

The Implementation of VistA for Meaningful Use: An Operational Approach

By

The Arizona WorldVistA Network

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Medical Informatics

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National Library of Medicine

Bethesda, MD

Course Objectives

Participants will learn how to:

Re-engineer clinical processes to efficiently use an EHR while improving patient quality

Structure data for quality reporting in chronic disease and preventative care

Use a rapid training and implementation cycle designed to minimize productivity loss.

Do clinical template development for data capture and improved provider speed

Do chronic Disease Reporting from the EHR

Course Overview:

The implementation of an EHR will be broken into:

- Pre-Implementation

- The Implementation week (Go-live)

- Post Implementation activities

The material will be viewed from:

- A quality perspective

- A productivity management perspective

Pre-implementation Activities- Quality Considerations

- Introduction: Why should we use an EHR?
 - Reduced Costs
 - Improved Interoperability
 - Improved Efficiency
 - Improved Patient Outcomes

EHR and Quality

- EHR is a tool; not an outcome
- Quality is a system trait
- Start with the end in mind

How to Structure Data to Improve Patient Quality

- Identify clinical and operational measures of interest.
- Identify the “chain of data” for in your organization and Health Information Technology
- Reduce your clinical measure terms into “cohort logic” and “resolution logic”.
- Further define these terms with “Boolean Logic”
- Have this structured into the EHR
- Record the “Chain” including the structured EHR elements onto a spreadsheet.

Identify Clinical and Operational Measures of Interest

- Use your quality managers to identify and prioritize your clinical measures
- Use supervisors and managers to identify and prioritize your operational measures.
- Original sources for clinical measures include:
 - Uniform Data Set
 - Health Disparities Collaboratives
 - Grant Requirements
 - Pay for Performance and third party payors.

Chain of Data Example

Clinical Definition	Diabetic Flow Sheet	Health Factor and Data	Clinical Reminder (CR)	Input Template (Reminder Dialog)
The Number of Diabetics with a recorded Foot Exam in the last year	Input Template (Reminder Dialog)	N= denominator AND HF DM_FootExam	Diabetic Foot Exam	
Clinical Definition	Logical Definition	Health Factor and Data	Clinical Reminder (CR)	

End Users: What does that mean?

- Providers
- Staff (Front office, back office, medical records, referrals)
- Quality Managers
- Supervisors

End Users (continued)

- All end users need to work toward producing final product
- Example: Title nomenclature and scanned documents
- Example: Chronic Disease Templates and Clinical Reminders (LDL in last year, LDL < 100)
- Providers and Quality Managers need to give the most input.

Clinical Template Considerations

- What is a clinical template?
- What is a note title?
- Why are note title hierarchies important?
- Clinical Template Advantages—
 - Allow quick entry of predefined data
 - Allow capture of predefined data
 - Organizes the progress note
 - Well constructed templates give POC information, improve provider decision-making logic and ensure important clinical elements are addressed.
 - Allows quick entry of “Patient Objects”

Template Advantages: Quick Entry and Capture of Predefined Data:

VistA CPRS in use by: King,Matthew M (10.3.20.232)

File Edit View Action Options Tools Help

TEST.BABY | KMT May 26,09 15:31 | Primary Care Team Unassigned | Remote | Postings

Reminder Dialog Template: Asthma Management

~~~~~ BASELINE SEVERITY ~~~~~

ASTHMA

MILD INTERMITTENT ASTHMA 05/11/2009

MILD INTERMITTENT ASTHMA

MILD PERSISTENT ASTHMA

MODERATE PERSISTENT ASTHMA

SEVERE PERSISTENT ASTHMA

~~~~~ RISK FACTORS AND TRIGGERS FOR ASTHMA ~~~~~

No data available

PROBLEMS (ACTIVE/INACTIVE) & ALLERGIES "Check it to REVIEW only"

