures will be reported monthly, due the 2nd Friday of each month for the reporting period ending with the prior month.

<table>
<thead>
<tr>
<th>Category</th>
<th>Label &amp; Description</th>
<th>Numerator (N)</th>
<th>Denominator (D)</th>
<th>CDIC Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome Measures</strong>&lt;br&gt;(Required for all Practices)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDIC O.1 HTN: BP measured &amp; controlled (NQF 0018): BP &lt;140/90</td>
<td>The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (&lt;140/90) during the measurement year.</td>
<td>N = Total number of patients from the denominator with last blood pressure measurement with systolic blood pressure less than 140 mm Hg and the diastolic blood pressure less than 90 mm Hg.</td>
<td>D = Total number of patients 18 to 85 years of age with a diagnosis of hypertension (HTN) during the measurement year.</td>
<td>≥65%</td>
</tr>
<tr>
<td>CDIC O.2 Diabetes: Glycemic control measured &amp; collected (NQF 0059): HbA1c &gt;9%</td>
<td>The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level during the measurement year was greater than 9.0% (poor control) or was missing a result, or for whom an HbA1c test was not done during the measurement year.</td>
<td>N = Total number of patients from the denominator whose most recent HbA1c level is greater than 9.0% or is missing a result, or for whom an HbA1c test was not done during the measurement year.</td>
<td>D = Patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year.</td>
<td>&lt;20%</td>
</tr>
<tr>
<td>Category</td>
<td>Label &amp; Description</td>
<td>Definition / Reporting Guide</td>
<td>CDIC Goal</td>
<td></td>
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<tr>
<td>----------</td>
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<td></td>
</tr>
<tr>
<td><strong>Process Measures</strong>&lt;br&gt;Required for all Practices</td>
<td><strong>CDIC P.1:</strong> Registry Use</td>
<td><strong>DEFINTION:</strong> Team member accessed the practice registry at least once in the last month to assess quality measures for DM &amp; HTN (e.g. someone at the practice owns the task of accessing the registry and reviewing the performance measures of the CDIC).&lt;br&gt;&lt;br&gt;<strong>ATTEST</strong> Y / N (N/D not applicable)</td>
<td>&gt;80% practices answer Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CDIC P.2:</strong> Population Management</td>
<td><strong>DEFINTION:</strong> Team member used registry data to implement an evidence-based protocol to drive one or more actions to improve care for practice populations with DM &amp; HTN.&lt;br&gt;&lt;br&gt;<strong>ATTEST</strong> Y / N (N/D not applicable)</td>
<td>&gt;80% practices answer Y</td>
<td></td>
</tr>
<tr>
<td><strong>Intensifying Clinical Management</strong></td>
<td>Provider or team initiated appropriate intervention at/during clinical visit was based on DM or HTN measures (e.g. provider/team took action to address issue or escalate treatment for patients that don’t meet guidelines ).&lt;br&gt;&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 HTN patients (chart audit)&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 DM patients (chart audit)</td>
<td>&gt;60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-visit Planning</strong></td>
<td>There is evidence in the chart of a pre-visit planning process – i.e. chart was reviewed for lab needs, patient testing, education, blood sugar logs, needed follow up, etc.&lt;br&gt;&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 HTN patients (chart audit)&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 DM patients (chart audit)</td>
<td>&gt;60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Team-based Care Plan</strong></td>
<td>A team-based care plan was created that specifies treatment and/or follow up to occur in between visits and/or before the next visit. (e.g. call to patients, medication check, education, nurse care plan check).&lt;br&gt;&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 HTN patients (chart audit)&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 DM patients (chart audit)</td>
<td>≥60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Management Goal-Setting</strong></td>
<td>A self-management plan was created and includes one or more specific goals developed with the patient.&lt;br&gt;&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 HTN patients (chart audit)&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 DM patients (chart audit)</td>
<td>≥60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Referral for Diabetes Education</strong></td>
<td>Patients with HbA1c&gt;9 who have not previously completed diabetes self-management education program were referred to CDE or DSMT program.&lt;br&gt;&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 HTN patients (chart audit)&lt;br&gt;N = # of patients that meet this measure&lt;br&gt;D = 10 DM patients (chart audit)</td>
<td>≥60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Outcome Measures (Required only for MOC Participating Practices)</td>
<td>CDIC O.3: Hemoglobin A1c Control (NQF 0575): HbA1c &lt;8%</td>
<td>CDIC O.4: LDL Control (NQF 0064): LDL &lt;100</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level is &lt;8.0% during the measurement year.</td>
<td>N = Patients whose most recent HbA1c level is less than 8.0% during the measurement year. D = Patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year.</td>
<td>N = Members whose most recent LDL-C test is &lt;100 mg/dL during the measurement year. D = Members 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background: Poor control puts the individual at risk for complications including renal failure, blindness, and neurologic damage</td>
<td>Exclusions (optional):</td>
<td>Exclusions (optional):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Exclude patients who did not have a diagnosis of diabetes, in any setting, during the measurement year or the year prior to the measurement year. AND - Exclude patients who meet either of the following criteria: - A diagnosis of polycystic ovaries, in any setting, any time in the patient’s history through December 31 of the measurement year. - A diagnosis of gestational or steroid-induced diabetes, in any setting, during the measurement year or the year prior to the measurement year.</td>
<td>- Exclude members with a diagnosis of polycystic ovaries who did not have a face-to-face encounter, in any setting, with a diagnosis of diabetes during the measurement year or the year prior to the measurement year. Diagnosis may occur at any time in the member’s history, but must have occurred by the end of the measurement year.</td>
<td>- Exclude members with gestational or steroid-induced diabetes who did not have a face-to-face encounter, in any setting, with a diagnosis of diabetes during the measurement year or the year prior to the measurement year. Diagnosis may occur during the measurement year or the year prior to the measurement year, but must have occurred by the end of the measurement year.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

>60%

>36%
Appendix 8: Other Resources

Workflow

One step to improving your chronic disease care is to carefully inventory your current workflow for chronic disease care. This process will assist your team in identifying areas and steps in the workflow that are redundant, could be made more efficient, or could be delegated across team members. Workflow is highly context-dependent, but should take into consideration the entire visit episode to include activities from pre-visit to post-visit. Each practice is unique in its staffing and physical layout, and should complete its own analysis. Below is a sample schematic outlining all phases of the visit episode, including reference to the elements necessary to meet Meaningful Use requirements. PowerPoint can be easily used to develop a flow diagram.

---

Sample Templates

This section provides some sample templates for providers and your QI Teams to use related to 1) documenting a QI plan, 2) depicting DM clinical support embedded in the electronic health record, and 3) assisting patients in developing self-management goals. Additional templates are included in the tools highlighted in the Resources section of this document.

**Quality Improvement Plan Template**

<table>
<thead>
<tr>
<th>KEY DRIVER</th>
<th>EVIDENCE-BASED STRATEGY</th>
<th>PERSON RESPONSIBLE</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimize Registry</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Standardize Care Processes</td>
<td></td>
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<tr>
<td>Incorporate Planned Care</td>
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<td></td>
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</tr>
<tr>
<td>into Every Visit</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Support Patient Self-Management</td>
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<td></td>
</tr>
</tbody>
</table>

**Example of Diabetes Clinical Decision Support – Diabetes Wizard Program**

**Template: Setting a Diabetes Self-Management Goal**

Self-management is what you do every day; you decide what to eat, you decide whether to exercise, you decide if and when you will check your blood sugar or blood pressure, and you decide if you will take your medications. Everyone does self-management, but the best self-management leads to good control of diabetes and better health. Good control for diabetes means:

- Your hemoglobin A1C is less than 7.
- Your systolic blood pressure (top number) is less than 130.
- Your diastolic blood pressure (bottom number) is less than 70.
- Your LDL (bad) cholesterol is less than 100.
- You do not have frequent low blood sugar (hypoglycemia) attacks.

If your diabetes is not in good control, something needs to change. Some changes that you can do to help get diabetes into good control include:

- Choosing healthier types and amounts of food.
- Including walking or other exercise in your normal daily routine.
- Monitoring your sugar more often.
- Changing your medications to lower your blood sugar.

- Stopping smoking.
- Managing stress and depression.
- Changing medication to improve your cholesterol or lower your blood pressure.

You must decide what changes you are willing and able to make. To start; answer this question "**What is the one thing you would like to do this week to improve your health?**" To reach your goal, you need to have a plan. Your plan needs to be specific. Write your answer below:

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
<table>
<thead>
<tr>
<th>What will you do?</th>
<th>When you will do it?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>How will you do it?</td>
<td>Where will you do it?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>How often will you do it?</td>
<td>The things that could make it hard to achieve my goal are:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>My plan for overcoming these difficulties is:</td>
<td>People who can help me achieve my goal:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We want to support you and help you make your healthy change. The best way for us to help is to hear from you about how things are going. Please call in one week to tell us about your progress or tell us about problems that are making progress difficult. Change is difficult:

- You may not succeed at first.
- You can always start over.
- Every day is a new chance to do something good for you.

Based on materials developed at the Family Medicine Center of Akron. Available at: [http://www.champsonline.org/ToolsProducts/ClinicalResources/PatientEdTools/PatientSelfMgmtTools.html](http://www.champsonline.org/ToolsProducts/ClinicalResources/PatientEdTools/PatientSelfMgmtTools.html)
**Consideration for Organizing the Planned Visit**

1. **Assign Team Roles and Responsibilities**
   - Be sure to identify the logistical and clinical tasks necessary for preparing for and completing the visit. All tasks need to be delegated to specific team members so that nothing is left to chance.
   - For example, the following questions might need to be addressed:
     - Who will call the patient to schedule the visit?
     - Do lab tests need to be ordered in advance?
     - Who will print off the patient encounter form for use during the visit?
     - If the patient has diabetes, who will take off shoes and socks? Who will examine the feet?
     - Who will review the patient’s self-management goals?

2. **Call a Patient in for a Visit**
   Develop a script for the call, and decide who on the team will make the call. Set the tone and expectations for what the visit will address. The following is a sample script you can adapt to your setting.

   “Hello Ms. Smith. This is Karen calling from Dr. Brown’s office. He is interested in making sure all of his patients with [diabetes/hypertension] receive the best possible care. He has asked me to have you come in for visit to discuss your [diabetes/hypertension]. If you have other health concerns, we may have to address those at a future visit. By focusing on just your [diabetes/hypertension] we can work with you to better manage your health. Can we set up a time that is convenient for you? Please bring all your current medications (and anything else pertinent to the condition) with you. Thank you. We will call you a day before the visit to make sure you are still able to come.”

   - “Cold” calls may frighten patients. Introducing the idea of a planned visit at an earlier patient-initiated visit may mitigate patient concern.
   - If you choose to send invitations to patients by mail or email, be sure to track which patients respond to this method of communication. You should plan to contact non-responders in another way.

3. **Deliver Clinical Care**
   Prior to the visit, print a summary/encounter form from your registry or pull the chart in advance to review the patient’s care to date. Document what clinical care needs to be done during the visit, and which team member is responsible.

4. **Determine How to Meet Regularly**
   At least until new roles are well integrated into the normal work flow, many practices have team huddles for 5-10 minutes in the morning to review the schedule and identify patients with chronic conditions coming in that day for an acute care visit. Decide how best to meet as a team to manage these patients. Determine the best intervals and timing for these meetings and stick to them. They help the team stay focused on the redesign in your practice and reinforce the team approach.

Tools and Resources

The following resources include concepts, tools and guidance for improving aspects of chronic care from multiple perspectives.


  The concepts and tools in this toolkit are intended to give busy clinical practices an introduction to a set of activities and changes that support patients and families in the day-to-day management of chronic conditions.

- **“Reducing Care Fragmentation: A Toolkit for Coordinating Care”**

  The recommendations in this toolkit the best evidence in care coordination that supports high-quality referrals and transitions that meet the six IOM aims for high-quality health care, and assure that all involved providers, institutions and patients have the information and resources they need to optimize a patient’s care. The Model looks at care coordination from the perspective of a patient-centered medical home.

- **“Diabetes Prevention And Lifelong Management: Redesigning The Health Care Team”**
  [http://ndep.nih.gov/media/NDEP37_RedesignTeamCare_4c_508.pdf](http://ndep.nih.gov/media/NDEP37_RedesignTeamCare_4c_508.pdf)

  This guide is designed to help health care professionals and health care organizations implement collaborative, multidisciplinary team care for adults and children with diabetes in a variety of settings. Well-implemented diabetes team care can be cost-effective and the preferred method of care delivery, particularly when services include health promotion and disease prevention, in addition to intensive clinical management.

- **“Integrating Chronic Care and Business Strategies in the Safety Net”**

  The toolkit provides a step-by-step practical approach to help safety net organizations implement the Chronic Care Model effectively and sustainably.

- **Clinical Decision Support Starter Kit (2011)**
  [http://www.healthit.gov/sites/default/files/del-3-7-starter-kit-intro.pdf](http://www.healthit.gov/sites/default/files/del-3-7-starter-kit-intro.pdf)

  This tool is designed to help small practices take the first steps toward implementing clinical decision support tools. It provides information about commonly-used clinical decision support and the relationship between clinical decision support and Meaningful Use, including examples of how to implement clinical decision support.
• **Continuous Quality Improvement (CQI) Strategies to Optimize your Practice**
  

  *This Primer provides an overview of CQI concepts and processes as well as tools, techniques and strategies to guide and manage continuous quality improvement techniques in a practice setting.*

• **Seven Leadership Leverage Points for Organization-Level Improvement in Health Care**
  
  [http://www.improvingchroniccare.org/downloads/1.1_seven_leadership_leverage_points.pdf](http://www.improvingchroniccare.org/downloads/1.1_seven_leadership_leverage_points.pdf)

  *This white paper outlines key leverage points for leaders who want to achieve dramatic, system-level performance improvement. It is designed for individual leaders in planning their work to share best leadership practices and results across organizations to promote large-system change in health care.*
Appendix 9: Clinical Care Guidelines

Algorithms and Protocols

The QI Team can use this clinical algorithms section of the change package to facilitate the diagnosis and management of chronic diseases based on professionally endorsed clinical guidelines. This section will allow the Team to understand standard screening guidelines and treatment flow rubrics to treat patients with chronic disease.

Hypertension

The Institute for Clinical Systems Improvement provides an algorithm and guidelines for HTN diagnosis and treatment\(^{18}\), available here: [https://www.icsi.org/_asset/wjqy4g/HTN.pdf](https://www.icsi.org/_asset/wjqy4g/HTN.pdf) The Institute for Clinical Systems Improvement guidelines for hypertension diagnosis and treatment are currently under review with expected approval in November 2014. The Centers for Disease Control and Prevention provides the protocol below, available in a modifiable electronic format at [http://millionhearts.hhs.gov/Docs/Hypertension-Protocol.pdf](http://millionhearts.hhs.gov/Docs/Hypertension-Protocol.pdf)

---

Modifiable Centers for Disease Control and Prevention Protocol for Controlling Hypertension in Adults

**Name of Practice**

Protocol for Controlling Hypertension in Adults

The blood pressure (BP) goal is set by a combination of factors including scientific evidence, clinical judgment, and patient tolerance. For most people, the goal is <140 and <90; however, some individuals may be better served by other BP goals. Lifestyle modifications (LM) should be initiated in all patients with hypertension (HTN) and patients should be assessed for target organ damage and existing cardiovascular disease. Self-monitoring is encouraged for most patients throughout their care and requesting and reviewing readings from home and community settings can help in achieving and maintaining good control. For patients with hypertension and certain medical conditions, specific medications should be considered, as listed in the box on the right below.

**Systolic 140-159 or diastolic 90-99 (Stage 1 HTN)**
- LM as a trial
- Consider adding thiazide

**Systolic > 160 or diastolic > 100 (Stage 2 HTN)**
Two drugs preferred:
- LM and
- Thiazide and ACEI, ARB, or CCB
- Or consider ACEI and CCB

**Re-check and review readings within 3 months**

**BP at goal?**

**NO**
- Thiazide for most patients or ACEI, ARB, CCB, or combo
- If currently on BP med(s), titrate and/or add drug from different class

**YES**
- Encourage self-monitoring and adherence to meds
- Advise patient to alert office if he/she notes BP elevation or side effects
- Continue office visits as clinically appropriate

**Re-check and review readings in 2-4 weeks**

**BP at goal?**

**NO**
- Optimize dosage(s) or add additional medications
- Address adherence and advise on self-monitoring, and request readings from home and other settings
- Consider identifiable causes of HTN and referral to HTN specialist

**YES**
- Optimize dosage(s) or add additional medications
- Address adherence and advise on self-monitoring, and request readings from home and other settings
- Consider identifiable causes of HTN and referral to HTN specialist

**Medications to consider for patients with hypertension and certain medical conditions**
- Coronary artery disease/Post MI: BB, ACEI
- Heart failure with reduced EF: ACEI or ARB; BB (approved for this use), ALDO, diuretic
- Heart failure with preserved EF: ACEI or ARB, BB (approved for this use), diuretic
- Diabetes: ACEI or ARB, diuretic, BB, CCB
- Kidney disease: ACEI or ARB
- Stroke or TIA: diuretic, ACEI

**Re-check interval should be based on patient’s risk of adverse outcomes**

*See page two for lifestyle modifications*
Instructions for use of the template

1. Gather clinical staff to make consensus decisions about:
   - Specific medications to be prescribed for most patients with hypertension
   - Medications to consider for patients with hypertension and certain medical conditions
   - Starting dosages and dosage increases with each titration
   - Time intervals for follow-up and titration

2. Customize the template by accepting the variables in red or modifying them with other drug names, dosages, and titration

   - As needed, develop separate protocols for subpopulations with different treatment goals

3. Adopt the protocol across the practice or system and revise it over time to meet the needs of patients and staff

### Lifestyle Modifications' (LM)

<table>
<thead>
<tr>
<th>Modification</th>
<th>Recommendation</th>
<th>Approximate SBP Reduction (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight reduction</td>
<td>Maintain normal body weight (body mass index 18.5–24.9 kg/m²)</td>
<td>5–20 mm Hg/10kg</td>
</tr>
<tr>
<td>Adopt DASH eating plan</td>
<td>Consume a diet rich in fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat</td>
<td>8–14 mm Hg</td>
</tr>
<tr>
<td>Dietary sodium reduction</td>
<td>Reduce dietary sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g sodium chloride)</td>
<td>2–8 mm Hg</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week which may be broken into shorter time intervals such as 10 minutes each of moderate or vigorous effort)</td>
<td>4–9 mm Hg</td>
</tr>
<tr>
<td>Moderation of alcohol consumption</td>
<td>Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz. 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons</td>
<td>2–4 mm Hg</td>
</tr>
</tbody>
</table>

**SBP** – systolic blood pressure

*The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals

**DASH** – Dietary Approaches to Stop Hypertension

### Abbreviations

- ACEI – Angiotensin-Converting Enzyme Inhibitor
- ALDO – Aldosterone Antagonist
- ARB – Angiotensin II Receptor Blocker
- BB – Beta Blocker
- CCB – Calcium Channel Blocker
- EF – Ejection Fraction
- MI – Myocardial Infarction
- TIA – Transient Ischemic Attack

### References


### Other Resources


### Suggested Citation

Diabetes

The Maine CDC provides the algorithm below to guide DM diagnosis and management, based on American Diabetes Association guidelines.

### SCREENING GUIDELINES

- Testing should be considered in all adults who are **Overweight** (BMI ≥ 25) AND have any of these additional risk factors:
  - Physical inactivity
  - First degree relative with diabetes
  - High-risk ethnicity (African American, Latino, Native American, Asian American, Pacific Islander)
  - A woman who delivered a baby weighing > 9 pounds or was diagnosed with gestational diabetes
  - Hypertension (>140/90 or on therapy for hypertension)
  - HDL cholesterol level < 35 and/or a triglyceride level > 250
  - A woman with polycystic ovarian syndrome
  - A1C > 5.7%, IGT or IFG on previous testing
  - Other clinical conditions associated with insulin resistance
  - History of CVD
- In those without these risk factors, testing should begin at **age 45**

### EVALUATION

Classification of Pre-Diabetes and Diabetes (repeat testing on subsequent day to confirm)

<table>
<thead>
<tr>
<th></th>
<th>Fasting plasma glucose mg/dl</th>
<th>A1C</th>
<th>OGTT 2 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt; 100</td>
<td>&lt; 5.7</td>
<td>&lt; 140</td>
</tr>
<tr>
<td>Pre-diabetes</td>
<td>100-125</td>
<td>5.7-6.4</td>
<td>140-199</td>
</tr>
<tr>
<td>Diabetes</td>
<td>≥ 126</td>
<td>≥ 6.5</td>
<td>≥ 200</td>
</tr>
</tbody>
</table>

The committee chose to present the guidelines from the American Diabetes Association in an effort to better identify, treat and refer people with pre-diabetes or diabetes. The committee realizes that some physicians may follow other guidelines and hopes that some of this information will be useful to all physicians.
**National Diabetes Prevention Program (NDPP)** is based on the Diabetes Prevention Program, a research study that demonstrated that people who are at high risk for type 2 diabetes can prevent or delay the disease by 58% (71% if over age 60) by making modest lifestyle changes through a structured program. Lifestyle coaches work with a group of participants to help them reduce their risk of developing type 2 diabetes by:

- Losing weight through healthy eating
- Being more physically active
- Learning to identify and address barriers to healthy eating and physical activity

Participants work towards the goals of losing 7% of their starting body weight & reaching/maintaining 150 minutes of moderate physical activity weekly.

**Living Well for Better Health** is a 6 week workshop for adults of all ages who want to learn ways to better manage their health concerns. The workshop participants meet once a week for 2 ½ hours. Workshops are facilitated from a highly detailed manual by two facilitators.

Topics in the workshop include: 1) techniques to deal with problems such as frustration, fatigue, pain and isolation; 2) appropriate exercise for maintaining and improving strength, flexibility and endurance; 3) appropriate use of medications; 4) communicating effectively with family, friends and health professionals; 5) nutrition and 6) use of community resources.

**Example** Move More is a free program for people who want to be more active. The key to the Move More Project is a group of "Movers" or champions in the community or workplace who provide support to people who enroll. Move More offers:

- Support from a “Mover”
- Physical Activity Guide
- Maps of outdoor walking trails
- Physical activity log sheets

**Example** Let’s Go! is a nationally recognized childhood obesity prevention program whose goal is to increase physical activity and healthy eating for children from birth to 18 through policy and environmental change. Let’s Go! works in six sectors to reach families where they live, study, work and play to reinforce the importance of healthy eating and physical activity. The 5210 message (5 or more fruits and vegetables, 2 hours of recreational screen time, 1 hour or more of physical activity and 0 sugary drinks, more water and low fat milk a day) is used consistently across all sectors.

**Example** The “You Can Do Something” Diabetes Prevention DVD is a short DVD featuring real Maine people who have pre-diabetes or diabetes. It has 3 goals:

1. Inform adults with a diagnosis of pre-diabetes or diabetes that this diagnosis is serious and requires skill building.
2. Inform adults with pre-diabetes or diabetes that supports and services are available in the community if they want treatment and education.
3. Inform adults with pre-diabetes or diabetes and their family members that thousands of Maine people with pre-diabetes or diabetes are doing nothing and need encouragement to make a change.

The [Insert DSMT Program Name here & Contact info] provides comprehensive diabetes services designed for patients who have been newly diagnosed, have trouble controlling their diabetes or who need long-term care and follow-up. They are recognized by the American Diabetes Association (ADA) or the American Association of Diabetes Educators (AADE) for meeting national standards for Diabetes Self-Management Education.

The evidence-based programs listed here are led by trained leaders who offer the programs with fidelity. This algorithm was developed by the Blood Pressure – Risk Disease Intervention Planning Committee whose members include: Maine CDC, Diabetes Prevention and Control Program, Maine CDC Cardiovascular Health Program and Maine General Health. Approved: September 2009, updated 02/11. This is an update, drafted 01/14.
Considerations for Special Populations

In addition to the general guidelines provided in the previous section, there are some populations that are especially vulnerable to developing chronic conditions that present special challenges to management. For example, diagnosis and/or management of children and adolescents, pregnant women, older adults, and patients with mental comorbidities require providers to take into account special considerations unique to each group. In particular, patients with chronic medical and mental health comorbidities are at higher risk for complications from diabetes and hypertension due to medication side effects and self-management deficits that impact adherence to medications or other treatment approaches. In addition, quality care management of older adults requires that providers are attuned to potential confounding complications of comorbidities, and potential for functional impairment. Individual glycemic targets may be relaxed for older adults. This section includes the following guidelines specific to these special populations:

Contents:
1. Type 1 Diabetes (Insulin Therapy, glycemic targets, screening)- ADA 2014 Guidelines
2. Screening Children for Type 2 Diabetes and Prediabetes- ADA 2014 Guidelines
5. Guidelines for Managing Care of Older Adults with Diabetes- ADA 2014 Guidelines
6. Considerations for Management of Patients with Mental and Medical Co-Morbidities -RWJF Synergy Project

Reference:
## Insulin Therapy

**Most patients with type 1 diabetes:**
- Treat with multiple-dose insulin injections (3-4 injections/day of basal and prandial insulin) or continuous subcutaneous insulin infusion
- Educate on how to match prandial insulin dose to carbohydrate intake, pre-meal blood glucose, and anticipated activity
- Use insulin analogs to reduce risk of hypoglycemia
- Consider using sensor-augmented low glucose suspend threshold pump in patients with frequent nocturnal hypoglycemia and/or hypoglycemia unawareness
- Consider screening for autoimmune diseases as appropriate: Thyroid dysfunction, vitamin B12 deficiency, celiac disease

## Glycemic Targets

Consider risk-benefit assessment, including hypoglycemia risk, when individualizing targets

<table>
<thead>
<tr>
<th></th>
<th>0-6 yrs</th>
<th>6-12 yrs</th>
<th>13-19 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A1C</strong></td>
<td>&lt;8.5%†</td>
<td>&lt;8%†</td>
<td>&lt;7.5%</td>
</tr>
<tr>
<td><strong>PG: Prior to meals</strong></td>
<td>100-180 mg/dL</td>
<td>90-180 mg/dL</td>
<td>90-130 mg/dL</td>
</tr>
<tr>
<td><strong>PG: bedtime &amp; overnight</strong></td>
<td>110-200 mg/dL</td>
<td>100-180 mg/dL</td>
<td>90-150 mg/dL</td>
</tr>
</tbody>
</table>

**Rationale**
- Vulnerability of hypoglycemia
- Insulin sensitivity
- Unpredictability in dietary intake and physical activity
- A lower goal (<8.0%) is reasonable if it can be achieved without excessive hypoglycemia
- Vulnerability of hypoglycemia
- A lower goal (<7.5%) is reasonable if it can be achieved without excessive hypoglycemia
- A lower goal (<7.0%) is reasonable if it can be achieved without excessive hypoglycemia
Key Concepts in Setting Glycemic Goals:

- Goals should be individualized and lower goals may be reasonable based on benefit-risk assessment
- Blood glucose goals should be modified in children with frequent hypoglycemia or hypoglycemia unawareness
- Postprandial blood glucose values should be measured when there is a discrepancy between preprandial blood glucose values and A1C levels and to help assess glycemia in those on basal-bolus regimens

Screening

Inform individuals with type 1 diabetes of the opportunity to have relatives screened for risk of type 1 diabetes in the clinical research setting

- Early diagnosis may limit complications, extend long-term endogenous insulin production
- Widespread testing of asymptomatic low-risk persons: not recommended
- Screen high-risk persons only in clinical research setting
Screening Children for Type 2 Diabetes and Prediabetes

Consider for all children who are overweight* and have ≥2 of any of the following risk factors:
- Family history of type 2 diabetes in first- or second-degree relative
- Race/ethnicity†
- Signs of insulin resistance or conditions associated with insulin resistance‡
- Maternal history of diabetes or GDM during child’s gestation

Begin testing at age 10 yrs or onset of puberty
Test every 3 yrs
A1C test recommended for diagnosis in children and adolescents

<table>
<thead>
<tr>
<th>At Diagnosis</th>
<th>After Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform eye exam</td>
<td>Similar screening, treatment as for type 1 diabetes for</td>
</tr>
<tr>
<td>Measure risk factors</td>
<td>• Hypertension</td>
</tr>
<tr>
<td>• Blood pressure</td>
<td>• Albumin excretion</td>
</tr>
<tr>
<td>• Fasting lipids</td>
<td>• Dyslipidemia</td>
</tr>
<tr>
<td>• Albumin excretion</td>
<td>• Retinopathy</td>
</tr>
</tbody>
</table>

Other issues that may need to be addressed:
- polycystic ovarian disease, other pediatric obesity comorbidities§

Children: age ≤18 yrs
- BMI >85th percentile for age and sex, weight for height >85th percentile, or weight >120% ideal for height

†Native American, African American, Latino, Asian American, Pacific Islander
‡Acanthosis nigricans, hypertension, dyslipidemia, PCOS, or small-for-gestational-age birth weight
§Sleep apnea, hepatic steatosis, orthopedic complications, psychosocial concerns
# American Academy of Pediatrics (AAP) Recommendations for Managing Newly Diagnosed Type 2 Diabetes in Children and Adolescents


## Insulin Therapy

Initiate insulin therapy in children and adolescents with type 2 diabetes in whom:

- Ketosis* or diabetic ketoacidosis† is present
- The distinction between type 1 and type 2 diabetes is unclear

In usual cases, initiate insulin therapy when

- Random venous or plasma blood glucose is ≥250 mg/dL or
- A1C >9%

Patients with symptoms of hyperglycemia who are diagnosed with diabetes should be evaluated for ketosis

- If positive for ketosis, evaluate for ketoacidosis

*Serum or urine ketones
†Absolute or relative insulin deficiency, causing fat breakdown and formation of beta-hydroxybutyrate

## Treatment with Lifestyle Changes & Metformin

The following treatment recommendation applies to all instances except ketosis, diabetic ketoacidosis, and unclear distinction between type 1 and type 2 diabetes

**At type 2 diabetes diagnosis, initiate:**

- Lifestyle changes: Nutrition interventions, physical activity
- Metformin
  - Confirm type 2 diabetes diagnosis prior to initiation
  - Start at low dose (500 mg/d) due to possible GI side effects
  - Monitor for glycemic deterioration
- Add insulin, other antihyperglycemic therapy if needed

*Metformin and insulin are the only antihyperglycemic agents approved for use in children/adolescents by the US Food and Drug Administration.*

<table>
<thead>
<tr>
<th>A1C Testing</th>
<th>Blood Glucose Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test A1C every 3 months</td>
<td>Monitor finger-stick blood glucose among patients:</td>
</tr>
<tr>
<td>A1C target: &lt;7%</td>
<td>- Taking insulin or medications with risk for hypoglycemia</td>
</tr>
<tr>
<td>Individualized target</td>
<td>- Initiating or changing treatment regimen</td>
</tr>
<tr>
<td></td>
<td>- Not meeting treatment goals</td>
</tr>
<tr>
<td></td>
<td>- With comorbidities</td>
</tr>
<tr>
<td></td>
<td>Blood glucose goal in most patients: 70-130 mg/dL</td>
</tr>
<tr>
<td></td>
<td>The frequency of blood glucose testing is:</td>
</tr>
<tr>
<td></td>
<td>- Newly diagnosed type 2 diabetes patients should test before meals (including morning fasting) and at bedtime; frequency may be adjusted once targets are met</td>
</tr>
<tr>
<td></td>
<td>- Patients taking a single bedtime long-acting insulin should test daily fasting blood glucose. Clinical context will dictate the frequency of blood glucose testing for patients taking oral agents; frequency should increase during illness or symptoms of hyperglycemia or hypoglycemia. Patients taking an oral agent plus a single injection of long-acting insulin should test 2 times per day (fasting plus a second test).</td>
</tr>
<tr>
<td></td>
<td>- Patients taking multiple daily insulin injections (basal bolus) should test prior to every meal</td>
</tr>
<tr>
<td></td>
<td>- Intensify treatment if A1C, blood glucose goals not met</td>
</tr>
<tr>
<td></td>
<td>- Increase clinic visits</td>
</tr>
<tr>
<td></td>
<td>- More frequent blood glucose monitoring</td>
</tr>
<tr>
<td></td>
<td>- Add ≥1 antihyperglycemic agent(s)</td>
</tr>
<tr>
<td></td>
<td>- Meet with registered dietician and/or diabetes educator</td>
</tr>
<tr>
<td></td>
<td>- Increase attention to diet, exercise</td>
</tr>
</tbody>
</table>
### Diet and Weight Loss

Interventions to reduce obesity should include:
- Diet, physical activity, nutrition counseling, parent/caregiver participation
- Formulate nutrition prescription as part of dietary intervention
- Increased intake of dietary fat and calorically sweetened beverages is associated with increased risk of overweight
- Increased fruit and vegetable intake is associated with decreased risk of overweight

**Diets that improve weight status:**
- Children aged 6-12 years: ≥900 kcal/day
- Children aged 13-18 years: ≥1,200 kcal/day

- Refer patients to a registered dietician
- Provide nutrition information
- Consume 3 planned meals with snacks each day
- No eating while watching TV, using computer
- Use smaller plates to make portions seem larger
- Leave small amounts of food on plate.

### Physical Activity

Moderate-to-vigorous exercise: ≥60 min/day
Create an individualized plan with patient and family
- Provide a written exercise “prescription” describing ideal duration, intensity, and frequency
- Include activities that can be incorporated into the patient’s daily routine
- Limit nonacademic screen time to <2 hours each day
- Discourage the presence of video screens, TVs in patients’ bedrooms

**Additional screening and treatment guidelines specific to comorbidities (hypertension, dyslipidemia, retinopathy, microalbuminemia, depression, and obesity-related medical conditions [non-alcoholic fatty liver disease, obstructive sleep apnea, orthopedic problems]) are found here:** [http://www.ndei.org/ADA-2014-guidelines-children-adolescents.aspx](http://www.ndei.org/ADA-2014-guidelines-children-adolescents.aspx)
## Gestational Diabetes Management Guidelines


### Preconception Care

<table>
<thead>
<tr>
<th>Maintain A1C levels as close to &lt;7.0% as possible before attempting conception</th>
<th>Provide preconception counseling starting at puberty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All women of childbearing potential</strong></td>
<td></td>
</tr>
<tr>
<td>Evaluate and treat (if necessary) in women contemplating pregnancy</td>
<td>• Retinopathy</td>
</tr>
<tr>
<td></td>
<td>• Nephropathy</td>
</tr>
<tr>
<td></td>
<td>• Neuropathy</td>
</tr>
<tr>
<td></td>
<td>• CVD</td>
</tr>
<tr>
<td>Evaluate, consider risk/benefit profile of medications being used for diabetes and associated conditions prior to conception</td>
<td>Contraindicated/not recommended in pregnancy:</td>
</tr>
<tr>
<td></td>
<td>• Statins</td>
</tr>
<tr>
<td></td>
<td>• ACEIs</td>
</tr>
<tr>
<td></td>
<td>• ARBs</td>
</tr>
<tr>
<td></td>
<td>• Most noninsulin therapies</td>
</tr>
</tbody>
</table>

### Gestational Diabetes

<table>
<thead>
<tr>
<th>Pregnant women with risk factors</th>
<th>First prenatal visit: screen for undiagnosed type 2 diabetes using standard criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women without known prior diabetes</td>
<td>Screen at 24-28 wks</td>
</tr>
<tr>
<td>Women with GDM</td>
<td>Screen for persistent diabetes 6-12 wks postpartum using OGTT and nonpregnancy diagnostic criteria</td>
</tr>
<tr>
<td>Women with GDM history and prediabetes</td>
<td>Lifestyle interventions or metformin for diabetes prevention</td>
</tr>
<tr>
<td>Glycemic targets</td>
<td>Preprandial: ≤95 mg/dL (5.3 mmol/L) and either</td>
</tr>
<tr>
<td></td>
<td>• 1-h postmeal: ≤140 mg/dL (7.8 mmol/L) or</td>
</tr>
<tr>
<td></td>
<td>• 2-h postmeal: ≤120 mg/dL (6.7 mmol/L)</td>
</tr>
</tbody>
</table>
## Gestational Diabetes Screening and Diagnosis

No uniform approach for GDM diagnosis
Two options for women not previously diagnosed with overt diabetes:

<table>
<thead>
<tr>
<th>“One-Step” (IADPSG)</th>
<th>“Two-Step” (NIH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 75-g OGTT with PG measurement fasting and at 1 h and 2 h, at 24-28 wks</td>
<td></td>
</tr>
<tr>
<td>• Perform OGTT in am after overnight fast (≥8 h)</td>
<td></td>
</tr>
<tr>
<td>• GDM diagnosis made if PG values in excess of</td>
<td></td>
</tr>
<tr>
<td>o Fasting: ≥92 mg/dL (5.1 mmol/L)</td>
<td></td>
</tr>
<tr>
<td>o 1 h: ≥180 mg/dL (10.0 mmol/L)</td>
<td></td>
</tr>
<tr>
<td>o 2 h: ≥153 mg/dL (8.5 mmol/L)</td>
<td></td>
</tr>
<tr>
<td>• 50-g GLT (nonfasting) with PG measurement at 1 h (Step 1), at 24-28 wks</td>
<td></td>
</tr>
<tr>
<td>• If PG at 1 h after load is ≥140 mg/dL* (10.0 mmol/L), proceed to 100-g OGTT (Step 2), performed while patient is fasting</td>
<td></td>
</tr>
<tr>
<td>• GDM diagnosis made when PG measured 3 h post-test is ≥140 mg/dL (7.8 mmol/L)</td>
<td></td>
</tr>
</tbody>
</table>

Threshold of 135 mg/dL in high-risk ethnic minorities with higher prevalence of GDM recommended by ACOG
### Guidelines for Managing Care of Older Adults with Diabetes

<table>
<thead>
<tr>
<th>Patient characteristics/health status</th>
<th>Rationale</th>
<th>Reasonable A1C goal*</th>
<th>Fasting or preprandial glucose (mg/dL)</th>
<th>Bedtime glucose (mg/dL)</th>
<th>Blood pressure (mmHg)</th>
<th>Lipids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy (few coexisting chronic illnesses, intact cognitive and functional status)</td>
<td>Longer remaining life expectancy</td>
<td>&lt;7.5%</td>
<td>90–130</td>
<td>90–150</td>
<td>&lt;140/80</td>
<td>Statin unless contraindicated or not tolerated</td>
</tr>
<tr>
<td>Complex/intermediate (multiple coexisting chronic illnesses* or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)</td>
<td>Intermediate remaining life expectancy, high treatment burden, hypoglycemia vulnerability, fall risk</td>
<td>&lt;8.0%</td>
<td>90–150</td>
<td>100–180</td>
<td>&lt;140/80</td>
<td>Statin unless contraindicated or not tolerated</td>
</tr>
<tr>
<td>Very complex/poor health (long-term care or end-stage chronic illnesses** or moderate-to-severe cognitive impairment or 2+ ADL dependencies)</td>
<td>Limited remaining life expectancy makes benefit uncertain</td>
<td>&lt;8.5%†</td>
<td>100–180</td>
<td>110–200</td>
<td>&lt;150/90</td>
<td>Consider likelihood of benefit with statin (secondary prevention more so than primary)</td>
</tr>
</tbody>
</table>

This represents a consensus framework for considering treatment goals for glycemia, blood pressure, and dyslipidemia in older adults with diabetes. The patient characteristic categories are general concepts. Not every patient will clearly fall into a particular category. Consideration of patient/caregiver preferences is an important aspect of treatment individualization. Additionally, a patient’s health status and preferences may change over time. ADL, activities of daily living. †A lower goal may be set for an individual if achievable without recurrent or severe hypoglycemia or undue treatment burden. *Coexisting chronic illnesses are conditions serious enough to require medications or lifestyle management and may include arthritis, cancer, CHF, depression, emphysema, falls, hypertension, incontinence, stage 3 or worse CKD, MI, and stroke. By multiple, we mean at least three, but many patients may have five or more (132). **The presence of a single end-stage chronic illness such as stage 3-4 CHF or oxygen-dependent lung disease, CKD requiring dialysis, or uncontrolled metastatic cancer may cause significant symptoms or impairment of functional status and significantly reduce life expectancy. †A1C of 8.5% equates to an eAG of ~200 mg/dL. Looser glycemic targets than this may expose patients to acute risks from glycosuria, dehydration, hyperglycemic hyperosmolar syndrome, and poor wound healing.
<table>
<thead>
<tr>
<th>Framework for Diabetes Care in Older Adults</th>
<th><a href="http://care.diabetesjournals.org/content/37/Supplement_1/S14.full#sec-179">http://care.diabetesjournals.org/content/37/Supplement_1/S14.full#sec-179</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Older adults who are</td>
<td>Same treatment goals as younger adults</td>
</tr>
<tr>
<td>• Functional</td>
<td></td>
</tr>
<tr>
<td>• Cognitively intact</td>
<td></td>
</tr>
<tr>
<td>• Expected to live long enough to reap benefits</td>
<td></td>
</tr>
<tr>
<td>Glycemic targets: may be relaxed for some older adults based on individual criteria</td>
<td></td>
</tr>
<tr>
<td>• Avoid hyperglycemic complications</td>
<td></td>
</tr>
<tr>
<td>Treat CV risk factors considering</td>
<td></td>
</tr>
<tr>
<td>• Timeframe of benefit, individual patient characteristics</td>
<td></td>
</tr>
<tr>
<td>• Hypertension treatment indicated in many older adults</td>
<td></td>
</tr>
<tr>
<td>• Lipid, aspirin therapy may benefit patients whose life expectancy is equal to timeframe of primary or secondary prevention trials</td>
<td></td>
</tr>
<tr>
<td>Individualize screening for complications</td>
<td></td>
</tr>
<tr>
<td>• Be mindful of complications that may lead to functional impairment</td>
<td></td>
</tr>
</tbody>
</table>
Considerations for Management of Patients with Mental and Medical Co-Morbidities

More than two thirds (68%) of adults with a mental disorder have at least one chronic medical comorbidity and nearly a third (29%) with a medical disorder also have a comorbid mental health condition. Patients in this population are at higher risk for complications from diabetes and hypertension for various reasons.

- Many psychotropic medications can cause weight gain – a risk factor for Type 2 diabetes.
- Self-management of diabetes and hypertension may be hampered by comorbid mental conditions. Depression may decrease motivation and energy needed for self-management activities, and may also adversely impact interpersonal relationships, including collaboration with providers.
- The likelihood of non-adherence to medical treatment regimens are three times greater for depressed patients compared with non-depressed patients.
- Patients with severe mental illness may fail to adhere to antipsychotic medications as well as those for medical conditions.
- Patients with comorbid mental and medical conditions benefit from a collaborative care approach with a multidisciplinary team.

The American Diabetes Association provides guidelines for working with patients who are taking antipsychotic medications.


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