

**Statement of Dr. Peter Basch before the Senate Commerce Committee**  
**Subcommittee on Technology, Innovation, and Competitiveness**

**June 30, 2005**

Mr. Chairman and the members of the Subcommittee:

I am pleased to appear before the subcommittee to discuss the promise of electronic health records (“EHR”), and the barriers to their optimal use in outpatient medical practice. I have been a practicing primary care physician for twenty-five years, and have used an EHR in my practice for the past eight years. In addition to practicing medicine within a small practice located here on Capitol Hill, I also serve as the Medical Director for eHealth at MedStar Health, with the responsibility of determining and directing strategies for physicians regarding e-health applications in ambulatory care, which are oriented towards improving patient care and quality, and improving practice efficiency and efficacy. MedStar Health is a not for profit community healthcare system that includes seven hospitals in the Baltimore-Washington corridor, including Georgetown University Hospital and the Washington Hospital Center. In addition, I represent the American College of Physicians within the Physicians’ EHR Coalition (PEHRC); a coalition of twenty-one medical professional and specialty societies, dedicated to furthering the adoption and optimal use of electronic health records, and serve as the PEHRC’s Co-Chair. Furthermore, I am the Co-Chair of the eHealth Initiative’s Working Group for HIT in Small Practices. While my testimony is consistent with stated positions

regarding EHR adoption and use of these organizations, I am here today testifying solely on my own behalf.

By all accounts, I am an early adopter of electronic health records; having employed them in my practice since the mid 90's. Since that time, the capabilities of EHR have advanced dramatically, as has our understanding of their value in medical practice. The initial impetus for my adoption of an EHR was a response to the pressures of managed care, which required primary care doctors like me to see more patients in less time as well as produce and manage increasing amounts of paperwork. At that time, I saw the potential of EHR quite narrowly—as an electronic filing cabinet—an administrative tool that would help relieve me of some of the paperwork burden and also allow for added productivity; something to *automate* care.

Today, after years of using an electronic health record in my own practice, and years of working more broadly in the health information technology field, I believe the analogy of an EHR as electronic filing cabinet is not only inapt, but wrongheaded as well.

Advanced EHRs are not and should not simply be about digitizing the information associated with existing care processes. In my view, that would do little more than digitize dysfunction. The real power of an EHR optimally integrated into practice is far greater. Properly implemented, an EHR can be a tool for better informing multiple care processes, and even lead to healthcare transformation, leading to further enhancements in quality, safety and efficiency, and efficacy.

Having said that, it is important to put EHRs in perspective. They are a powerful healthcare technology, not a cure-all for the many challenges facing medicine today. Unless the adoption of an EHR is coupled to both significant process change (practice redesign) and payment reform that creates a sustainable business case for quality and care management, EHRs will not meet their promise.

Properly implemented, EHRs can be the cornerstone of a redesigned twenty-first century healthcare system that harnesses information to empower patients and care providers and improve quality. The integration of EHRs into practice exponentially raises the value of information in the clinical process, enabling a fundamental transformation for doctor and patient. For physicians, EHRs bring advanced and actionable knowledge to the point-of-care, putting excellence in healthcare delivery within the reach of all doctors. For patients, EHRs enables true partnerships and collaborations with their healthcare team. The vision of a patient-centric healthcare system where quality, safety and efficiency are enabled by cutting edge technology is a compelling one:

- Patients will be empowered and actively involved in their care. They will collaborate with providers in decision-making around care and have ready access to accurate and trusted healthcare information, including their own medical histories, disease specific information and decision support tools for self-care;
- Reliability and safety will increase because physicians will practice evidence-based medicine, have access to knowledge and information at the point of care, be

guided by active decision support tools and routinely communicate and cooperate with other care providers;

- Care will move from episodic encounters to a continuous care model where providers have access to patient data in context; care is delivered proactively, chronic illnesses are monitored by caregivers, patients are able to engage in informed self-care and duplication and waste is minimized.
- Accountability for quality will increase. Quality will be measured and the information shared with all stakeholders; and quality care will be rewarded.

While we are still a long way from realizing this vision (only about 10-15% of physicians are using EHRs in their office practices), the future is now in my own practice, and within 18-24 months will also be in the practices of all of the clinicians at MedStar Physician Partners, a group of outpatient practices owned by MedStar Health. My colleagues and I use an advanced EHR that provides access to the full patient record -- including all relevant clinical information such as diagnoses, immunizations, medications and test results, which is always available in a highly organized and contextually appropriate format, improving the quality of our decision making at the point of care. Computers are located in each of the exam rooms, making it easy to share information with patients and better include them in their own care decisions.

For example, at the start of each visit, the patient is encouraged to look at his or her medication and allergy list and confirm its accuracy (see figure #1). Patient educational materials are integrated into the system, and soon the EHR will provide clinical decision support for patients, which will allow them to make better decisions about self-care for chronic illnesses (see figure #2). The EHR is also designed to link to new medical information, practice guidelines and even recent reference articles, dramatically shortening the time from discovery of new knowledge to its application into clinical practice. Our EHR is also integrated with electronic prescribing, further increasing safety and efficiency of prescribing (see figures #3 and #4). And because the EHR is also available remotely, on-call physicians can view patient records and make care decisions based on the full context of a patient's clinical information anytime and anywhere.

With our fully integrated EHRs, lab reports flow directly from reference and hospital labs securely into the patient record, showing up on the physician's PC for immediate review. This not only makes report review quicker – it also makes it better; new results can easily be viewed or graphed and interpreted in the context of prior results and the patient's full history. Even digital EKGs can be reviewed and compared with earlier tests.

EHRs become more powerful when they use decision support tools that not only provide timely information, but also help clinicians turn that information into actionable knowledge. Active decision support tools are designed to connect key information such as a diagnosis with links, pop-ups, prompts and reminders that encourage discrete changes in patient management. While passive decision support puts key information in

front of the clinician, active support links patient information, guidelines and best practices, and provides an immediate opportunity to take action. For example, in the case of a diabetic patient, an active decision support tool will trigger reminders about clinical management of diabetes such as an overdue test, even if the patient has made an appointment about a sinus infection (see figure #5). Robust uses of decision support tools thus have the power to *inform* an episode of care (the visit for a sinus infection) into an opportunity to also include and optimize chronic care management (see figures #6 and #7).

But by far the greatest potential for an EHR to improve quality, efficiency, and efficacy comes from its use to *transform* care. The transformative uses of an EHR include integration of a registry for proactive care and population management (see figure #8); integration with a secure patient portal or personal health record (see figure #9) for appropriate use of non face-to-face care or eCare; and use of the EHR to optimize team-based care or care coordination.

EHR integration with a population or disease registry allows clinicians to proactively review subsets of patients and take affirmative steps to ensure adherence to nationally accepted best practices. For example, Washington Primary Care Physicians was recently recognized by the Delmarva Foundation, our regional Quality Improvement Organization, for its high rate of pneumonia vaccination in Medicare patients – a process made possible by our use of an EHR with patient registry functions. And when the

arthritis medication Vioxx was recently recalled, all of our patients on the medication, among the 25,000 in the practice, were identified within minutes and then contacted.

What is critical to understand is that in order to fully harness the power of an EHR for transformation, the role of the physician and other care givers in a medical practice must also change, from providers of discrete episodes of medical care, only when patients sense that they are sick or due for a particular service, to a more proactive model of chronic and ongoing care management. The care manager or coordinator, utilizing a patient-centric and physician-guided approach, would use an EHR and other health information technologies to create a medical home for all necessary information about his/her patients, focusing particularly on those with complex and chronic illnesses, and coordinating care between multiple specialists in order to optimize care, avoid conflicting treatment plans and duplicative tests.

Why isn't this vision now a reality in every doctor's office? Much progress has been made in recent years in making EHRs better and more affordable. And I believe that we are on target to meeting the President's goal of universal EHR adoption by 2014.

However, I also believe that this universal adoption and use of EHRs *per se*, will do little to making care better, safer, and more efficacious. To accomplish those goals will take more than placing a computer on a desktop; as discussed above, it will require using the EHR as a tool to *inform* and *transform* care and care processes. And EHRs that can *inform* and *transform* care are even more expensive; and more importantly, the more

EHRs are used for informational and transformational purposes, the more negative the business case for the physician.

Right now, the healthcare reimbursement system is designed to pay clinicians for procedures and episodic clinical care. Proactive care, care coordination, information management and eCare that lead to overall quality improvements and cost savings are generally not reimbursed. If as a matter of national policy, we want physicians not only to invest in EHRs, but also to use them in an optimal manner that will improve quality and safety, (that is as a care management tool, not just an electronic filing cabinet), we have to do more than mandate EHRs, and address what the Institute of Medicine has called our “toxic payment system.”

What does this look like to the average physician? Moving beyond the basic EHR to one that informs care, as mentioned above, adds thousands of dollars of cost, and by adding necessary time and complexity to each office visit (for chronically ill patients), reduces the number of patients that a physician can see each day. Adding an integrated registry implies that the clinician will intentionally take time out of the practice day to use the registry to manage patients who are not coming in when they should, or who are not at target treatment goals. And adding in eCare means that reimbursed office visits are substituted for free virtual care. While the use of a registry and eCare for some specialties would have little impact on daily practice; their optimal use by family physicians and internists could reduce their income to zero.



Fortunately, pay-for-performance and pay-for quality initiatives recognize this problem, and seek to address it with a mix of financial incentives including support for the initial EHR investment as well as increased pay for adherence to quality performance measures, as well as reimbursement reform that pays for care coordination and eCare. My practice, for example, has recently been selected by CareFirst to serve as its first pilot site for the pay-for-performance *Bridges to Excellence* program, which will provide us with additional financial incentives for optimal use of our EHRs for care coordination and quality improvements – which by the way, is the only reason that we were able to afford the EHR enhancements I have been discussing. However, if we want EHRs to enable excellence globally, we have to move from pilots to policy reform.

In conclusion, enormous progress has been made within the last few years in advancing the vision and reality of EHR use and interconnected electronic healthcare. The credit for this remarkable work belongs to many – within government and the private sector; and on both sides of the political aisle. As a practicing physician, I can personally attest to its value in my everyday practice. But as we get closer to realizing this vision of technology implementation for all clinicians, there remains a substantial risk that defining success as universal EHR adoption will actually do very little good for the American people. For success to be seen more broadly than IT adoption, and more appropriately as EHRs integrated into practice to both inform and transform care – fundamental changes must occur within payment and reimbursement policies. As advanced EHRs, combined with these enlightened incentives, will make care better, safer, and more effective, efficient, and equitable.



Figure 2 – Using the EHR for Patient Education

The screenshot displays an EHR window titled "Logician - Peter Basch MD @ Washington Primary Care Physicians (WPCP) - 6/26/2005 6:18 AM - [Chart]". The main window is titled "TEST PATIENT" and "Diabetes Q&E-CCC: TEST PATIENT". The patient is identified as a "65 Year Old Male (DOB: 01/...)".

The interface is divided into several sections:

- Navigation Menu (Left):** Includes Summary, Problems, Doc ID: 2, and a list of clinical categories such as HPI-CCC, Lipid Q&E-CCC, Hypertension Q&E-CCC, Diabetes Q&E-CCC, CPOE-Anticoagulation, PMH-CCC, FH-SH-CCC, Risk Factors-CCC, ROS-CCC, Adult Vital Signs-CCC, PE-CCC, Problems-CCC, CPOE A&P-CCC, Patient Instructions-C, and E&M Advisor.
- Diabetes Self Education Topics (Main Content):**
  - Today's Blood Pressure:** None Recorded. No Blood Pressure recorded this visit. ENTER NOW!
  - Most Recent HgA1c:** 7.8 (06/26/2005). Next due 09/24/2005. Hemoglobin A1C in the 7 -- 8 range is acceptable, with a goal of less than 7.
  - Most Recent Microalbumin:** None Recorded. Next due now. Consider ordering this test yearly as long as urine dipstick protein remains negative.
  - Last Dilated Eye Exam:** None Recorded. Next due now. Dilated eye exams should be done yearly.
  - Last Influenza Vaccine:** None Recorded. Next due Each fall / winter. Diabetics should have an annual influenza immunization.
  - Last Pneumovax:** None Recorded. Next due now. Initial Pneumovax vaccine recommended unless contraindicated.
  - Last Lipid Panel:** 06/26/2005. Next due 06/26/2006. Last Chol. 200, Last LDL 135, Last HDL 40, Last Trig. none. Goals: 200, 100, 40, 150. Consider interventions to lower LDL cholesterol. HDL goal has been met.
- CCC-Wired.MD Patient Education Videos (Right Sidebar):**
  - Language: English
  - Video Time: [ ]
  - Monitoring BS ?
  - Low Blood Sugar ?
  - Diabetic Diet ?
  - Eye Care in DM ?
  - Foot Care in DM ?
  - Kidney Care in DM ?
  - About Insulin ?
  - Aspirin in DM ?
- Click to Print Handouts:** Diabetes Ed
- Click to go to Diabetes Links:** Wired.MD Home Page, ADA Home Page, Local DM Link, Reference
- Bottom Navigation:** HPI, ACV, PMH, FH-SH, Risk Factors, ROS, PE, Problems, CPOE A/P, Instructions/Plan, Copyright. Buttons for Prev Form (Ctrl+PgUp), Next Form (Ctrl+PgDn), and Close.

For Help, press F1

Figure 3 – ePrescribing in the EHR: Legibility

Logician - Peter Basch MD @ Washington Primary Care Physicians (WPCP) - 6/26/2005 6:27 AM - [Chart]

Go Actions Options Help

**TEST PATIENT** Patient ID: 53551-0015001 Home: None Work: None

65 Year Old Male (New Medication)

**Name:** TEST PATIENT  
**Birth:** 01/01/1940  
**Age:** 65 Year Old Male  
**Height:**  
**Weight:**  
**BSA:** Unable to calculate  
**Creatinine:** 0.9 mg/dL (06/26/2005)  
**Insurance:**  
**Current Medications**  
HYDROCHLOROTHIAZIDE 25 MG TABS  
METFORMIN HCL 500 MG TABS (METF  
COLUMADIN TAB 5MG (WARFARIN SOI  
**Current Allergies**  
AMOXICILLIN

**Find Medication**  
Custom List: WPCP Reference List...  
Formulary: < None >  
This patient has no formulary.  
Search Formulary...  
Select Formulary...  
Choose Alternative  
Status...

**Define Medication**  
Medication: CEPHALEXIN MONOHYDRATE 500 MG CAPS (CEPHALEXIN)  
Instructions: 1 tid  
Start Date: 06/26/2005 Stop Date: 07/06/2005  
Duration: 10 Days Weeks Months

**Prescription**  
Quantity: 30 Refills: 0  Print Pt. Handout  
Pharmacy: Select... Authorized By: Basch MD, Peter  
Prescribing Method: Print then Give to Patient  
State: Washington D.C.

Add to custom list:  Drug  Instructions/Duration  Qty/Refills

Save & Continue OK Cancel

For Help, press F1

Figure 4 – ePrescribing in the EHR: Safety

The screenshot shows an EHR interface for a patient named Peter Basch MD. The main window is titled "Update Medications" and displays a "Potential medication list for: PATIENT, TEST". The list includes:

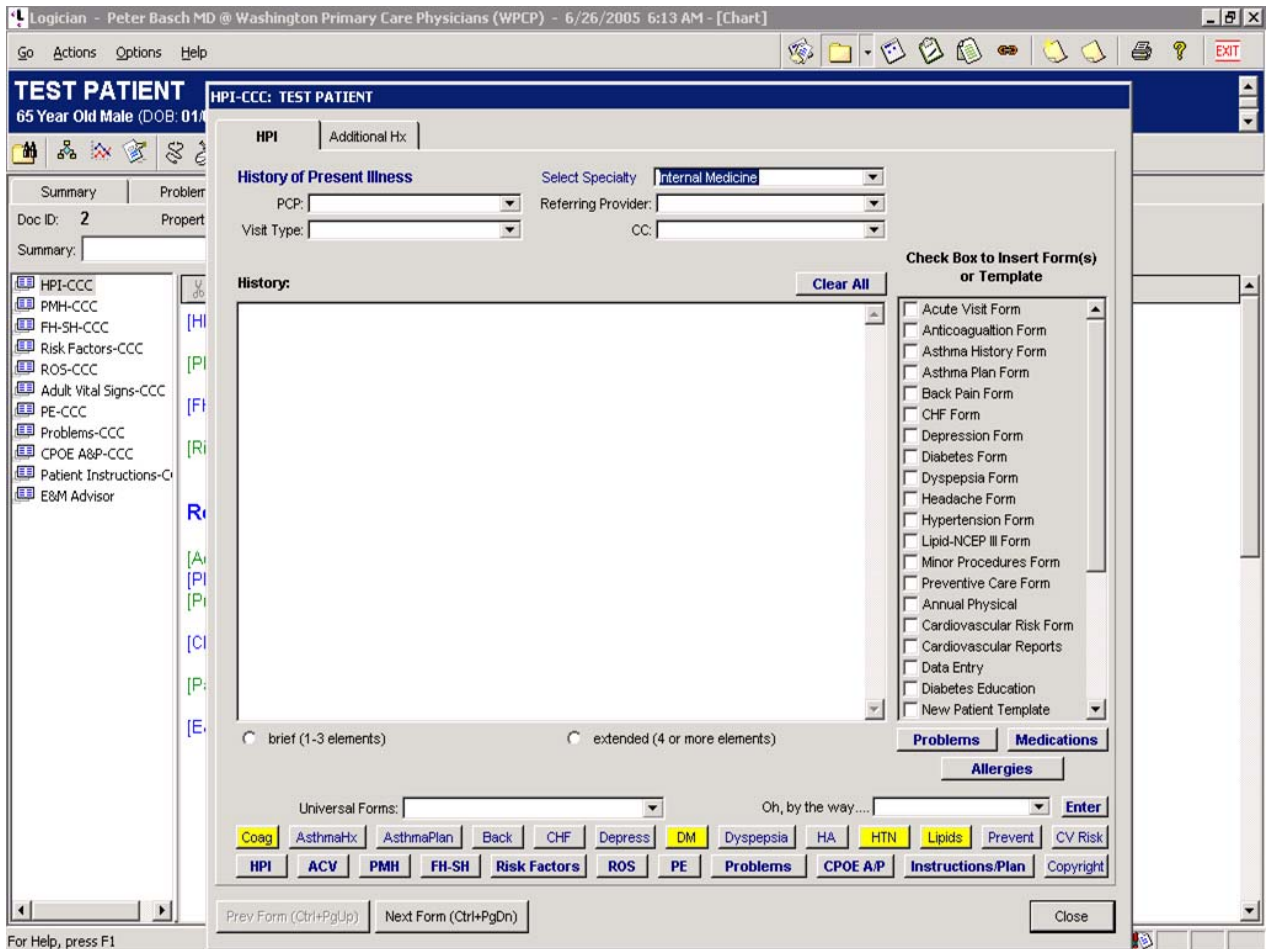
Description	Instructions	Start Date	Last Refill
HYDROCHLOROTHIAZIDE			
METFORMIN HCL 500			
COLUMADIN TAB 5MG			
CEPHALEXIN MONOHYDRATE 500 MG CAPS			

Below the list, there is a "Check Medications and Allergies" section with a "Summary" tab selected. It shows "Interactions for PATIENT, TEST" with a "Show" dropdown set to "severity at least moderate, and certainty at least probable, and ignore food and ethanol". Two red warning messages are displayed:

- CEPHALEXIN MONOHYDRATE 500 MG CAPS note prior adverse reaction to AMOXICILLIN.
- CEPHALEXIN MONOHYDRATE 500 MG CAPS note prior adverse reaction to AMOXICILLIN.

The interface includes a sidebar on the left with various patient data points (e.g., ID: 2, Date of Birth: 01/01/1940) and a bottom toolbar with buttons for "New...", "Change...", "Remove...", "Change Back", "Check Interactions...", "Print Rx", "OK", and "Cancel".

Figure 5 – Using the EHR to *Inform Care*: Moving Beyond the Chief Complaint



**Figure 6 – Using the EHR to *Inform* Care: Informing Anticoagulation Therapy**

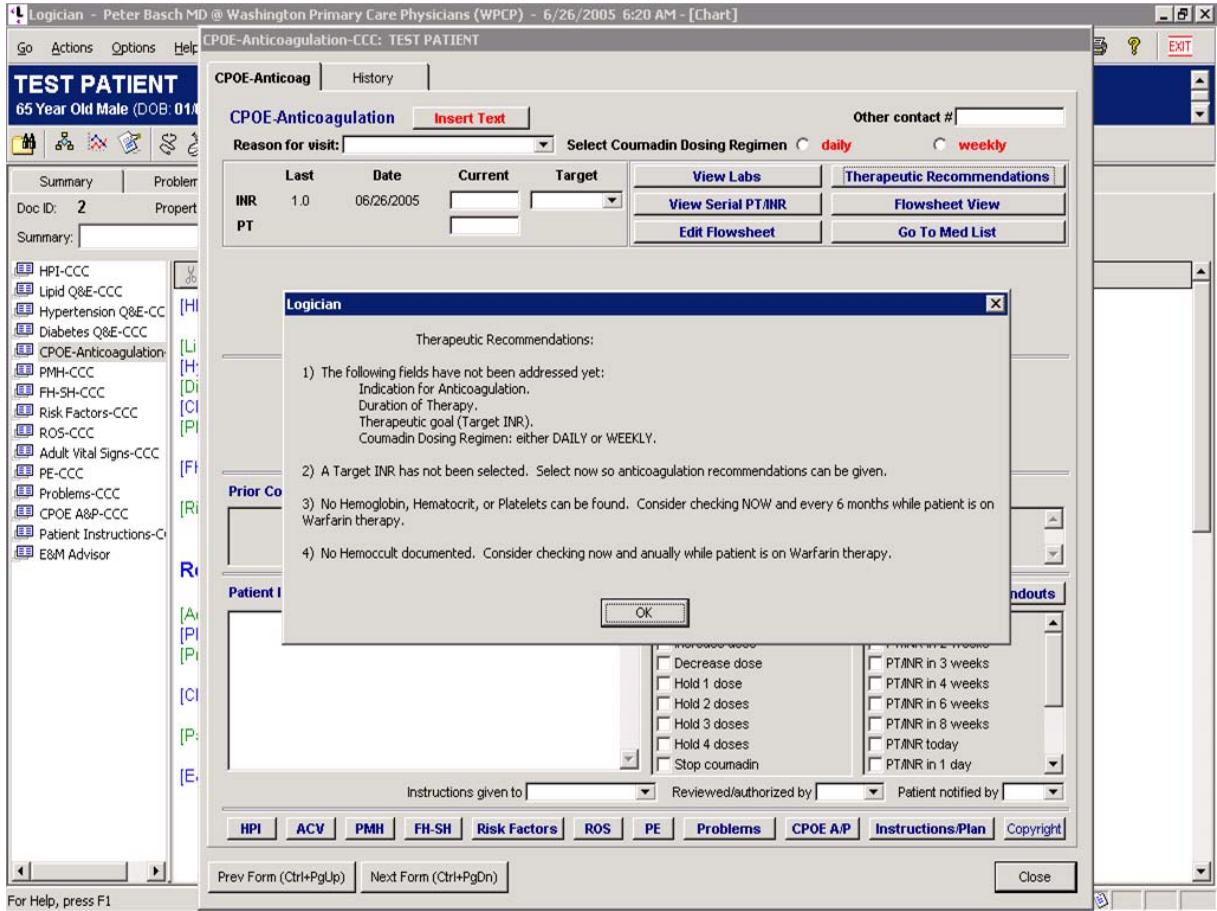


Figure 7 – Using the EHR to *Inform Care*: Informing Diabetes Therapy

Logician - Peter Basch MD @ Washington Primary Care Physicians (WPCP) - 6/26/2005 6:19 AM - [Chart]

TEST PATIENT  
65 Year Old Male (DOB: 01/11/40)

Diabetes Q&E-CCC: TEST PATIENT

Hx | Exam | Diabetes Self Ed | **Diabetes Tx** | Insulin

**Diabetic drug class(s) patient is taking:**  
 Insulin: None  
 Sulfonylurea: None  
**Biguanides (Glucophage):**

Values CHECKED IN RED have been extracted from data in patient's chart. These values cannot be changed unless the appropriate chart data is changed first.

**Current HYPERTENSION & DIABETES medications ONLY listed below.**  
 Go to Medication List to view ALL of patient's medications.

**Logician**  
 Therapeutic Recommendations:

- 1) No Blood Pressure recorded yet as of this visit. You may enter this on the EXAM Page of this form.
- 2) No BP Goal has been recorded. You may enter this on the EXAM Page of this form.
- 3) Consider entering patient into a Diabetic Education Program.
- 4) Patient is on Glucophage and no liver function tests have been done. Consider ordering this NOW and annually (or as needed).
- 5) Patient has an LDL cholesterol > 100. Consider starting a lipid lowering agent to get LDL below 100 if diet alone does not seem to be working.
- 6) Patient has a diagnosis of Diabetes and is not currently on an ACE-I or ARB. Should this be considered?
- 7) Since the patient is Diabetic, the following are now due:  
 Urine Microalbumin  
 Diabetic Eye Exam  
 Foot exam needs to be completed for this visit  
 Pneumovax

BP: No

BP Goal: Not Recorded

Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn) | Close

For Help, press F1



**Figure 8 – Integration of a Patient Registry with the EHR**

PMG - Diabetes Prevention Registry - Microsoft Internet Explorer

Address: <http://columbia.phsor.org/DiseaseRegistryDiabetesDemo/DiabetesMain.aspx>

Providence | Medical Group **Diabetes Registry**  
Patent Pending

Logician Last Queried: 12/01/2003 User: Doctor A MD

Performance Feedback | Diagnosis | **Treatment** | Drug Monitoring | Screening | Resources | Help | Main

Instructions

Logout | Print ALL Patients | Print Checked Patients

Patients	Date of Birth	LDL	BP	A1c	ASA	Last Visit	Next Appt.	Print
Patient 1	02/05/1957	89	98/64	7.6		04/20/2004		<input type="checkbox"/>
Patient 10	03/15/1935	OVERDUE	128/76	7.6		02/19/2004		<input type="checkbox"/>
Patient 107	05/20/1934	121	126/62	6.8		03/29/2004		<input type="checkbox"/>
Patient 108	05/20/1949	93	136/74	6.7		04/09/2004		<input type="checkbox"/>
Patient 109	03/30/1936	111	122/78	6.7		03/23/2004		<input type="checkbox"/>
Patient 11	10/07/1957	100	120/82	7.3		01/28/2004		<input type="checkbox"/>
Patient 110	07/23/1938	OVERDUE	174/78	6.6		12/01/2003		<input type="checkbox"/>
Patient 112	08/01/1932	86	92/62	6		04/13/2004		<input type="checkbox"/>
Patient 113	10/21/1942	111	110/60	10.3		02/27/2004		<input type="checkbox"/>
Patient 114	04/04/1968	90	114/70	6.5		04/14/2004		<input type="checkbox"/>
Patient 115	05/20/1947	111	124/84	6.9		11/21/2003		<input type="checkbox"/>
Patient 116	06/03/1941	111	130/80	10.3		04/14/2004		<input type="checkbox"/>
Patient 12	10/16/1957	111	141/84	10.1		04/16/2004		<input type="checkbox"/>

**Disclaimer:** The source of the information provided above comes directly from your patient's Logician record. The purpose of this information is to support and facilitate medical decision making. It is not intended to be a substitute for a health care provider's professional judgement.

Done Internet

Figure 9 – Integration of a Secure Patient Portal with the EHR

