Using EMRs to Improve Patient Care

Lee Ferguson, MD
Acting Associate Chief of Staff for Ambulatory Care

Department of Veterans Affairs
Medical Center
Washington, DC
2005: Who is “VA”? Veterans Health Administration

- VHA is an Agency of the Department of Veterans Affairs
- Locations
  ~ 1,300 Sites – of – Care
  Including 157 medical centers, ~ 850 clinics,
  long-term care, domiciliaries, home-care programs
- Affiliations
  Affiliations with 107 Academic Health Systems
  Additional 25,000 affiliated MD’s
  Almost 80,000 trainees each year
  60% (70% MDs) US health professionals have
  some training in the VA
Electronic record:

- Available at >1900 sites in hospital
  
  Easy to share
  
  Cannot be misplaced

- Available at 4 surrounding Community Based Outpatient Clinics

- Dedicated on site IRM staff for 24/7 service of the EMR, training, and generation of data reports
“VHA’s integrated health information system, including its framework for using performance measures to improve quality, is considered one of the best in the nation.”

“The Electronic Health Record in the Department of Veterans Affairs is the best in the United States, absolutely the best at large scale, and probably the best in the world.”

John Glaser, Ph.D., October 2003
Vice President & CIO
Partners (Harvard) HealthCare System
“Patients from the VHA received higher-quality care according to a broad measure. Differences were greatest in areas where the VHA has established performance measures and actively monitors performance.”

*Annals of Internal Medicine, December 21, 2004*
# VA Sets the U.S. Benchmark
## 18 Comparable Indicators

<table>
<thead>
<tr>
<th>Clinical Indicator</th>
<th>VA 2003</th>
<th>Medicare 03</th>
<th>Best Not VA or Medicare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advised Tobacco Cessation (VA x3, others x1)</td>
<td>75</td>
<td>62</td>
<td>68 (NCQA 2002)</td>
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<tr>
<td>Beta Blocker after MI</td>
<td>98</td>
<td>93</td>
<td>94 (NCQA 2002)</td>
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<tr>
<td>Breast Cancer Screening</td>
<td>84</td>
<td>75</td>
<td>75 (NCQA 2002)</td>
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<tr>
<td>Cervical Cancer Screening</td>
<td>90</td>
<td>62</td>
<td>81 (NCQA 2002)</td>
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<td>Cholesterol Screening (all pts)</td>
<td>91</td>
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<td>73 (BRFSS 2001)</td>
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<td>Cholesterol Screening (post MI)</td>
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<td>78</td>
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<td>LDL Cholesterol &lt;130 post MI</td>
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<td>Colorectal Cancer Screening</td>
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<td>49 (BRFSS 2002)</td>
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<tr>
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<td>85</td>
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<td>Diabetes Hgb A1c &gt; 9.5 (lower is better)</td>
<td>15</td>
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<td>Diabetes LDL Measured</td>
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<td>Diabetes Eye Exam</td>
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<td>Influenza Immunization</td>
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<td>Mental Health F/U 30 D post D/C</td>
<td>77</td>
<td>61</td>
<td>74 (NCQA 2002)</td>
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</tbody>
</table>

Washington, DC VACO
VHA’s electronic record includes:

• Computerized Patient Record System (CPRS)- basic EMR framework
• VistA Imaging-static and real time imaging/document scanning functionality
• My HealtheVet-veteran’s personal health record accessible from home
• Remote Data/VistA Web-access data from outside individual medical center
• Bar Code Medication Administration (BCMA)- inpatient medication administration software
Computerized Patient Record System (CPRS)

- Windows based GUI software that overlies VistA database
- Clinical enduser is able to:
  - Review and enter progress notes
  - Review and enter procedure notes/operative notes/discharge summaries
  - Review, order, adjust medications
  - Review and order labwork/imaging studies
  - Order consultations with specialists
  - Access remote views/VISTA web
The “gap” between best practices and actual practices

• It is widely known and accepted that certain interventions after a myocardial infarction (“heart attack”) reduce complications and prolong life.

• Actual implementation of these “standard” therapies fall far below expected levels of use.

• For example, aggressive monitoring of cholesterol after a myocardial infarction is a “no brainer”, with accepted target goals for lowering levels of LDL “bad” cholesterol.

• Best practice outside VHA as recently as 2003 reveal only 79% had cholesterol levels checked (VHA was 94%)!
Why does this happen?

• The reality of modern medical practice is that an older, more complicated patient population is living during a time of an ever increasing number of beneficial therapies, which is superimposed on a reimbursement system which puts pressure to minimize the time allotted between patient and care provider.

• The bottom line: leaving it to even the best trained, well intentioned physicians to remember and review everything is a losing position.
EMRs help close the “gap” between best practices and actual practices
EMR: Improving Patient Care

- Two perspectives
  - Individual patient interactions-how can an EMR improve the care of a patient sitting right in front of me?
  - Aggregate care of a community-how can an EMR improve the care of a large population of patients?

“Micro and macro” views are mutually reinforcing
EMR role in improving individual patient care

- Formatted note templates that display patient specific problem lists, allergies, and recent lab data
- Time savings/elimination of redundant care through
  - order entry of labs/images/medications
  - review of past appointments/consultants reports
  - test results/imaging availability
- MyHealtheVet
- Vista Web remote access data retrieval
- Clinical reminders
Order X-ray
Images – Chest X-ray
Data for this patient will be fetched from the following sites:
Washington, DC (WAS): FARLOW, ROBERT F, 220-30-2262, 08/03/1936
Martinsburg, WV (MWV): FARLOW, ROBERT F, 220-30-2262, 08/03/1936
Richmond, VA (RIC): FARLOW, ROBERT F, 220-30-2262, 08/03/1936

There is also a stand-alone version of VistAWeb that is not spawned from the CPRS Tools menu. This version is for users who need to select patients from sites other than their home site. The URL is https://vistaweb.med.va.gov.

Click here to see more on VistaWeb.

This software is powered by MDO.

Comments, suggestions, requests, complaints are all appreciated. Send them to VistaWeb Tech Support.

Got an idea or want to know what's next? See our wish list.

VistaWeb and MDO are products of the VA Medical Center at Ann Arbor, MI.
<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Author</th>
<th>Location</th>
<th>Site</th>
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<tr>
<td>04/29/2005</td>
<td>NURSING PRIMARY CARE NOTE</td>
<td>CLARK,KAY R</td>
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<td>STEPHENS CITY PHYSICIAN NOTE (BASHARMAL)</td>
<td>BASHARMAL,KHODAIDAH</td>
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<td>MYERS,LINDA R</td>
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<td>USER,IMED</td>
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<td>PRE-OP HISTORY &amp; PHYSICAL</td>
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<td>PCC - ESTABLISHED - LEVEL III</td>
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<td>CARDIAC-SURGERY</td>
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<td>PROCEDURES AMB MED CARDIOLOGY</td>
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## Radiology Reports

This page uses pop-up windows. Click here for help.

### Date Range:
- [ ] Today
- [ ] One Week
- [ ] Two Weeks
- [ ] One Month
- [ ] Six Months
- [ ] One Year
- [ ] Two Years
- [ ] All Results

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<th>Procedure Name</th>
<th>Status</th>
<th>CPT Code</th>
<th>Site</th>
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<td>04/18/2005 11:13</td>
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<td>WASHINGTON</td>
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<td>71020</td>
<td>MARTINSBURG VAMC</td>
</tr>
<tr>
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<td>MARTINSBURG VAMC</td>
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<tr>
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<td>03/10/2005 07:40</td>
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<td>A9505</td>
<td>MARTINSBURG VAMC</td>
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<td>VERIFIED</td>
<td>A9500</td>
<td>MARTINSBURG VAMC</td>
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</tbody>
</table>

[back to top]
Vista extracts sent to My HealtheVet account
- Demographics, admissions, and appointments
- Vitals and allergies
- Prescriptions
- Progress notes
- Discharge summaries
- Problem list
- Lab reports: chemistry, microbiology, microscopy, cytology and pathology
- ECG and radiology reports
My HealtheVet: Home Metrics

- 5 self-entered metrics (e-logs)
  - Blood pressure
  - Blood sugar
  - Cholesterol
  - Weight
  - Heart rate
- Ability to create self-defined e-logs

My Blood Pressure Log (Self-entered) (personal health journal of C.P. KLAUBE)
Below is your list of entries for Blood Pressure Log that you have entered into your HealthVault. You may add to this list by clicking the Add New Record button below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Systolic</th>
<th>Diastolic</th>
<th>Comments</th>
<th>Edit</th>
<th>Delete</th>
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<tbody>
<tr>
<td>04/23/2003</td>
<td>122</td>
<td>78</td>
<td>good</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>03/20/2003</td>
<td>120</td>
<td>75</td>
<td>off medication</td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>03/20/2003</td>
<td>120</td>
<td>75</td>
<td>forget to record today</td>
<td>Edit</td>
<td>Delete</td>
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<tr>
<td>03/23/2003</td>
<td>120</td>
<td>75</td>
<td>forget to record today</td>
<td>Edit</td>
<td>Delete</td>
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<tr>
<td>02/06/2003</td>
<td>120</td>
<td>75</td>
<td>severe headache</td>
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<td>Delete</td>
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<td>02/14/2003</td>
<td>120</td>
<td>75</td>
<td>severe headache</td>
<td>Edit</td>
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<td>01/12/2003</td>
<td>120</td>
<td>75</td>
<td>on medication</td>
<td>Edit</td>
<td>Delete</td>
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<td>09/24/2002</td>
<td>120</td>
<td>75</td>
<td>test</td>
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<td>Delete</td>
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Blood Pressure
My Blood Pressure Log (Self-entered)
My Health

Blood Pressure

<table>
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<tr>
<th>Date</th>
<th>Systolic</th>
<th>HN</th>
<th>HT</th>
<th>Diastolic</th>
<th>HN</th>
<th>HT</th>
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</thead>
</table>

Notes: HN = High-normal; HT = Hypertension. Dash lines indicate future goals.
Clinical Reminders

Contemporary Expression of Practice Guidelines

• Time & Context Sensitive
• Reduce Negative Variation
• Create Standard Data
• Acquire health data beyond care delivered in VA

Links Reminder With the Action With Documentation
Excitement, Psychomotor
Intracardiac Catheter Ablation of Arrhythmogenic Focus for Treatment of Ventricu
Nephritis and nephropathy, not specified as acute or chronic
Ocular Hypertension
Passive-aggressive Personality Disorder
Photosensitivity Disorders
Postsurgical Status of Automatic Implantable Cardiac Defibrillator in Situ
Ventricular tachycardia

<No encounter information entered>
The VHA/DOD Clinical Practice Guideline for Management of Dyslipidemia recommends that patients with Ischemic Heart Disease have a lipid profile/LDL every one to two years; and that patients taking lipid lowering medications have a lipid profile/LDL at least every year.

Click on the 'Clinical Maint' button below to display IHD diagnosis, lab results and current lipid lowering medications.

- Order lipid profile.
- Outside lipid profile in past year at another VA or non-VA facility.
- Patient refuses lipid profile testing.
- Defer lipid profile.
- Unable to confirm diagnosis of Ischemic Heart Disease. Inactivate IHD reminders.

<No encounter information entered>
Power of clinical reminders

- Do the right thing in the right patient at the right time
  - Avoid missed treatment
  - Avoid wasted time confirming issues that are already dealt with
- Gain clinician confidence that the reminders will let them know when something is due
- Produce “reminder reports” for feedback to individuals, groups, institutions
EMR role in improving the care of a population

- Different tools are available to identify problem areas, monitor progress over time, and compare to performance between individuals/groups
  - VistA data extracts
  - Clinical reminder reports
Blood Pressure
Pts. with 3+ prior elevated BPs

<table>
<thead>
<tr>
<th>VISN 5</th>
<th>Washington</th>
<th>Martinsburg</th>
<th>Martinsburg</th>
<th>Baltimore</th>
<th>Baltimore</th>
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<td>31,311</td>
<td>35,446</td>
<td>8,970</td>
<td>9,938</td>
<td>12,383</td>
<td>14,710</td>
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Low | Medium | High
Analysis at 4 month Interval

September 20, 2001

January 3, 2002

Percent of Patients

Baltimore
Martinsburg
Washington
Baltimore
Martinsburg
Washington

Normal
Moderate
High

(< 140 / 90)
(140 - 159 / 90 - 99)
(≥ 160 / 100)

Washington, DC VAMC
VAMC PATIENTS WITH HYPERTENSION ON ACTIVE PROBLEM LIST
- AND AT LEAST 1 SCHEDULED P C CLINIC APPOINTMENT, JUN 15, 2002 TO SEP 12, 2002

FOR RED - PROVIDER: MUBSAO, FAAE

SUMMARY:
SEVERE HYPERTENSIVE: 14 (19.7%)
MODERATE HYPERTENSIVE: 22 (32.4%) TOTAL: 70
NORMOTENSIVE: 34 (47.9%) (100.0%)

36 PATIENT(S) HAVE ELEVATED OR NO BP READING.
AMONG THESE PATIENTS:
ACTIVE BETA BLOCKER RX: 12 (33.3%)
ACTIVE CALCIUM CHAN RX: 18 (50.0%)
ACTIVE DIURETIC RX: 17 (47.2%)
ACTIVE ACE INHIBITOR RX: 18 (50.0%)
ACTIVE CENTRAL ACTING RX: 9 (25.0%)
AT LEAST 1 OF ABOVE RXES: 34 (94.3%)

Washington, DC VAMC
Hypertension Provider Report

A. SEVERE HYPERTENSIVE: LAST BLOOD PRESSURE 160+ SBP AND/OR 100+ DBP

<table>
<thead>
<tr>
<th>4-DIG NAME</th>
<th>LAST BP</th>
<th>DATE</th>
<th>BETA-</th>
<th>CALCIUM</th>
<th>DIUR-</th>
<th>ACE</th>
<th>CENTRAL</th>
<th>HOME-PHONE</th>
<th>P C APPTMENTS TO SEP 12</th>
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<tr>
<td>C0657</td>
<td>169/80</td>
<td>02/01/02</td>
<td>YES</td>
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<td></td>
<td></td>
<td></td>
<td>589-744-8276</td>
<td>JUN 25 RED SXGLWE</td>
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<tr>
<td>P9461</td>
<td>169/95</td>
<td>05/17/02</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td></td>
<td>589-192-0802</td>
<td>JUN 26 RED/RN WUKJWEAI</td>
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<tr>
<td>C2553</td>
<td>182/73</td>
<td>06/12/02</td>
<td>YES</td>
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<td>H1312</td>
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<td>787-506-3987</td>
<td>JUN 24 RED ECLBA</td>
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<td>L4563</td>
<td>179/103</td>
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<td>YES</td>
<td>YES</td>
<td></td>
<td>NEED PHONE #</td>
<td>JUL 1 RED ECLBA</td>
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<td>G0172</td>
<td>168/108</td>
<td>06/09/02</td>
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<td></td>
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<td>YES</td>
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<td>787-709-7055</td>
<td>JUL 15 RED ANUFLVKW</td>
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<tr>
<td>G7306</td>
<td>173/92</td>
<td>05/02/02</td>
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<td></td>
<td>589-300-5926</td>
<td>JUL 25 RED NYLEN</td>
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B. MILD HYPERTENSIVE: LAST BLOOD PRESSURE 140–159 SBP AND/OR 90–99 DBP

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<th>DIUR-</th>
<th>ACE</th>
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<th>HOME-PHONE</th>
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<td>JUL 22 RED CREWOPTER</td>
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<td>142/70</td>
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<td>07/05/01</td>
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<td>NEED PHONE #</td>
<td>JUL 16 RED SXGLWE</td>
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<td>149/84</td>
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<td>AUG 1 RED-HOLLAND</td>
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Improving Hypertensives
Washington, DC VAMC

Percent Patients

1998 1999 2000 2001 2002 2003 2004

3,133 6,507 8,357 9,418 10,745 12,606 13,198

< 140, < 90  < 160, < 120  > 160, > 120

Washington, DC VAMC
LDL Values for Patients with Previous MI

Patients seen in the past 2 years --Washington

Fully Satisfactory Performance Measure = 70 %

- July 2003:
  - Low LDL < 120: 68.7%
  - Highest LDL > 120: 14.2%
  - Missing LDL: 17.2%
  - 22% improvement

- February 2004:
  - Low LDL < 120: 83.8%
  - Highest LDL > 120: 14.8%
  - Missing LDL: 1.3%

Washington, DC VAMC
LDL MI Report

GREEN - PROVIDER: FERON, LEE

SUMMARY: NO CURRENT LDL S: 2 (9.5%)

HIGHEST LDL (>119): 6 (28.6%)

ACCEPTABLE LDL (>100): 4 (19.01%)

LOWEST LDL (<100): 9 (42.9%)

TOTAL: 21 (100.0%)

A. (*No Recent Test*:) OLD MI(S) WITH NO LDL TEST SINCE JUL 8, 2001: (6)

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<td>P3332</td>
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<td>R5554</td>
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B. (*Highest*:) OLD MI(S) WITH AT LEAST 1 LDL TEST SINCE JUL 8, 2001, LATEST VALUE 119+: (3)

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<tr>
<th>#</th>
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<th>LOWEST-RESULT</th>
<th>HIGHEST-RESULT</th>
<th>PHONE #</th>
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<td>JUL 08, 02</td>
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<td>JEFFREY, GEORGE</td>
<td>4</td>
<td>JUN 11, 02</td>
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<td>N3258</td>
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<td>FEB 08, 02</td>
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<td>W1234</td>
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<td>2</td>
<td>MAR 25, 03</td>
<td>156.0</td>
<td>MAR 11, 02</td>
</tr>
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</table>
Diabetes Foot Exam, Red Team Exceptional ≥ 87%, FS 82 - 86%

Washington, DC VAMC
File Room after EMR
Electronic Health Records are Fully Deployed Throughout VA

INSIDE POLITICS
Bush calls for electronic medical records

President: We're kind of still in the buggy era'

Wednesday, April 22, 2004 Posted: 0:15 AM EDT (12:15 GMT)

BALTIMORE, Maryland (AP) — When it comes to patients' health records, the United States hasn't left the "buggy era," President Bush said Tuesday at a veterans hospital.

"On the research side, we're the best," Bush told about 120 guests, including veterans, health care professionals, doctors from Johns Hopkins Hospital and the staff from the Veterans Affairs Medical Center in Baltimore. "We're coming up with more innovative ways to save lives. ... On the providers' side, we're kind of still in the buggy era."

The president has set a goal of assuring that most Americans have electronic health records within the next 10 years. To address issues of privacy,

ON CNN TV

Washington, DC VAMC
EHR (VistA) Strategies – Summary

- Use expert and non-expert advisors.
- Local ownership -- Customize templates, reminders and overall organization.
- Package popular (discharge summaries, labs, images) with unpopular (order entry, notes) components.
- Maintain hybrid status until 60-70% use is achieved. ("Tipping point")
- Keep software intuitive and user friendly for rapid adoption by new providers.
- Provide real improvement in patient care.
ECG Showing Ventricular Tachycardia
Images – Cineangiogram
Abrupt fall in Hgb with acute bleeding
File Room after EHR
Abrupt fall in Hgb with acute bleeding
VISN 5 Performance Measures Strategies

Target patients not in compliance.

- Create a master list from reminder reports or hospital database
  assign to a coordinator
  report to provider

- Create a central clinic to correct deficiencies
  e.g.
  LDL >100 or not done
  HbA1c >9 or not done
  BP >140/90
  Mammography overdue
VistA outside VA – Hurricane Katrina

560 patients from Gulfport AFRH evacuated to Washington DC AFRH

- 16 laptop workstations in three buildings – internet with VPN access.
- Patients immediately registered
- Remote views available – Katrina web
- Medications ordered and delivered thru our pharmacy - 1000 Rx in 3 days
- Notes added with AFRH template listing meds for AFRH Walk In Clinic
- Consults, appointments requested.
Images – Colonoscopy – Acute bleeding
WBC fell with antibiotic treatment of Lyme disease
Discharge Summary

He was transferred to the VA Medical Center Neurology Unit and was diagnosed with neurologic complications of Lyme Disease (by nerve conduction evaluation). He began immediate treatment with Ceftriaxone and has had recovery of strength of especially his right leg, and very minimal improvement of the left leg to date. His mental status is clearing according to friends and family, and he is also having improved appetite.

He has lost a "significant" amount of weight in these weeks of hospitalization - at least 20 lbs according to his son-in-law.

His hospital course in summary included:
1. Diagnosis of Lyme disease and start of 28 day course of Ceftriaxone.
2. Nerve conduction was performed to evaluate sensory and motor nerve conduction involvement. MRI of heart report is pending. No serious arrhythmia was documented and no cardiac symptoms reported.
3. Hypothyroidism - was started secondary to SINEM and treated conservatively with levothyroxine.
4. Depression was diagnosed and treatment began with levodopa.
5. Prostate cancer - he receives radon and hycro.
6. Macular degeneration - with blindness of his right eye (prosthesis in place). He takes 4 different eye drops daily and has missed his last eye appointment 3 months ago - requests ophtho exam.
7. Stage 1 erythema of coccyx region - has been using air mattress in hospital.

PAST MEDICAL HISTORY:
- Central Retinal Artery Occlusion
- Chronic Low Back Pain
- Bipolar II
- Glaucoma
- Hip Joint replacement Status (Prosthetic or Artificial Device)
- Hypertension
- Migraines
- Other Speech Disturbance
Weight gain over time
Weight controlled with thorocentisis x2 and Furosemide
Images – Chest X-rays – Right and Left Pleural Effusions

Pleural effusions resolved with thorocentisis and diuretics

Washington, DC VAMC
Images – Widening LBBB on sequential ECGs

QRS increased from 0.154 TO 0.178
Images – MRI Video loop with LBBB on ECG

Septum moves paradoxically away from left ventricle

Washington, DC VAMC
EHR (VistA)

Remote Views

• Remote data button and remote health summaries.
• VistaWeb – patient specific data
• Remote ECG view – map MUSE
• Remote image view
  X-ray, scanned images, and PDF files.
• Direct sign on to remote site with separate access and verify code
Future remote views

- Health Data Repository – Data and notes from all VA visits are integrated chronologically. Fall 2005

- Current functionality will be preserved on Java platform
<table>
<thead>
<tr>
<th>Due Date</th>
<th>Subject</th>
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<tbody>
<tr>
<td>04/14/2006</td>
<td>Colon Cancer Screening</td>
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<tr>
<td>05/19/2005</td>
<td>Influenza Vaccine</td>
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<tr>
<td>05/19/2005</td>
<td>Hypertension (High Blood Pressure)</td>
</tr>
<tr>
<td>05/19/2005</td>
<td>Control of Your Cholesterol</td>
</tr>
<tr>
<td>05/19/2005</td>
<td>Colon Cancer Screening</td>
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<tr>
<td>05/19/2005</td>
<td>Influenza Vaccine</td>
</tr>
<tr>
<td>05/19/2005</td>
<td>Body Mass Index &gt;25</td>
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</table>
Reminders MHV -- Weight

Your BMI is 27 or higher. This means that you are overweight and should consider working on reducing your weight. Please discuss with your primary care team any questions you have about resources available to you to help you lose weight.

Computed Finding: BMI = 34.9 (04/13/2005)
Self Entered Information

- Personal Info
- Medical Events
- Medications
- Allergies
- Test Results
- Locations of Treatment
- My Health Log
My Health eLog (Self-entered)

This is your data. It is not sent to the Department of Veterans Affairs.

You can use Health eLogs to track your blood pressure, blood sugar, etc on a daily, weekly or monthly basis.

- Blood Pressure
- Blood Sugar
- Cholesterol
- Heart Rate
- Weight

Add or delete self-defined metrics
Weight Log (Self-entered)
Overview

Wireless PDA software includes:

- Clinician’s View – CPRS Cover Sheet
- Handheld Bar Code Medication Administration (BCMA)
- Vitals, I&Os
- Care Collect – Lab and Specimen Collection
- Blood Transfusion – Administration
- ECG
Medication Administration: UD

- **Next Patient**: Start: 11/01/02 0700, Stop: 11/01/02 1100
- **CPRS Med Order**: Start: 11/01/02 0700, Stop: 11/01/02 1100
- **Medication**:
  - **CLONAZEPAM**: 0.25MG, 11/01 08:00
  - **CLONAZEPAM**: 0.25MG, 11/01 10:00
  - **NEORAL 25MG**: 25MG, 11/01 08:00
  - **NEORAL 25MG**: 25MG, 11/01 10:00
  - **ASPIRIN TAB**: 325MG, 11/01 09:00
- **Verified by**: Buspirone HCL
- **Dosage**: 5 mg, Status: H
- **Schedule**: Q6H, Type: C
- **Self-med**: Route: PO
- **Admin**: 08/15/02 2:00:00 PM
- **Last Action**: 08/15/02 7:41:00 PM

- **Drug Details**

Washington, DC VAMC
Organization

IRM Steering Committee

- Director and Staff
- IRM chief
- Clinicians with computer expertise
  - National Committees
  - Local applications
- Clinicians with high use but little computer expertise
When to declare victory?

Question – “When can we set a date to stop pulling paper records for Clinics?”
Response – “Stop now – the paper record is no longer used.”

Begin to dismantle medical record and x-ray file rooms.
Solutions

Data Retrieval

- Know database structure for logical retrieval.
- Create automatic reports
- Use reports to improve computer entry.
- Use reports to improve patient care.
  - Assess compliance with current guidelines.
  - Determine outcome to define efficacious treatment
Low LDL <100
60.1%
N=508

Higher LDL 100-119
20.6%
N=174

Highest LDL >120
15.4%
N=127

3.2%
N=30

Missing LDL

LDL Values for Patients with Previous MI
Nov-04

Washington, DC VAMC
Hypertensive Patients Returning to < 140 / < 90

Latest BP in the last 6 months

Washington, DC VAMC
Hypertensive Patients with BP > 160 >100

Washington, DC VAMC