TOBACCO USE

CURRENT SMOKER Comment: 1 ppd

PREVIOUS SMOKER

SMOKER IN HOUSE PRESENT

PETS

ENVIRONMENTAL HAZARDS

ALLERGIC RHINITIS PRESENT

ADDITIONAL DOCUMENTATIONS

Visit Info | Finish | Cancel

~~~~~ MEDICATIONS ~~~~~

No data available

~~~~~ ASTHMA ORDER SETS ~~~~~

Diagnoses: HX-TOBACCO USE

Health Factors: CURRENT SMOKER

* Indicates a Required Field

Templates can Provide Decision Logic

The screenshot displays a medical software interface with a patient record for 'ZZ PATIENT, TEST ONE' (DOB: 000-0-0-3322, Jan 24, 1945) and a note titled 'Primary Care Attending Note' dated 'Jun 01, 2009@17:37' by 'King, Matthew M'. A modal window titled 'Template: Lipid_LDL' is open, showing a decision logic question: 'Is Patient LDL greater than 100?'. Below the question are two radio button options: 'YES' and 'NO'. The 'NO' option is selected. The interface includes a menu bar (File, Edit, View, Action, Options, Tools, Help), a toolbar with buttons like 'Flag', 'Remote Data', and 'Postings CWAD', and a sidebar with a tree view of templates including 'Lipid_LDL', 'ASTHM', 'Ped Phy', 'PEDIAT', 'ADULT', 'Adult Ph', 'Speed_', 'SOCIAL', 'PEDIAT', and 'FAMILY'. At the bottom, there are tabs for 'Encounter', 'New Note', 'Cover Sheet', 'Problems', 'Meds', 'Orders', 'Notes', 'Consults', 'D/C Summ', 'Labs', and 'Reports'. The taskbar shows the 'Start' button and the 'CPRS - Patient Chart' application.

Provider Decision Logic

Template: Lipid_LDL

Is Patient LDL greater than 100?

YES

Is patient on a Statin?

YES

NO

Place order for a Statin, if no contraindications:

NO

All None * Indicates a Required Field Preview OK Cancel

Start CPRS - Patient Chart

Templates: Disadvantages

- Not very flexible
 - Data needs to be pre-structured
 - Combinations of chief complaints are a problem
- Can not “personalize” data
- Having a large number of templates is hard to master and can lead to inaccurate reporting
- Fraud exposure
- Many times slower than free texting

Practical Template Use in Primary Care

- Limit the amount of templates available
- Use for standardized forms, preventative care and chronic disease management
- Limit the use of “mandatory fields”
- Acute care templates can be structured by patient age, not symptoms
- Some aspects of the acute care template can be “personalized” for individual providers
- Provider “report cards” help encourage proper use.

Template Elements

The screenshot displays a medical software interface with a patient record and a 'Template Field Editor' dialog box.

Patient Record:

- TEST.MARK '95354'
- KMT May 27, 09 08:46
- Primary Care Team Unassigned
- Pt Insur
- Flag
- Remote Data
- Postings WA

Template Field Editor Dialog:

- Name:** DEMO_FIELD
- Type:** Edit Box
- Field Len:** []
- Text Len:** []
- LM Text:** []
- Miscellaneous:**
 - Inactive
 - Separate Lines
 - Required
 - Exclude From Note
- Indent:**
 - Indent Field: 0
 - Indent Text: 0
- Notes:** []

Background Interface:

- File Edit View Action Options Tools Help
- Last 100 Signed Notes
- Primary Care Attending Note
- May 27 2009@08:46
- King Matthew M
- Template Editor
- Template Fields
- DERM LEGS/ANKLE ETC EXAM Check
- DESCRIBE Check
- DEVELOPMENTAL SCREEN Check
- DIABETES Button
- DIABETES COMORBID COND Check
- DIABETES COMP MAC Button
- DIABETES COMP MIC Button
- DIABETES TYPES Combc
- DIARRHEA Button
- DISCRPTION WP
- DISPOSITION Radio
- DIZZY Button
- DM BRACKET BUTTON Combc
- DM NEW OLD PT Radio
- DM NOR/AB D-NOR Button
- DM Q FOLLOW UP TIME Radio
- DM TYPE 1/2 Radio
- DM Y/N NOT IND D-YES Button
- DM Y/N NOT IND D-NOT IND Button
- Hide Inactive Fields * Indicates a Required
- Ok Preview Cancel Apply

Template Editor [New Template]

Shared Templates: Shared Templates, Document Titles, Consult Reasons for Request, Procedure Reasons for Request

Personal Templates: MyTemplates, DemoTemplate

Personal Template Properties: Name: DemoTemplate

Template Boilerplate Allow Long Lines

Template Field Examples (This is "Boilerplate")
{FLD:DEMO_FIELD_BUTTON}

Edit Shared Templates Show Template Notes

OK Cancel Apply

Insert Template Field

| | |
|--------------------------|-----------------|
| DEMO_FIELD_CHECK_BOXES | Check Boxes |
| DEMO_FIELD_BUTTON | Button |
| DEMO_FIELD_CHECK_BOXES | Check Boxes |
| DEMO_FIELD_COMBOBOX | Combo Box |
| DEMO_FIELD_DATE | Date |
| DEMO_FIELD_EDIT_BOX | Edit Box |
| DEMO_FIELD_HYPERLINK | Hyperlink |
| DEMO_FIELD_NUMBER | Number |
| DEMO_FIELD_RADIOBUTTONS | Radio Buttons |
| DEMO_FIELD_WD_PROCESSING | Word Processing |
| DERM LEGS/ANKLE ETC EXAM | Check Boxes |
| DESCRIBE | Check Boxes |
| DEVELOPMENTAL SCREEN | Check Boxes |
| DIABETES | Button |
| DIABETES COMORBID COND | Check Boxes |
| DIABETES COMP MAC | Button |

* Indicates a Required Field

Preview Insert Field Done

Template Field Examples (This is "Boiler Plate".)

Button:

Check Boxes: Hi Bye Just leave

Combobox:

Date Box: ...

Edit Box:

Hyperlink Box: <http://www.iscribe.com>

Number box:

Radio Buttons: Hi Bye Just Leave

Word Processing:

This is a Work Processing Field

Select Date/Time

| May 27, 2009 | | | | | | |
|--------------|-----|-----|------|-----|-----|-----|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| | | | | | 1 | 2 |
| 3 | 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 | | | | | | |

Today

OK

Cancel

* Indicates a Required Field

Preview

OK

Cancel

TEST.MARK KMT May 27,09 08:46 Primary Care Team Unassigned Pt Insur Flag Remote Data Postings WA

'95354' Apr 16,1970 (39) Provider: KING,MATTHEW M

Last 100 Signed Notes Primary Care Attending Note May 27 2009@08:46 King Matthew M

Template Editor

Edit Action Tools

Shared Templates

- Shared Templates
- Document Titles
- Consult Reasons for Request
- Procedure Reasons for Request

Personal Templates

- MyTemplates
 - DemoTemplate
 - MATTSAAA
 - Matt'sMigrant
 - ASTHMA ACTION
 - Ped Physical Ex (M)
 - PEDIATRIC SOCIAL
 - ADULT SOCIAL HI
 - Adult Physical Ex (
 - Speed_Adult
 - SOCIAL HISTORY

Copy →

Hide Inactive

Line: 4 Column: 48

Template Boilerplate Allow Long Lines

```

Button: {FLD:DEMO_FIELD_BUTTON}      | LAB RESULTS |

Check Boxes: {FLD:DEMO_FIELD_CHECK_BOXES}

Combobox: {FLD:DEMO_FIELD_COMBOBOX}

Date Box: {FLD:DEMO_FIELD_DATE}

Edit Box: {FLD:DEMO_FIELD_EDIT_BOX}

```

Edit Shared Templates Show Template Notes

OK Cancel Apply

New Template

Personal Template Properties

Insert Patient Data (Object)

- Lab Results
- Lab Last Gtt
- Lab Lipid Profile
- Lab Microalbumin
- Lab Results
- Lab Tests Declined
- Language
- Last 3 Progress Notes
- Last Three Progress Notes
- Last Two Progress Notes
- Life Stress
- Matt Object
- Matt2
- Medical Assistant Note (history)
- Menstrual Hy

Refresh Insert Object Done

Template Field Examples (This is "Boiler Plate".)

Button:

05/27/2009 09:16
DOB: 04/16/1970

TEST, MARK 95354
CH - Chem & Hematology

No data available

Check Boxes: Hi Bye Just leave

Combobox:

Date Box: ...

Edit Box:

Hyperlink Box: <http://www.iscribe.com>

Number box:

Radio Buttons: Hi Bye Just Leave

Word Processing:

This is a Work Processing Field

* Indicates a Required Field

Preview

OK

Cancel

Template Types

- Simple
- Complex

Template Editor [Edit] [Action] [Tools]

Shared Templates

- Shared Templates
- Document Titles
- Consult Reasons for Request
- Procedure Reasons for Request

Personal Templates

- MyTemplates
 - DemoTemplate
 - MATTSAAA
 - Matt'sMigrant
 - ASTHMA ACTION PLAN
 - Ped Physical Ex (Normal & ...)
 - PEDIATRIC SOCIAL HISTO...
 - ADULT SOCIAL HISTORY
 - Adult Physical Ex (Normal ...)
 - Speed_Adult
 - SOCIAL HISTORY

Personal Template Properties

Name: DemoTemplate

Template Type: Template

Reminder Dialog: Template

Active

Hide Items in Templates Drawer

Exclude from Group Boilerplate

Number of Blank Lines to insert between items: 0

Lock

Template Boilerplate Allow Long Lines Line: 4 Column: 35

```

Button: {FLD:DEMO_FIELD_BUTTON}

Check Boxes: {FLD:DEMO_FIELD_CHECK_BOXES}

Combobox: {FLD:DEMO_FIELD_COMBOBOX}

Date Box: {FLD:DEMO_FIELD_DATE}

Edit Box: {FLD:DEMO_FIELD_EDIT_BOX}

```

Edit Shared Templates Show Template Notes

[OK] [Cancel] [Apply]

Simple Templates

- Use :
 - Boilerplate text
 - Patient data objects
 - Formatting
 - Template fields

Complex Templates

- Can Hide Elements for “nested logic” We call these “Dialog Templates”.
- Associate with pre-made data elements to capture and store crucial information
- Satisfy Clinical Reminders (Reminder Dialogs)
- Use TIU and Health Summary Objects
- Incorporate other parts of the EHR into one workspace: Encounter data, order sets, etc

'6'

Last 100 Signed

- New Note
- All signed
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma
- Ma

- Follow
- Histor
- Acute
- Farmv
- MEDV
- MA HI
- CORP
- INJEC
- IMMU
- Admir
- ADU

Cover Sheet

Reminder Dialog Template: IMMUNIZATION GIVEN

Hib (Wyeth)
 HPV (Gardasil)
 Influenza 6-35 Months
 FLU VACCINE,3 YRS & ABOVE, IM
 Inactivated Poliovirus(IPV)
 MMR
 MMRV (Proquad)
 Meningococcal
 Pneumococcal (Age 5 and under)PCV7
 Pneumococcal Adult LOT # : _____ ; MANUFACTURE: _____ ; EXPIRATION DATE: _____
 ; ROUTE : GLUTEAL
 TB Skin Test (PPD)
 TDAP (over 7)
 TD (7 yrs or younger)
 TD - Adult LOT # : _____ ; MANUFACTURE: _____ ; EXPIRATION DATE: _____ ; ROUTE :
 : GLUTEAL
 Varicella vaccine
 Rotavirus
 Twinrix LOT # : _____ ; MANUFACTURE: _____ ; EXPIRATION DATE: _____ ; ROUTE :
 GLUTEAL
 Zostavax Vaccine (Shingles)

Immunization given today
Pneumococcal Adult LOT # : ; MANUFACTURE: ; EXPIRATION DATE: ; ROUTE :
GLUTEAL

Procedures: **MENINGOCOCCAL/MENACTRA, IM**
 Immunizations: **PNEUMOCOCCAL**

* Indicates a Required Field

'6'

- Last 100 Signed
- New Note
 - Ma
 - All signed
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma
 - Ma

- ADU
 - Pre
 - 1-C
 - RC
 - PE
 - Cre
 - DE
 - Sp
 - Cre
 - cre
 - AD
- Cover Sheet

Reminder Dialog Template: Preventative Adult Screening (HMF)

PAP

PAP COUNSELING

PAP COUNSELING DONE

PAP COUNSELING NOT NEEDED

Screening

PAP smear was obtained at this encounter

Record results of PAP smear completed previously or elsewhere

Patient declined PAP smear

Defer PAP smear

PAP smear not indicated

Orders:

Place consult

Click here to change the frequency of PAP smears for this patient

PROSTATE

SAFE SEX

SAFE SEX COUNSELING DONE Comment: Patient is only 1 year old: did not understand...

SAFE SEX COUNSELING NOT NEEDED

Visit Info | Finish | Cancel

SAFE SEX COUNSELING DONE
Comment: Patient is only 1 year old: did not understand...
FLU SHOT ADULT

Health Factors: SAFE SEX COUNSELING DONE
Orders: CONSULTS

* Indicates a Required Field

Chronic Disease Management in an EHR– Our Experience

- Objectives: Improved efficiency by using the EHR to collect chronic disease data at point of care.
 - Use Clinical Reminders
 - Use a “Virtual Registry” through structured data
 - Produce the desired reports
 - Produce patient lists for management and outreach

Much of this workshop will focus on how to do this.

| | | | | | | | |
|--|---|------------------------------|----------|------|-------------|--|----------------------|
| TEST,PATIENT
'38-95-7-1' Apr 26,1953 (56) | Visit Not Selected
Provider: KING,MATTHEW M | Primary Care Team Unassigned | Pt Insur | Flag | Remote Data | | Postings
D |
|--|---|------------------------------|----------|------|-------------|--|----------------------|

| | | |
|--|--|---|
| Active Problems
Diabetes Mellitus Without Menti
Routine Gynecological Examin
Diabetes With Renal Manifestat
Cancer: Breast Malignant Neop | Allergies / Adverse Reactions
No Known Allergies | Recent Immunizations
Dpt Sep 10,2008 22:29
Dpt Sep 10,2008 01:37
Influenza Mar 18,2009 13:14
Influenza Mar 16,2009 00:00
Influenza Sep 10,2008 22:29
Pneumo-VAc Apr 15,2009 13:22
Tdap > 7 Mar 19,2009 16:14 |
|--|--|---|

| | | |
|--|---|-----------------|
| Active Medications
Zz Drug Active
Eszopiclone 2mg Tab Pending | Clinical Reminders
Diabetic Eye Exam DUE NOW
Diabetic Foot Exam Jan 31,09
ASTHMA SPECIALIST Error
Colonoscopy Jan 01,13
Q DM FLOW SHEET Jul 01,09
FLU SHOT Mar 16,10
MNT NUTRITION CONSULT DUE NOW | Due Date |
|--|---|-----------------|

| | | |
|---|--|---|
| Recent Lab Results
No Orders Found. | Vitals
T 98.7 F Mar 20,2009 13:14 (37.1 C)
P 80 Mar 20,2009 13:14
R 16 Mar 20,2009 13:14
BP 120/70 Mar 20,2009 13:14
HT 53 in Mar 19,2009 16:14 (134.6 cm)
WT 133 lb Mar 20,2009 13:14 (60.3 kg)
CG 20 in Jan 04,2008 16:49 (50.8 cm)
BMI 33.36 Mar 20,2009 13:14 | Appointments/Visits/Admissions
Apr 17,2009 08:30 Meek Brai
Apr 15,2009 13:22 Alvarez Je
Apr 01,2009 16:26 Elali Ibrah
Mar 30,2009 14:51 Alvarez Je
Mar 19,2009 16:14 Alvarez Je
Mar 18,2009 13:14 Alvarez Je
Mar 18,2009 09:14 Syed Bok
Dec 16,2008 09:20 Rahaman
Sep 10,2008 22:29 Albery Ric |
|---|--|---|

[Cover Sheet](#) |
 [Problems](#) |
 [Meds](#) |
 [Orders](#) |
 [Notes](#) |
 [Consults](#) |
 [D/C Summ](#) |
 [Labs](#) |
 [Reports](#)

| | | | | | | | |
|---|--|------------------------------|----------|------|-------------|--|----------------------|
| TEST.PATIENT
'38-95-7-1' Apr 26,1953 (56) | KMT May 27,09 09:51
Provider: KING,MATTHEW M | Primary Care Team Unassigned | Pt Insur | Flag | Remote Data | | Postings
D |
|---|--|------------------------------|----------|------|-------------|--|----------------------|

Last 100 Signed Notes Primary Care Attending Note May 27,2009@09:51 King,Matthew M [Change...](#)

- [-] New Note in Progress
 - [-] May 27,09 Primary C
- [-] All signed notes
 - [-] Apr 15,09 INJECTABI
 - [-] Apr 15,09 PATIENT C
 - [-] Apr 15,09 ADULT GE
 - [-] Apr 15,09 ADVANCE
 - [-] Apr 01,09 ADULT GE
 - [-] Apr 01,09 ADULT SO
 - [-] Mar 30,09 LABORATI
 - [-] Mar 19,09 MERCY CA
 - [-] Mar 18,09 ADULT GE
 - [-] Mar 18,09 PEDIATRI

Reminder Resolution: Diabetic Eye Exam

Patient had a diabetic eye exam performed previously or elsewhere. Date: * [] [] 2009

Location: []
Exam Result: (None selected)

- Patient currently has appointment scheduled for optometry clinic
- Patient refuses diabetic eye exam.
- Patient was contacted and reminded to get their annual retinal exam.
- Unable to confirm diagnosis of diabetes.
- Other (this will not turn off reminder):

Orders:

Place order for eye consult to Optometry.

Templates Node-
Reminders

- [-] Due
 - Diabetic Eye Exam**
 - Diabetic Foot Exam
 - ASTHMA SPECIALIST
 - Colonoscopy
 - Q DM FLOW SHEET
 - FLU SHOT
 - MNT NUTRITION COI
- [-] Applicable
- [-] Not Applicable
- [-] Other Categories

Clear Clinical Maint Visit Info < Back Next > Finish Ca

Diabetic Eye Exam :
Patient had a diabetic eye exam performed previously or elsewhere.

Health Factors: **DIABETIC EYE PERFORMED ELSEWHERE (Historical)**
Examinations: **DIABETIC EYE EXAM (Historical)**

FAMILY CARE CENTER _Provider one

| Reminder | Needed | Done | | Percent | Bench |
|-----------------------------|--------|------|--------------|---------|--------|
| Diabetic Eye Exam | 104 | 87 | PROVIDER ONE | 83.65% | 90.00% |
| DIABETIC HBA1C | 104 | 87 | PROVIDER ONE | 83.65% | 90.00% |
| Diabetic LDL not found | 104 | 79 | PROVIDER ONE | 75.96% | <20% |
| Pneumovax | 149 | 79 | PROVIDER ONE | 53.02% | 90.00% |
| Diabetic Micro:Creat Ratio | 104 | 82 | PROVIDER ONE | 78.85% | 80.00% |
| TETANUS ADULT SHOT PATIENTS | 507 | 299 | PROVIDER ONE | 58.97% | 80.00% |
| | 533 | | PROVIDER ONE | | |

FAMILY CARE CENTER _Provider two

| | | | | | |
|----------------------------|-----|-----|--------------|--------|--------|
| Diabetic Eye Exam | 175 | 70 | PROVIDER TWO | 40.00% | 90.00% |
| DIABETIC HBA1C | 175 | 63 | PROVIDER TWO | 36.00% | 90.00% |
| Diabetic LDL not found | 175 | 26 | PROVIDER TWO | 14.86% | < 20% |
| Pneumovax | 307 | 180 | PROVIDER TWO | 58.63% | 90.00% |
| Diabetic Micro:Creat Ratio | 175 | 40 | PROVIDER TWO | 22.86% | 80.00% |
| TETANUS ADULT SHOT | 637 | 447 | PROVIDER TWO | 70.17% | 80.00% |

FAMILY CARE CENTER _Provider one

Using Alerts and Notifications Properly

- Alerts will “pop” up to warn the provider of a potential problem or interaction (allergy-drug, drug-drug, drug-lab monitor, high creatinine, etc)
- Notifications will appear as a “work list” for providers to accomplish. (Unsigned orders or notes, consult results, lab results, triage note, etc.)

| | | | | | | | |
|------------------|----------------------------|------------------------------|----------|------|-------------|--|------------------------|
| TEST.BABY | KMT May 27,09 10:20 | Primary Care Team Unassigned | Pt Insur | Flag | Remote Data | | Postings
WAD |
| '6' | Nov 02,2007 (1) | Provider: KING,MATTHEW M | | | | | |

View Orders

Active Orders (includes Pending & Recent Activity) - ALL SERVICES

| Serv... | Order | Start / Stop | Provider | Nurse | Clerk | Ch... | Stat... | L... |
|----------|---|-----------------------------------|-----------|-------|-------|-------|---------|------|
| | >> DURABLE MEDICAL EQUIPMENTS: WHEEL CHAIR
PROVIDER: BOKHARI,SYED
QUANTITY: 1
REASON / COMMENTS: DISABLE | Start: 02/22/08
23:33 | Bokhari,S | | | | active | Syr |
| | >> BOKHARI,SYED
WHEEL CHAIR | Start: 02/22/08
22:53 | Bokhari,S | | | | active | Syr |
| Activity | >> DURABLE MEDICAL EQUIPMENTS: WHE
PROVIDER: BAUTISTA,JOSE
QUANTITY: 1
REASON / COMMENTS: TEST | Start: 02/22/08
23:36 | Bokhari,S | | | | active | Syr |
| | >> DURABLE MEDICAL EQUIPMENT WHELL CHAIR | Start: 02/22/08
23:36 | Bokhari,S | | | | active | Syr |
| Nursing | >> DURA
CHAIR | | Bokhari,S | | | | active | Syr |
| Out. Me | *TOBRAM
INSTILL 2
Quantity: 1 | | Bokhari,S | | | | active | Syr |
| | *CEFTRIAXONE INJ,SOLN 1GM/VIAL
INJECT 1000 MG IM NOW
Quantity: 1 Refills: 1 | Start: 05/15/09
Stop: 05/16/10 | