



Patient Registry

Section Contents

- BCBSM patient-centered medical home patient registry criteria and guidelines
- Tool 2-1 — Difference between a registry and an EMR, how to obtain a free registry
- Tool 2-2 — Sample of clinical information from multiple sources
- Tool 2-3 — Sample of evidence-based care guidelines
- Tool 2-4 — Sample of a patient panel in the registry
- Tool 2-5 — Sample of patient communication
- Tool 2-6 — Sample of chronic disease gaps in care
- Tool 2-7 — Sample of physiological parameters and flags for patients not managed to goal
- Article — Using Computerized Registries in Chronic Disease Care, Part 3: Using Disease Registries
- Article — Using a Simple Patient Registry to Improve Chronic Disease Care

2.0 Patient Registry

Guidelines:

- A patient registry is a database that contains clinical data on patients to enable providers to manage their population of patients.
- Registry data must be in the form of data fields that are accessible for tabulation and population management
- Registry may be paper or electronic.
- Registry must include all established patients with the disease referenced in the capability, regardless of insurance coverage (including Medicare patients).
- Patients assigned by managed care organizations do not have to be included in registry if they are not established patients (reference 2.15).
- Patient information may be entered by the practice, populated from EMR or other electronic or manual sources, or populated with payer-provided data
 - o Registry must include data pertinent to the clinical performance measures contained in the EBCR (e.g., BCBSM-provided data or similar data from other sources)
- Registry may initially be a component of EMR for basic-level functioning, as long as the practice or the PO has the capability to use the EMR to generate routine population-level performance reports and reports on subsets of patients requiring active management.
 - o Subsets of patients requiring active management refers to those patients with particular chronic illness management needs including but not limited to those who have particular physiologic parameters out of control or who have not received specified, essential services
- Practice Units with registries and EMRs may elect to use EMR, provided it has the capabilities to produce population-level information in an automated or semi-automated form.
- Reference AAFP article for additional information on creating a registry:
<http://www.aafp.org/fpm/20060400/47usin.html>
- For all Patient Registry capabilities except 2.9, registry may be paper or electronic. A fully electronic registry may be the last capability to be implemented.
- Eight of the Patient Registry capabilities identify the population(s) of patients included in the registry. The other ten Patient Registry capabilities pertain to registry functionality. All capabilities pertaining to functionality that are marked as in place must be in place for each population of patients marked as included in the registry.

2.1

A paper or electronic all-payer registry is being used to manage all established patients in the Practice Unit with: Diabetes

Guidelines:

- Reference definition under 2.0.

2.2

Registry incorporates patient clinical information, for all established patients in the registry, for a substantial majority of health care services received at other sites that are necessary to manage chronic care and preventive services for the population

Guidelines:

- Registry may be paper or electronic
- “All patients in the registry” may consist, for example, of diabetes patients only, if practice unit has only implemented task 2.1.
- The registry is not expected to contain clinical information on all health care services received at any site for 100% of patients in the registry, but is expected to contain a critical mass of information from various sources, including the PO’s or practice unit’s own practice management system, and electronic or other records from facilities with which the PO or practice unit is affiliated
- Other sites and service types are defined as labs, inpatient admissions, ER, UCC, and pharmaceuticals (with dates and diagnoses where applicable).
- The definition of “substantial majority of health care services” is three-quarters of preventive and chronic condition management services rendered to patients.
- If registry is paper, information may be extracted from records and recorded in registry manually, and must be in the form of an accessible data field

2.3

Registry incorporates evidence-based care guidelines

Guidelines:

- Registry functionality may be paper or electronic.
- Guidelines should be drawn from recognized, validated sources at the state or national level (e.g., MQIC Guidelines, USPSTF).
- Determination of which evidence-based care guidelines to use should be based on judgment of practice leaders.

2.4

Registry information is available and in use by the Practice Unit team at the point of care

Guidelines:

- Registry functionality may be paper or electronic.
- Practice unit has and is fully using the capability to generate up-to-date, integrated individual patient reports at the point and time of care to be used during the visit.
- EMR would meet the requirements of this capability provided it has evidence-based guidelines embedded in the tool, and relevant information is identified and imported into screens or reports that facilitate easy access to all relevant data elements particular to the conditions under management, for the purpose of guiding point of care services.

2.5

Registry contains information on the individual attributed practitioner for every patient currently in the registry who has a medical home in the practice unit

Guidelines:

- Registry may be paper or electronic
- The individual practitioner responsible for the care of each patient is identified in the registry
 - o Occasional gaps in information about some patients' individual attributed practitioner due to changes in medical personnel are acceptable

2.6

Registry is being used to generate routine, systematic communication to patients regarding gaps in care

Guidelines:

- Registry may be paper or electronic.
- Communications may be manual, provided there is a systematic process in place and in use for generation of regular and timely communications to patients.
- Communications may be sent to patients via email, fax, regular mail, text messaging, or phone messaging.

2.7

Registry is being used to flag gaps in care for every patient currently in the registry

Guidelines:

- Registry may be paper or electronic.
- Registry must have capability to identify all patients with gaps in care based on evidence-based guidelines incorporated in the registry.
- EMR would meet the requirements of this capability if it can be used to produce population level information on gaps in care for chronic condition patients.

2.8

Registry incorporates information on patient demographics and key clinical parameters for all patients currently in the registry

Guidelines:

- Registry may be paper or electronic.
- Registry must contain all relevant patient demographics, such as name, gender, age.
- Registry must contain all key clinical indicators pertinent to the chronic condition(s) being tracked in the registry, such as current levels for HbA1c, LDL, BP, and microalbumin for diabetics.

2.9

Registry is fully electronic, comprehensive and integrated, with analytic capabilities

Guidelines:

- Practice unit must have capability 2.2 in place in order to receive credit for 2.9
- All entities must flow electronically into the registry
- Data is housed electronically
- Linkages to other sources of information (as defined in 2.2) are electronic for all facilities and other health care providers with whom the practice unit regularly share responsibility for health care.
- Registry has population-level database and capability to electronically produce comprehensive analytic integrated reports that facilitate management of the entire population of the Practice Unit's patients.

2.10

Registry is being used to manage all patients with: Asthma

Guidelines:

- Reference 2.0

2.11

Registry is being used to manage all patients with Coronary Artery Disease (CAD)

Guidelines:

- Reference 2.0

2.12

Registry is being used to manage all patients with: Congestive Heart Failure (CHF)

Guidelines:

- Reference 2.0

2.13

Registry is being used to manage patients with at least 2 other chronic conditions for which there are evidence-based guidelines and the need for ongoing population and patient management, and which are sufficiently prevalent in the practice to warrant inclusion in the registry based on the judgment of the practice leaders

Guidelines:

- Examples of other chronic conditions include (but are not limited to) depression or sickle cell anemia
- Reference 2.0

2.14

Registry incorporates preventive services guidelines and is being used to generate routine, systematic communication to all patients in the practice regarding needed preventive services

Guidelines:

- Reference 2.0
- Registry must include all current patients in the practice, including well patients, regardless of insurance coverage and including Medicare patients
- Preventive services guidelines must be drawn from a recognized state or national source, such as HEDIS measures, CDC, or national guidelines that address standard primary and secondary preventive services (i.e., mammograms, pap smears, colorectal screening, immunizations, well-child visits, well adolescent visits).

2.15

Registry incorporates patients who are assigned by managed care plans and are not established patients in the practice

Guidelines:

- Patients assigned by managed care plans who are not established patients must be included in the registry, and active outreach conducted to engage them as established patients

2.16

Registry is being used to manage all patients with: Chronic Kidney Disease

Guidelines:

- Reference 2.0

2.17

Registry is being used to manage all patients with: Pediatric Obesity

Guidelines:

- Reference 2.0

2.18

Registry is being used to manage all patients with: Pediatric ADHD

Guidelines:

- Reference 2.0

Patient Registry

Overview: The goal of the Patient Registry initiative is to establish a registry that contains comprehensive patient clinical and demographic information that can be used to efficiently and effectively manage a population of patients.

These Blue Cross Blue Shield of Michigan criteria pertain to the patient registry initiative:

Criteria

Met 

- 2.1 A paper or electronic all-payer registry is being used to manage all established patients in the practice unit with diabetes
- 2.2 Registry incorporates patient clinical information, for all established patients in the registry, for a substantial majority of health care services received at other sites that are necessary to manage chronic care and preventive services for the population
- 2.3 Registry incorporates evidence-based care guidelines
- 2.4 Registry information is available and in use by the practice unit team at the point of care
- 2.5 Registry contains information on the individual attributed practitioner for every patient currently in the registry who has a medical home in the practice unit
- 2.6 Registry is being used to generate routine, systematic communication to patients regarding gaps in care
- 2.7 Registry is being used to flag gaps in care for every patient currently in the registry
- 2.8 Registry incorporates information on patient demographics and key clinical parameters for all patients currently in the registry
- 2.9 Registry is fully electronic
- 2.10 Registry is being used to manage all patients with asthma
- 2.11 Registry is being used to manage all patients with coronary artery disease (CAD) *[not applicable to pediatric practices]*
- 2.12 Registry is being used to manage all patients with congestive heart failure (CHF) *[not applicable to pediatric practices]*

- 2.13 Registry is being used to manage patients with any additional chronic condition for which there are evidence-based guidelines and the need for ongoing population and patient management, and which are sufficiently prevalent in the practice to warrant inclusion in the registry based on the judgment of the practice leaders
- 2.14 Registry incorporates preventive services guidelines and is being used to generate routine, systematic communication to all patients in the practice regarding needed preventive services
- 2.15 Registry incorporates patients who are assigned by managed care plans and are not established patients in the practice
- 2.16 Registry is being used to manage all patients with chronic kidney disease
- 2.17 Registry is being used to manage all patients with end stage renal disease

Patient Registry

What's the difference between a disease registry and an electronic medical record?

The line between disease registries and electronic medical records (EMRs) is blurring as electronic registries become more complex.

The basic distinction between the two is that registries supplement rather than replace individual patient medical records. Registries manage only specific information relative to chronic diseases. Registries assist the care team in delivering appropriate and timely care of chronic illnesses by providing a snapshot view of care that has been done and care that still needs to be done for the patient.

EMRs manage more comprehensive information about patient problems, health history and care. EMRs document the physician–patient encounter. EMRs support providers at the point of care.

You may also hear the term, electronic health record (EHR). EHRs are an all encompassing record of the patient, similar to a medical record, that what would be contained in an electronic mode, like a patient portal.

Free public domain software for a registry is available from the Chronic Disease Electronic Management System (CDEMS), www.cdems.com. CDEMS is a Microsoft Access database registry. CDEMS is pre-coded to track diabetes, asthma and adult preventive health but is customizable for other measures. CDEMS offers printed progress notes, patient lists, and summary reports.

Sample of comprehensive clinical information from multiple electronic sources in a Wellcentive patient registry

Lab interface:

WELLCENTIVE®
Quality Improvement. Integrated Solutions.

Today is: July 30, 2009

Home > Alerts Summary > Patient Search > Patient S

Home Manager

Edie Beeny - 60 (07/12/1949)

Diagnoses | Payers | Medical Conditions | Meds | Vital Signs | Care | Immunizations | **Labs** | Care Summary | Care Mgt Tracking | Alerts! | Report Card

Type	Select Lab Group				Next Outreach Date	Last Lab Result		
	Value	Units	Date Performed	Date Ordered		Add To Tracking	Value	Date Performed
Fe	<input type="text"/>	uG/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Fecal Occult Blood (FOBT)	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
HbA1C	<input type="text"/>	%	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
HDL	<input type="text"/>	mg/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Hep B Surface Antibody	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
LDL	<input type="text"/>	mg/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Lead Test	<input type="text"/>	mcg/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Total Cholesterol	<input type="text"/>	mg/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Triglycerides	<input type="text"/>	mg/dL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
TSH	<input type="text"/>	mIU/L	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Urine Micro albumin	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			
Vitamin B12	<input type="text"/>	pg/mL	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>			

Mammogram data from radiology interface:

Mammogram history for Edie Beeny - Windows Internet Explorer

https://app.wellcentive.com/Hurley/showCareHistory.do?typeId=2

Date Performed	Date Due	Date Ordered	Verified	Reason
07-01-2009			<input checked="" type="checkbox"/>	Delete Enabling
04-30-2006			<input checked="" type="checkbox"/>	Delete
09-30-2003			<input checked="" type="checkbox"/>	Delete

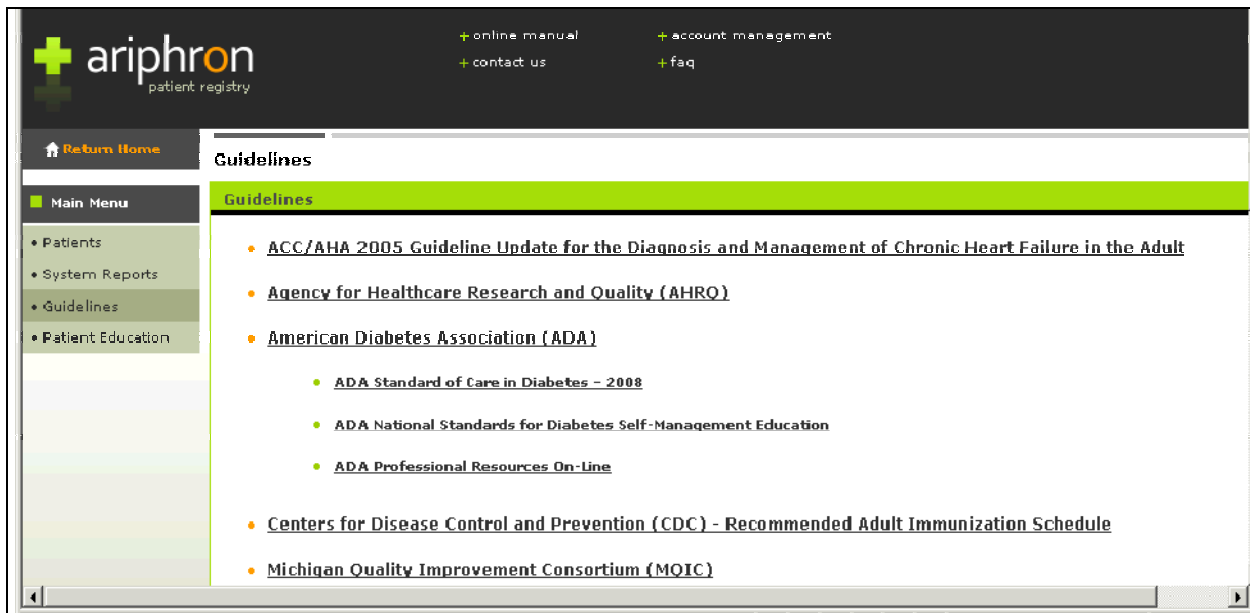
DrFirst data from e-prescribing interface:

Active Medications

Current Medications: Prescription Data

OMEPRAZOLE	Dose:20.00; Strength:null; Units:mg; Medication Class:Other;	Remove
NAPROSYN	Dose:375.00; Strength:null; Units:mg; Medication Class:Other;	Remove
FELODIPINE	Dose:10.00; Strength:null; Units:mg; Medication Class:Dihydropyridine;	Remove
PLAVIX	Dose:75.00; Strength:null; Units:mg; Medication Class:Clopidogrel;	Remove
ATENOLOL	Dose:50.00; Strength:null; Units:mg; Medication Class:Beta-Blocker;	Remove
LIPITOR		Remove
Strength:	<input type="text"/>	Action: <input type="text"/>
Schedule:	<input type="text"/>	Dose Other: <input type="text"/>
Refills:	<input type="text"/>	Total Daily Dose: <input type="text"/>
Medication Class:	Statin	Form: <input type="text"/>
Prescription Date:	<input type="text"/>	End Date: <input type="text"/>
Copy to active medications		
ZETIA	Dose:10.00; Strength:null; Units:mg; Medication Class:Lipid - Other;	Remove
LANTUS	Dose:45.00; Strength:null; Units:U; Medication Class:Insulin;	Remove
ACTOS	Dose:30.00; Strength:null; Units:mg; Medication Class:Glitazones;	Remove
BENTICAR	Dose:20.00; Strength:null; Units:mg; Medication Class:ARB;	Remove

Samples of Michigan Quality Improvement Consortium evidence-based care guidelines in the Ariphton patient registry



The screenshot shows the Ariphton patient registry website. The header includes the Ariphton logo and navigation links: online manual, account management, contact us, and faq. A left sidebar contains a 'Main Menu' with options: Patients, System Reports, Guidelines, and Patient Education. The main content area is titled 'Guidelines' and lists several evidence-based care guidelines:

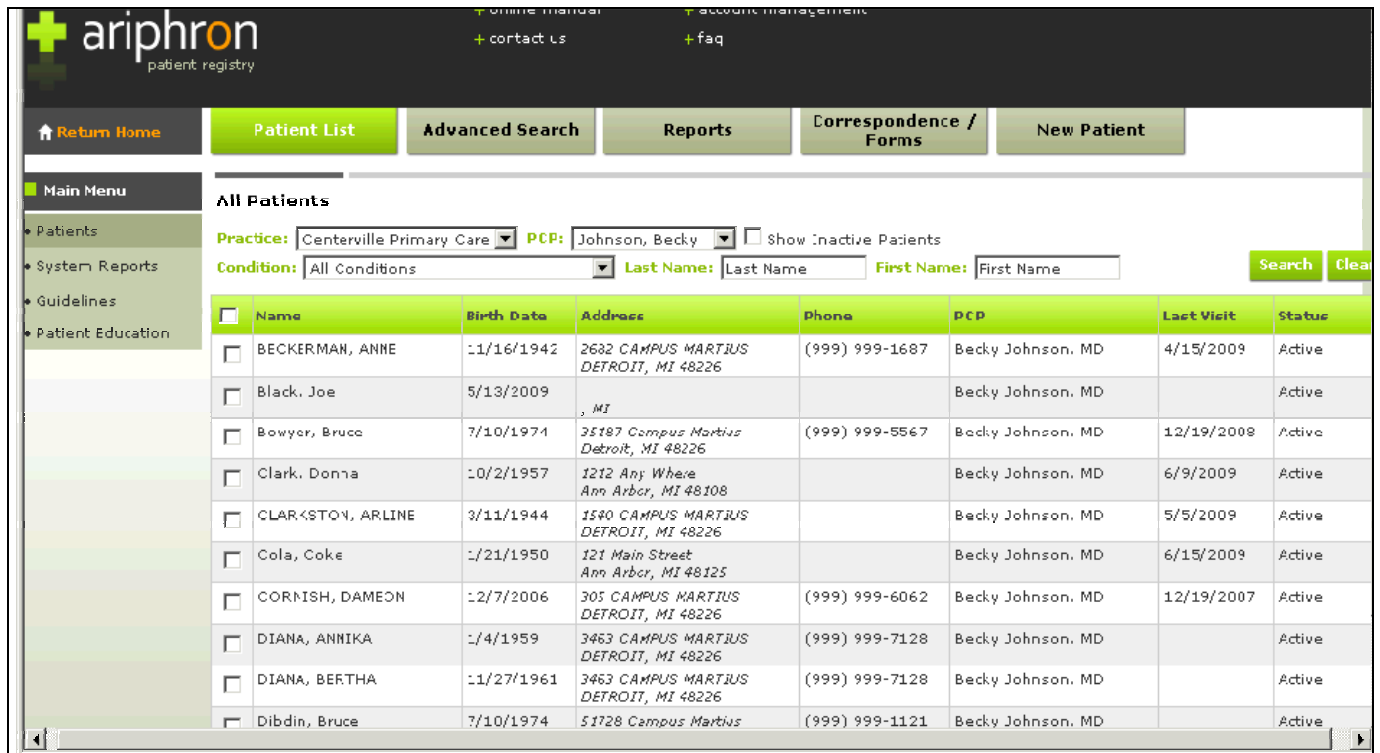
- [ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult](#)
- [Agency for Healthcare Research and Quality \(AHRQ\)](#)
- [American Diabetes Association \(ADA\)](#)
 - [ADA Standard of Care in Diabetes - 2008](#)
 - [ADA National Standards for Diabetes Self-Management Education](#)
 - [ADA Professional Resources On-Line](#)
- [Centers for Disease Control and Prevention \(CDC\) - Recommended Adult Immunization Schedule](#)
- [Michigan Quality Improvement Consortium \(MQIC\)](#)



- [Michigan Quality Improvement Consortium \(MQIC\)](#)
 - [MQIC 2008 Adult Preventive Services \(Ages 18 to 49\)](#)
 - [MQIC 2008 Adult Preventive Services \(Ages 50 - 65+\)](#)
 - [MQIC 2008 Asthma Guideline \(Children 0-4 Years\)](#)
 - [MQIC 2008 Asthma Guideline \(Children 5-11 Years\)](#)
 - [MQIC 2008 Asthma Guideline \(Youth 12 and Older and Adults\)](#)
 - [MQIC 2008 Asthma Guideline \(General Principles\)](#)
 - [MQIC 2006 Chronic Kidney Disease Guideline](#)
 - [MQIC 2008 Depression Guideline](#)
 - [MQIC 2008 Diabetes Guideline](#)
 - [MQIC 2009 Heart Failure Guideline](#)
 - [MQIC 2007 Hypertension Guideline](#)
 - [MQIC 2008 Management and Prevention of Osteoporosis Guideline](#)
 - [MQIC 2007 Obesity Guideline](#)

Other evidence-based care measures include:
 Milliman Care Guidelines, www.careguidelines.com
 National Guideline Clearinghouse, www.guideline.gov

Sample of the Ariphton registry showing a patient panel



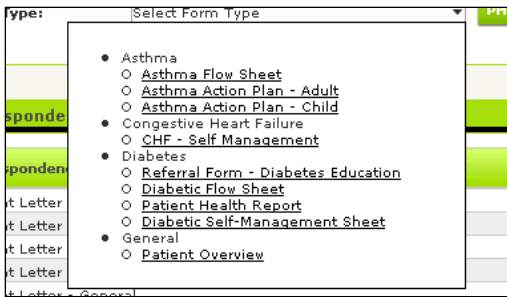
The screenshot shows the Ariphton patient registry interface. At the top, there is a navigation bar with tabs for "Return Home", "Patient List", "Advanced Search", "Reports", "Correspondence / Forms", and "New Patient". Below this is a "Main Menu" sidebar with options for "Patients", "System Reports", "Guidelines", and "Patient Education". The main content area is titled "All Patients" and includes search filters for "Practice" (Centerville Primary Care), "PCP" (Johnson, Becky), and "Show Inactive Patients". There are also input fields for "Condition", "Last Name", and "First Name", along with "Search" and "Clear" buttons.

<input type="checkbox"/>	Name	Birth Date	Address	Phone	PCP	Last Visit	Status
<input type="checkbox"/>	BECKERMAN, ANNE	1/16/1942	2632 CAMPUS MARTIUS DETROIT, MI 48226	(999) 999-1687	Becky Johnson, MD	4/15/2009	Active
<input type="checkbox"/>	Black, Joe	5/13/2009	, MI		Becky Johnson, MD		Active
<input type="checkbox"/>	Bowyer, Bruce	7/10/1974	35187 Campus Martius Detroit, MI 48226	(999) 999-5567	Becky Johnson, MD	12/19/2008	Active
<input type="checkbox"/>	Clark, Donna	10/2/1957	1212 Any Where Ann Arbor, MI 48108		Becky Johnson, MD	6/9/2009	Active
<input type="checkbox"/>	CLARKESTON, ARLINE	3/11/1944	1540 CAMPUS MARTIUS DETROIT, MI 48226		Becky Johnson, MD	5/5/2009	Active
<input type="checkbox"/>	Cola, Coke	1/21/1950	121 Main Street Ann Arbor, MI 48125		Becky Johnson, MD	6/15/2009	Active
<input type="checkbox"/>	CORNISH, DAMEON	12/7/2006	305 CAMPUS MARTIUS DETROIT, MI 48226	(999) 999-6062	Becky Johnson, MD	12/19/2007	Active
<input type="checkbox"/>	DIANA, ANNIKA	1/4/1959	3463 CAMPUS MARTIUS DETROIT, MI 48226	(999) 999-7128	Becky Johnson, MD		Active
<input type="checkbox"/>	DIANA, BERTHA	11/27/1961	3463 CAMPUS MARTIUS DETROIT, MI 48226	(999) 999-7128	Becky Johnson, MD		Active
<input type="checkbox"/>	Dibdin, Bruce	7/10/1974	51728 Campus Martius	(999) 999-1121	Becky Johnson, MD		Active

Sample of registry (Ariphron) with automated communication to patients about gaps in care



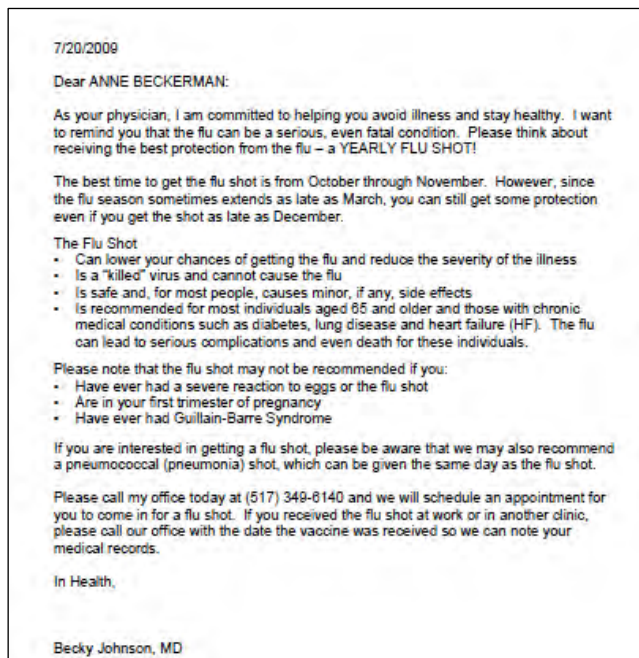
The screenshot shows the Ariphron patient registry interface. At the top, there are navigation links: '+ online manual', '+ account management', '+ contact us', and '+ faq'. The main header includes the Ariphron logo and 'patient registry'. Below this is a navigation bar with 'Return Home' and 'All Patients > Correspondence / Forms'. A 'Main Menu' sidebar lists: Patients, System Reports, Guidelines, and Patient Education. The central area is titled 'Generate New Correspondence' and contains instructions: 'To generate new correspondence, choose a correspondence type and then click view to preview correspondence or click print to show correspondence and save it as sent.' There is a 'Correspondence Type' dropdown menu set to 'Select Correspondence Type' and a 'Form Type' dropdown menu. The 'Form Type' dropdown is open, showing a list of options: Diabetes (with sub-options: Patient Letter - Diabetes, Referral Form - Eye Care Provider), General (with sub-options: Patient Letter - Flu Shot, Patient Letter - General). There are 'Print' and 'Preview' buttons for each form type. Below the dropdowns is a table with columns 'Correspondence Type' and 'Date Sent'. The table contains three rows: 'Patient Letter - Diabetes' with dates 7/16/2009, 5/4/2009, and 4/28/2009. On the right side, there is a 'Selected Patient(s)' box containing the name 'BECKERMAN, ANNE'.



This screenshot shows a 'Select Form Type' dropdown menu. The menu is open, displaying a list of form types. The options are: Asthma (with sub-options: Asthma Flow Sheet, Asthma Action Plan - Adult, Asthma Action Plan - Child), Congestive Heart Failure (with sub-option: CHF - Self Management), Diabetes (with sub-options: Referral Form - Diabetes Education, Diabetic Flow Sheet, Patient Health Report, Diabetic Self-Management Sheet), and General (with sub-option: Patient Overview).

Additional types of patient letters that could be generated

Sample of Ariphron generated letter



7/20/2009

Dear ANNE BECKERMAN:

As your physician, I am committed to helping you avoid illness and stay healthy. I want to remind you that the flu can be a serious, even fatal condition. Please think about receiving the best protection from the flu – a YEARLY FLU SHOT!

The best time to get the flu shot is from October through November. However, since the flu season sometimes extends as late as March, you can still get some protection even if you get the shot as late as December.

The Flu Shot

- Can lower your chances of getting the flu and reduce the severity of the illness
- Is a "killed" virus and cannot cause the flu
- Is safe and, for most people, causes minor, if any, side effects
- Is recommended for most individuals aged 65 and older and those with chronic medical conditions such as diabetes, lung disease and heart failure (HF). The flu can lead to serious complications and even death for these individuals.

Please note that the flu shot may not be recommended if you:

- Have ever had a severe reaction to eggs or the flu shot
- Are in your first trimester of pregnancy
- Have ever had Guillain-Barre Syndrome

If you are interested in getting a flu shot, please be aware that we may also recommend a pneumococcal (pneumonia) shot, which can be given the same day as the flu shot.

Please call my office today at (517) 349-6140 and we will schedule an appointment for you to come in for a flu shot. If you received the flu shot at work or in another clinic, please call our office with the date the vaccine was received so we can note your medical records.

In Health,

Becky Johnson, MD

Sample of Ariphton registry showing chronic disease gaps in care

7/20/2009 3:19:55 PM Page 2 of 2

Centerville Primary Care
Diabetic Panel Report
For Dates of Service 7/21/2008 - 7/20/2009

William Jones, MD

Diabetes													
Patient Name	Phone	DOB	Last Office Visit	HbA1c Completed	HbA1c Result	Lipid Test Completed	LDL Result	Serum Creatinine	Microalbumin Testing	Retinal Eye Exam	Blood Pressure	Systolic	Diastolic
Anderson, Abby	(616) 248-6912	5/5/1955	1/30/2009	5/22/2007	8.0 %	5/30/2008	65 mg/dl		1/30/2009	1/15/2008	1/30/2009	240	190
Carter, Leslie	(269) 633-9844	7/30/1974	9/17/2008	3/14/2008	6.0 %	3/14/2008	100 mg/dl		12/15/2007	1/1/2008	9/17/2008	150	90
Cook, Jason	(789) 456-1328	7/8/1965	12/14/2007	12/21/2007	9.0 %	4/21/2008	120 mg/dl	12/21/2007	5/1/2007	5/1/2007	12/14/2007	120	80
DeVos, Elizabeth	(428) 113-6512	8/1/1956	3/15/2007	3/17/2007	6.0 %	12/31/2006	100 mg/dl				3/15/2007	110	75
French, Kelly	(616) 789-5638	1/21/1967	4/8/2008	9/30/2008	9.5 %	1/22/2008	90 mg/dl		4/22/2008	1/22/2008	4/8/2008	118	78
Johnson, Denise	(213) 452-3316	3/26/1948	2/15/2008	4/15/2007	6.5 %	5/25/2007	120 mg/dl			8/24/2007	4/13/2007	120	78
Johnson, James	(213) 452-3316	2/12/1945	4/1/2008	3/31/2008	7.0 %	12/19/2007	120 mg/dl	7/21/2007	12/19/2007	7/21/2007	4/1/2008	140	80
Sawyer, Kate	(616) 456-1234	9/1/1971	1/26/2008	2/1/2008	7.0 %	2/1/2008	90 mg/dl			3/22/2007	1/28/2008	110	78
Test, Janet	(212) 989-4545	8/7/1975	9/28/2008	9/28/2008	7.5 %	9/28/2008	120 mg/dl				9/28/2008	145	92
Walker, Sarah	(313) 530-2345	3/7/1976	12/14/2008	12/14/2008	2.0 %	12/14/2008	12 mg/dl				12/14/2008	130	84

Bolded/blank fields indicate that the patient is either due for a service or has exceeded the accepted therapeutic value of one of the following: Office visit > 12 months; HbA1c > 6 months; HbA1c value at or > 7%; LDL > 12 months; LDL value at or > 100 mg/dl; Serum Creatinine > 12 months; Microalbumin > 12 months; Retinal Eye Exam > 12 months; Blood Pressure > 12 months; Systolic B/P at or > 130; Diastolic B/P at or > 80.
* Indicates patient is inactive in the registry.

In this diabetic panel report, data is bolded that exceeds therapeutic values as listed at the bottom of the screen. Bold dates indicate the patient is due for a service.

Sample of physiological parameters and flags for patients not managed to goal (Ariphron registry)

Diabetes

7/20/2009 3:09:32 PM Page 1 of 7

Centerville Primary Care
Diabetic Panel Report
For Dates of Service 7/21/2008 - 7/20/2009

Becky Johnson, MD

Diabetes													
Patient Name	Phone	DOB	Last Office Visit	HbA1c Completed	HbA1c Result	Lipid Test Completed	LDL Result	Serum Creatinine	Microalbumin Testing	Retinal Eye Exam	Blood Pressure	Systolic	Diastolic
BECKERMAN, ANNE	(999) 999-1887	11/16/1942	4/15/2009	3/11/2009	9.2 %	3/11/2009	132 mg/dl	1/2/2009			4/15/2009	140	89
Bowyer, Bruce	(999) 999-5567	7/10/1974	12/19/2008								12/19/2008		
Clark, Donna		10/2/1957	6/9/2009	6/17/2009	7.1 %	6/17/2009	75 mg/dl	12/8/2008			6/9/2009	189	90
CLARKSTON, ARLINE		3/11/1944	5/5/2009	5/19/2009	8.1 %	2/10/2009	127 mg/dl	2/10/2009	2/10/2009	1/19/2008	5/5/2009	120	90
CORNISH, DAMEON	(999) 999-6062	12/7/2006	12/19/2007	12/2/2008	110.0 %	12/2/2008	98 mg/dl		12/4/2008	12/2/2008	12/19/2007		
DIANA, ANNIKA	(999) 999-7128	1/4/1959		12/19/2008	9.0 %	10/19/2008	116 mg/dl	12/19/2008	4/13/2008	3/7/2008			
Dibdin, Bruce	(999) 999-1121	7/10/1974		12/19/2008	6.5 %	12/19/2008	99 mg/dl						
Smith, Susie	(734) 444-4444	3/10/2009	5/5/2009			5/5/2009	121 mg/dl			5/5/2009	5/5/2009	120	76
Test, Test		5/1/1989											

Asthma

7/20/2009 3:13:30 PM Page 1 of 2

Centerville Primary Care
Asthma Panel Report
For Dates of Service 7/21/2008 - 7/20/2009

Becky Johnson, MD

Asthma													
Patient Name	Phone	DOB	Last Office Visit	Spirometry - FEV1 Testing	Spirometry - FEV1 Results	Severity Assessment	Severity Results	Asthma Action Plan	Tobacco Exposure	Blood Pressure	Systolic	Diastolic	
Black, Joe		5/13/2009											
Bowyer, Bruce	(999) 999-5567	7/10/1974	12/19/2008						Not Done				
Clark, Donna		10/2/1957	6/9/2009			6/9/2009	Mild Persistent	6/9/2009	Former	5/9/2009	189	90	
CLARKSTON, ARLINE		3/11/1944	5/5/2009	12/19/2008	3	12/19/2008	Intermittent	12/19/2008	Yes	5/5/2009	120	90	
CORNISH, DAMEON	(999) 999-6062	12/7/2006	12/19/2007	12/7/2008	7				Yes				
DIANA, ANNIKA	(999) 999-7128	1/4/1959		11/15/2008	7								
DIANA, BERTHA	(999) 999-7128	11/27/1961											
KENT, CLARK	(555) 555-5555	5/9/1955	3/24/2009			3/24/2009	Intermittent	3/24/2009	Not Done		125		

CHF panel

7/20/2009 3:17:25 PM Page 2 of 7

Centerville Primary Care
CHF Panel Report
For Dates of Service 7/21/2008 - 7/20/2009

William Jones, MD

Congestive Heart Failure (CHF)															
Patient Name	Phone	DOB	Last Office Visit	Total Cholesterol Completed	Total Cholesterol Result	LDL Completed	LDL Result	HDL Completed	HDL Result	Trig Completed	Trig Result	BMI	Blood Pressure	Systolic	Diastolic
Anderson, Abby	(615) 245-6912	5/5/1955	1/30/2009			5/30/2008	65.1	5/30/2008	98	5/30/2008	65	31.92	1/30/2009	240	190

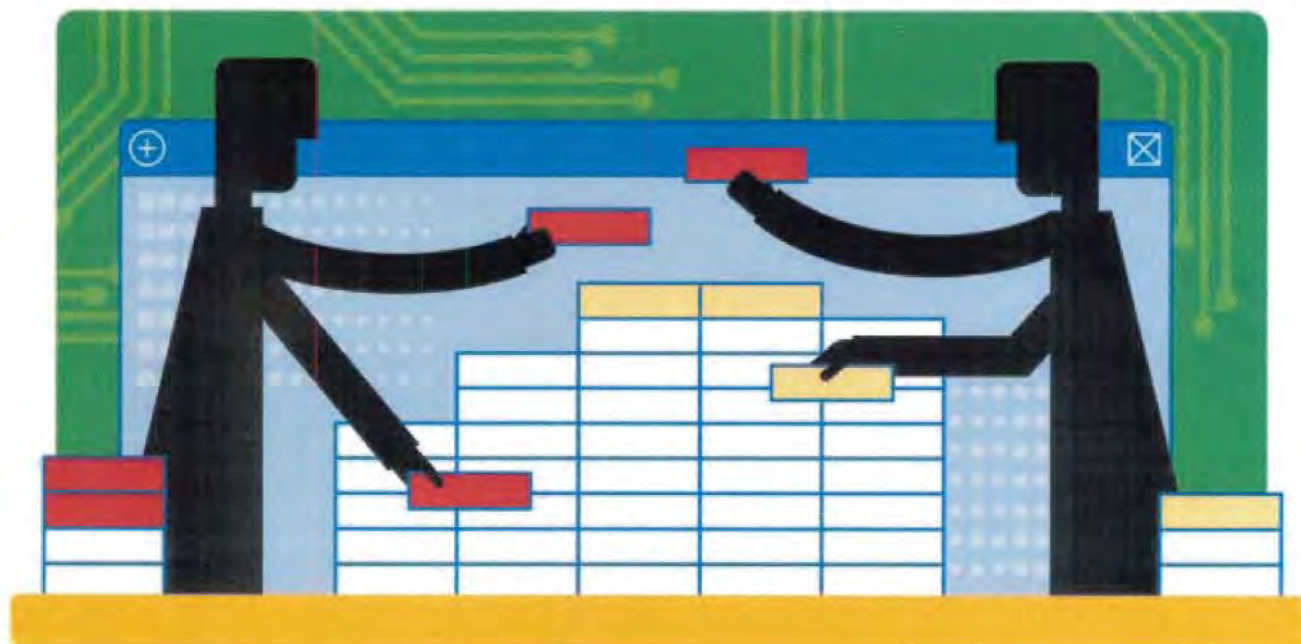
Bolded dates and data show patients that are due for a service or results that exceed therapeutic values

Using a Simple Patient Registry to Improve Your Chronic Disease Care

David D. Ortiz, MD

**Who needs an EHR?
Software you already have
can help you make sure your
patients get the care they need.**

Better patient outcomes. Improved chart legibility. Increased revenue from better coding. Easier disease management. These are just some of the reasons why family physicians have been advised to purchase an electronic health record (EHR) system. Unfortunately, EHRs can cost tens of thousands of dollars per doctor, which many practices simply cannot afford. However, there are ways to improve your clinical practice without purchasing an EHR. Since most practices, even small ones, already have computers that staff members use for word processing, billing and common office applications, it makes economic sense to use these tools for more than just business operations and mailings. Using readily available computer tools, you *can* improve your care. ➤



Many physicians without EHRs take a passive approach: They wait for patients who are chronically ill to show up at their practice with an acute problem.

Population health and disease management

Practices don't necessarily need an EHR to improve their management of patients with chronic diseases.

Using basic computer software, a practice can create a chronic disease registry.

A registry lists the names of the practice's patients who have a given chronic illness and tracks when those patients are due for services and whether their measures are within an acceptable range.

One of the great improvements in practice that an EHR enables is the ability to manage chronic illness in a proactive, organized fashion. Many physicians without EHRs take a passive approach: They wait for patients who are chronically ill to show up at their practice with an acute problem, and then they address any chronic disease issues at that time or reschedule the patient for another visit dedicated to the chronic illness. This approach has several disadvantages when you think of your patient population as a whole. It neglects patients who rarely visit the practice and delays chronic disease management until the patient arrives at your doorstep.

But what if you could keep track of all your patients with diabetes, including their required labs and preventive services, and use that information to manage your patient population proactively? Most commercial EHRs can do this, but it can also be done by using a commercially available spreadsheet program, such as Microsoft Excel, or a database program, such as Microsoft Access. For example, using a spreadsheet program, you

can easily create a list (or registry) of your practice's patients with a given chronic disease and then use that list to track key measures and remind you and your staff automatically when patients need certain labs and preventive services. Such lists can be accessed and managed by anyone on your staff (including nurses, medical assistants and administrative staff) with minimal training.

For a ready-made diabetes registry, you can download the Excel file that is available from the online version of this article at <http://www.aafp.org/fpm/20060400/47usin.html>. A sample view is shown on page 51. This registry, a version of the one we use in my practice, tracks a number of interventions and clinical parameters important in diabetes management and alerts you if there are problems. For instance, if the date of a patient's last A1C was more than 90 days ago, that date cell turns yellow as a warning; if more than 180 days ago, it turns red. Additionally, if a patient's A1C is outside of the normal range, the corresponding data cell will also change colors. These visual cues allow staff members to scan the worksheet and quickly identify which patients are due for which service. To begin using the registry, just delete the sample patient data shown and start collecting the equivalent information on your patients with diabetes.

If you want to create your own registry from scratch, you need only a basic familiarity with Excel. Create a new file and start entering the names of patients who have the chronic illness you're focusing on. You can identify this population by screening patients as they arrive for visits, by reviewing billing records and by doing chart audits, and you can add names as you go along. Next, decide what interventions you want to track. Then create columns for the interventions and enter the dates when the patients last received each service.

continued on page 51 ►

About the Author

Dr. Ortiz is a family physician and flight surgeon at the 59th Medical Squadron at Brooks City-Base, Texas. He is also a clinical assistant professor with the Department of Family and Community Medicine at the University of Texas Health Science Center in San Antonio. The author would like to thank Brian Costello, MPAS, PA-C, for his assistance in developing this article. The opinions and assertions in this article are the author's private views and are not to be construed as the official position of the U.S. Air Force Medical Service or the Department of Defense. Author disclosure: nothing to disclose.

You can design the spreadsheet to alert you (by changing the color of a cell in the worksheet) when the service is overdue or when a given marker is above a certain threshold (e.g., A1C above 7.0). This feature is called “conditional formatting” in Excel and is fairly easy to set up, with some practice. To see how it works, click on any of the colored cells in the sample spreadsheet available online. Click the *Format* menu and then select *Conditional formatting*. You will then be able to view the formulas in the cell you have selected. Using the formulas from the sample worksheet or variations on them, you should be able to apply conditional formatting to selected cells in your new file.

Once you’ve created the worksheet, save it somewhere on a computer or on the practice network where any staff member who needs to can access it. This will make it easy for staff members to review the information – weekly or monthly, depending on your practice’s volume of patients with a given chronic illness – and then notify patients when a given service is due. The worksheet can be updated periodically as laboratory results or consultant reports come in, as new patients with the given diagnosis join the practice or as practice standards change.

This tool can also be used for preventive services (e.g., Pap smears, mammograms or colon cancer screenings) for the general patient population. As patients join your practice, staff members can enter their demographic infor-

mation into similar worksheets that will highlight when a preventive service is due.

The most difficult part of creating these worksheets is the initial data entry. This can be done over several months by assigning the job to a specific staff member or by hiring a part-time data-entry clerk to perform the job. Once you have created the initial worksheet, you can assign the maintenance aspects to any staff member, who will need to be trained only on how to update the worksheet and how to contact patients when services are due.

Putting it into practice

Four years ago, our clinic’s parent health care organization dictated that all of its satellite clinics would be required to implement clinical practice guidelines for chronic diseases and show measurable improvements in patient care. After convening a few brainstorming sessions in which all members of our clinic (physicians, nurses, medical assistants and administrative personnel) participated, we elected to implement a chronic disease tracking system like the one mentioned above. We already had a computer server that all members of the clinic could access, so a computerized tracking system made sense for our practice. We used Microsoft Excel and created a list of our practice’s patients with type-2 diabetes mellitus, since we had a large number of patients with diabetes in our practice. We chose to monitor six diabetes target values:

Readily available computer programs such as Excel or Access are sufficient for creating a chronic disease registry.

Cells within a registry can be programmed to change colors to highlight patients who are overdue for a visit or whose test results are problematic.

A working copy of the author’s registry can be downloaded from the online version of this article.

A SAMPLE DIABETES TRACKING WORKSHEET

The diabetes tracking worksheet used by the author’s practice is shown below. It can be downloaded from the online version of this article at <http://www.aafp.org/fpm/20060400/47usin.html>.

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	Diabetes Tracking Worksheet																																																																																															
2	NOTE: DO NOT COPY AND PASTE DATA FROM CELL TO CELL AS THIS MAY UNDO IMPORTANT FORMATTING.																																																																																															
3	KEY: A1c = hemoglobin A1c; DPE = dilated fundoscopic exam; BMP = basic metabolic panel; BP = blood pressure																																																																																															
4	Patient name	Sex	Date of birth	IG-number	Provider	A1c	Date of test	Date of test	Date of test	Date of test	LDL	Date of test	Systolic BP	Diastolic BP	Date of test	Comments/Notes																																																																																
5	Adams, Jane	F	03/14/86	511-11-1111	Ort	6.8	1-Mar-06	6-Jun-06	1-Mar-06	1-Mar-06	70	22-Nov-05	120	80	22-Nov-05	HTN, 19ccRf																																																																																
6	Baker, John	M	10/05/70	232-21-2322	Ort	5.7	24-Feb-06	12-Jul-05	24-Feb-06	24-Feb-06	90	24-Feb-06	130	75	12-Dec-05																																																																																	
7	Brown, Jane	F	03/23/83	335-33-3333	Ort	6.3	23-Jan-06	24-Jun-05	23-Jan-06	23-Jan-06	105	23-Jan-06	105	75	23-Jan-06	HTN, Retinopathy, EGD																																																																																
8	Carst, John	M	07/05/72	444-44-4444	Ort	6.8	16-Feb-06	20-Mar-06	16-Feb-06	12-Nov-05	99	12-Nov-05	120	80	12-Nov-05																																																																																	
9	Dee, Jane	F	06/05/80	555-55-5555	Ort	6.8	04-Feb-06	21-Jul-05	04-Feb-06	24-Oct-05	100	24-Oct-05	120	80	24-Oct-05																																																																																	
10	Douglas, John	M	07/01/46	666-66-6666	Ort	6.8	04-Feb-06	21-Jul-05	04-Feb-06	09-Jan-06	80	09-Jan-06	130	80	09-Jan-06	HTN																																																																																
11	James, Jane	F	06/01/82	777-77-7777	Ort	6.2	19-Dec-06	10-May-06	19-Dec-06	19-Dec-06	90	19-Dec-06	120	77	19-Dec-06																																																																																	
12	Lynn, John	M	01/01/84	888-88-8888	Ort	6.4	31-Jan-06	31-Jan-06	31-Jan-06	31-Jan-06	87	31-Jan-06	115	80	31-Jan-06																																																																																	
13	Smith, Jane	F	07/01/58	999-99-9999	Ort	6	17-Dec-05	17-Dec-05	17-Dec-05	17-Dec-05	103	17-Dec-05	130	80	17-Dec-05																																																																																	
14	White, John	M	02/28/83	300-00-0000	Ort	6.8	20-Dec-06	18-May-06	20-Dec-06	20-Dec-06	70	20-Dec-06	120	75	20-Dec-06																																																																																	

Even those who can't afford to buy an EHR will need to find ways to improve the quality of care they provide.

blood pressure, lipids, foot exam, eye exam, immunizations and A1C.

The hardest part of the process was identifying all patients in our practice who had type-2 diabetes. All members of the clinic staff helped identify those patients using billing records, chart audits and daily patient screening. By spreading out the work among nurses, administrative staff, physicians and medical assistants, we created a team effort and a sense of ownership over the process. We also spread out the work over several weeks, with each staff member auditing 10 to 15 charts per day to look for patients who have diabetes, so as to not overwhelm the staff and to continue daily operations. As we identified patients with diabetes, we would enter them into our database and record the last charted measurements of each of the target values we wanted to improve (last eye exam, last A1C, etc.). As we identified these values, the staff would contact patients who were overdue for any exams or services to get those accomplished. We programmed our worksheet to change the color of cells to indicate values or services that need to be addressed for each patient.

After a few months, we had our first tracking worksheet completed. We then assigned the monitoring of the system to a team member who would be responsible for checking the worksheet monthly and contacting patients to remind them of any needed services. As we received laboratory results or consult reports, staff members would make the appropriate entry into the worksheet. By using this system, we were able to increase our compliance with recommended services. Our patients also appreciated the reminders and the attention from our staff, which increased our patient satisfaction numbers as well.

Over the course of a year, we chose several other chronic diseases (hypertension, hyperlipidemia and asthma) and created similar tracking systems for each of them as well. After

getting our chronic disease tracking systems going, we created worksheets for all of the patients enrolled in our practice, not only those with chronic diseases. We chose several preventive services (mammograms and Pap smears to start) and began using the same tracking techniques to improve our compliance with those services as well. While we had several problems that were outside our control (e.g., mammography services are not readily available in our practice setting, so it was difficult to order mammograms and get timely results), our overall preventive service compliance rate increased over time. Working with this system eventually helped our practice achieve the highest preventive services compliance rates of all outpatient clinics in our organization as measured by our parent health care organization.

Bottom line

Clearly, an EHR can provide the same advantages and more with less effort than the approach described above. However, physicians in small practices may not be able to afford EHRs. As physicians face increasing demands to improve care and document their performance as part of pay-for-performance initiatives, even those who can't afford to buy an EHR will need to find ways to improve the quality of care they provide. This article demonstrates how family physicians can do just that, using some common computer tools without making a huge investment in an EHR.

As with all changes, it's best to start small and pick one area or disease that you want to improve. Involve your whole staff and come up with a plan that everyone agrees to, then implement the changes and make modifications as you go along. You'll find that the effort will pay off in the end with healthier patients and happier staff. **FPM**

Send comments to fpmedit@aafp.org.

To identify patients for its diabetes registry, the author's practice used billing records, chart audits and daily patient screening.

Spreading out the work among staff fostered teamwork and a sense of ownership.

Practices could create registries not only to manage chronic diseases but also to track preventive services.

Using Computerized Registries in Chronic Disease Care

Prepared for:

CALIFORNIA HEALTHCARE FOUNDATION

Prepared by:

First Consulting Group

Author:

Jane Metzger

III. Using Disease Registries

“The process of organized care is humbling. It is relatively easy to collect the registry data, much more difficult to act on it.”

Dr. Charles M. Kilo
Greenfield Health
Portland, OR

“If a productive patient-clinician interaction is at the heart of a good visit, then information is the life blood flowing through that interaction.”

Michael Hindmarsh
Improving Chronic Illness Care
Group Health of Puget Sound

TO BE EFFECTIVE, A DISEASE REGISTRY MUST BE an active tool used routinely by those within the practice (and possibly within the larger organization) who care for patients with chronic disease. The discussion below reviews how disease registries have typically been incorporated into three processes: treating patients, providing outreach to patients between visits, and assessing the effectiveness of a practice’s efforts to deliver quality care.

Point of Care

When the patient is meeting with the physician, disease registries provide easy access to complete, relevant patient information through a printed patient report, sometimes known as a visit planner or patient profile. The report presents a snapshot of the patient’s condition, both reminding the care team that the patient has one or more chronic conditions and saving them the time of searching for condition-specific information in the patient’s medical record.^{11, 12}

Many registries in use today provide further support by integrating clinical guideline-based prompts into the patient report or profile, such as:

- Guideline-based intervals for assessment, testing, and referrals (e.g., HbA1c every six months);
- Interventions that are overdue according to clinical guidelines; or
- Text from the guideline about recommended intervals for care or treatment.

More advanced, rules-based prompting incorporates patient-specific information and is able to generate customized care recommendations, such as:

- “Consider an ACE inhibitor or ARB with evidence of renal disease,” where the diabetes patient has a co-morbid condition; or
- “Recommend next HbA1c testing at 90 days because patient is not at goal for glucose control,” where a patient’s health is falling short of the desired outcome.

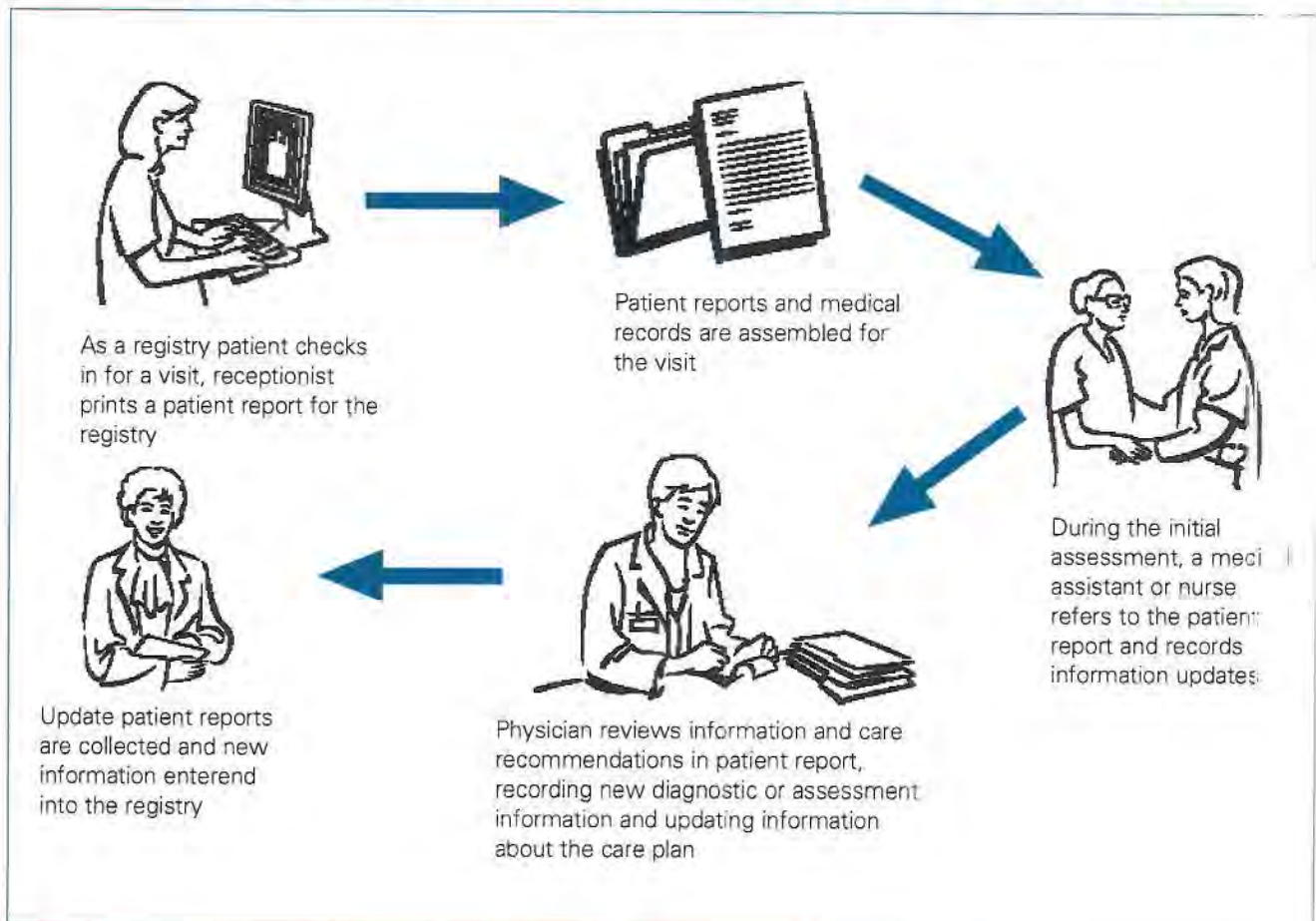
The patient report also records updates to patient information tracked in the registry for subsequent data entry. Some registry applications rely almost exclusively on information available from other electronic systems to minimize the time devoted to these tasks.

Figure 2 describes the use of a registry in a setting that is not fully automated. From a sticker on the patient's chart, the receptionist notes that the patient is on a registry, requests a printed patient report or flow sheet, and attaches it to the patient's chart. Registry patients might also be identified in the scheduling application used at the front desk, and, in some practices, the patient record is printed and filed in the medical record at the *conclusion* of each visit (to be referenced the next time) rather than printing a new one when the patient checks in.

The care team coordinates tasks to deliver services and update the patient report as required. Medical assistants and nurses use the registry report as they interview the patient, and record vital signs, and order necessary services according to protocols for standing orders. Physicians can use the report for several purposes, including to:

- Communicate with care team members about new services to arrange before the patient leaves;
- Indicate to the receptionist when the next follow-up visit should be scheduled;
- Serve as the encounter note to be filed in the patient's medical record; and
- Record updates to patient information for entry into the registry.

Figure 2. Typical Workflow for Use of a Stand-alone Disease Registry at the Point-of-Care



Usually patient reports are collected for batch entry by a designated individual in the practice or at a central location, although sometimes a member of the care team performs this task.

Examples at the Point of Care

Figure 3 (see page 37) shows a visit planner from a locally developed (“homegrown”) registry and used at Quello Clinic, an independent family practice medical group in six clinics (including urgent care) around Minneapolis-St. Paul, Minnesota. The visit planner integrates data for four diseases tracked by the registry—coronary artery disease, hypertension, congestive heart failure, and diabetes. Each patient’s chronic diseases are indicated, and the bottom of the form only applies to patients with diabetes. Laboratory test results and dates are fed electronically into the registry. All other information is entered manually.

Figure 4 (see page 38) shows an example of the paper visit planner used at Center Jersey Physician Network, an independent practice association (IPA) with 40 primary care physicians in 10 different sites. The source is PatientPlanner™ (from DocSite, a commercial vendor), which is used to manage asthma and diabetes.

The medical director has set up the registry to track the specific interventions and intervals established by physician committees in the IPA. The example shown for diabetes provides a graphic display of the two major clinical indicators—blood glucose control and cholesterol level. Several areas of the form are designed for recording updates to key information, including entries that can be recorded in “today’s action” or “today’s answer.” Due dates for interventions are calculated based on the service date recorded in the registry, or physicians can designate a patient-specific interval for particular interventions.

The visit planner shown in Figure 5 (see page 39) was locally developed by Physicians Medical

Group, a 200-physician IPA in Santa Cruz, California. Electronic feeds from a practice management system, local laboratories, and health plan pharmacy claims are combined with manually entered information. The inclusion of information from pharmacy claims lets a physician determine whether or not prescriptions were actually filled. Customized patient recommendations are also incorporated, indicating, for example, the need for a retinal examination.

For the most part, care teams use paper copies of the patient profile, although they also have online access to the registry application. From the online view, providers can access clinical algorithms for recommendations generated by the software application and are able to send a copy of the visit planner to any referral physician involved in the patient’s care.

A screen display from a registry integrated into an EMR is shown in Figure 6 (see page 40). At PeaceHealth, physicians and care managers use an EMR for prescription writing, documentation, and the management of lab results. The EMR now includes a diabetes registry jointly developed by PeaceHealth and IDX. Paper medical records are rarely used, and most care teams use this online version during diabetes wellness visits, although a printed version is also available. Care teams view a flow sheet display, including a time series view of the data tracked for diabetes care.

Much of the information needed for the registry—demographics, problem list, laboratory results, and prescription orders—is available from orders and documentation entered routinely into the EMR. Nurses and medical assistants, as well as physicians, enter additional information required in the diabetes registry, such as documentation of a foot exam or patient use of aspirin. For each data element, an extension screen structures the entry appropriately, as shown in (a) for a “yes/no” entry and in (b) for a year.

Outreach to Patients

Tracking patients *between* visits to identify those who could benefit from follow-up care is almost impossible without a registry (or EMR incorporating a registry).

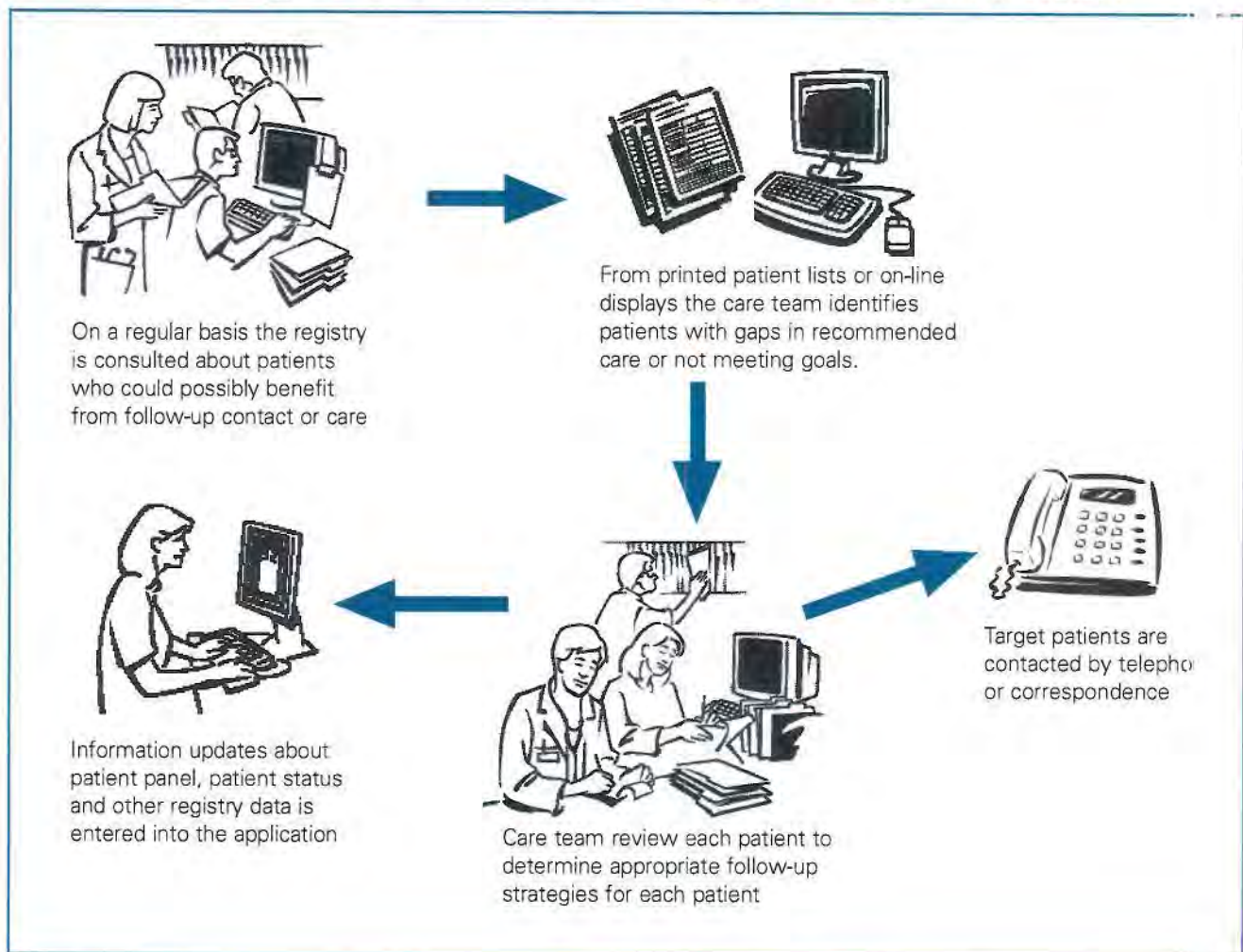
“The availability of a list of all patients and a few other key data elements presents opportunities to remind patients and physicians of needed follow-up or preventive services.”

Wagner et al.¹³

The typical workflow in Figure 7 begins with a care team member reviewing a printed patient list or sitting at a computer terminal to view patient information online.

Patient lists or displays can be requested for patients with different types of care deficiencies. The richer the registry’s data set, the greater the possibilities for examining subgroups of patients. Most registries include standard reports and permit users to create patient lists for specific durations and interventions or status indicators.

Figure 7. Typical Workflow for Use of a Disease Registry to Identify Patients for Outreach



Examples of Types of Registry Exception or Outreach Reports for Groups of Diabetes Patients

Last visit more than xx days ago
Last HbA1c value over xx.x
No HbA1c value last xx days
No self-management goal last xx days
No retinal exam last xx months
No pneumovax in last xx years
Gap in medication refills > xx days

Care teams can use patient lists and other information such as future appointments already booked in the scheduling system to develop an outreach strategy for each patient. The next step is to contact targeted patients by telephone or correspondence. Some registries incorporate patient contact information in outreach or exception lists, others can produce telephone calls lists or mailing labels.

During the outreach process, care teams often become aware of problems with registry information—such as finding that the patient has moved or has a different primary provider, or discovering that the latest test information is missing in the registry. Care team members either enter updated information directly or communicate the changes to a designated person (or registry manager) via paper, telephone, or fax.

Effective implementation requires carving out sufficient time to review patient lists on a regular basis. Because the outreach process is new, the transition to integrate it into the practice routine often is more difficult than the changes in procedures around patient encounters.

Patient lists for outreach purposes are designed to allow care teams to examine different subgroups of patients with possible gaps in care. Registry applications support this function in several different ways.

“We have tried many approaches to institutionalizing outreach as a monthly activity:

- *First we sent exception lists directly to physicians with limited success.*
- *Next we sent them to clinic managers. Several were motivated to take action, but overall this wasn't successful either.*
- *We then managed to designate someone in each practice as a disease management specialist, with 2 hours allocated for each physician. The individual sat down with physicians to discuss patient lists and assisted in contacting patients. This worked reasonably well, but was hard to sustain due to severe cost pressure recently.*
- *Now we offer the assistance of a central resource person to help practices with any aspect of outreach. This is not quite as effective as the specialist role.*

Eventually we have to work toward each care team totally owning this process. That is logically where the responsibility lies and how to get the best results.”

Randi Burnham, N.P., team leader,
Clinical Services, Bellin Medical Group
Green Bay, WI

Examples: Outreach

The outreach reports from a locally developed registry at Cambridge Health Alliance (CHA), a regional public health system in Massachusetts, can be viewed online by authorized users. Figure 8 (see page 41) shows one of several possible displays focused on patients with asthma.

Following the summary of registry patients on long-time control medications are lists of the actual patients. By clicking on any one of these displayed names, users can access a patient summary to help them as they consider possible outreach strategies. The CHA disease registry is populated with data from the hospital information system and permits users to access appointment information from any patient record in the registry application. This feature makes it much easier to focus outreach efforts appropriately by determining which patients already have upcoming appointments.

Other reports available from the asthma registry show patients who were hospitalized or had a visit to the emergency room in the past year, including the reason for the hospitalization or emergency care. Another view shows the panel of patients by severity or without a recorded asthma action plan.

A different style of outreach report shown in Figure 9 (see page 42) is from the registry used by 13 primary care practices at Thedacare in northeastern Wisconsin. One designated person in each practice prints and distributes patient lists to care teams on a monthly basis. The registry tracks NCQA-recommended services and interventions for chronic disease and preventive care. Some of the tracked data are obtained electronically from claims processed by Touchpoint, a health plan partially owned by Thedacare. For patients with other insurance, care teams or disease management specialists in each practice enter missing information directly into the registry. In Figure 9, the source of data is noted, i.e.,

from claims or manual entry. The column “new patient” is for verifying that a new registry patient identified from claims information is indeed a panel patient and has diabetes. Above each data column in the report, prompts such as “2 per year” remind the care team of recommended intervals for interventions and services.

Population Reporting

A disease registry can also produce population reports with different views of aggregate information about the process and outcomes of care management. Registry applications typically feature a number of pre-configured reports that users can request for specific patient population(s) and date ranges.

Two primary uses of population reports are shown in Figure 10: feedback to physicians about the status of their own patients and reports to the entire provider organization about the patient populations under its care.

Both reports provide a check on the actual progress made towards delivering recommended care. Physician feedback reports often include peer comparison data. Population reports often compare results for different practices and clinics, as well as show annual trends as a gauge of progress in the overall program.

“Distributing feedback reports did make a difference, especially with physicians who are low performers.”

Sherry Catlin, M.D., medical director
Florence Clinic, PeaceHealth

Often medical directors ensure that population management results are a regular agenda item for medical staff and practice/clinic meetings. Some larger organizations include results as one component of a regular performance report, which tracks a set of quality indicators (sometimes called a scorecard or dashboard).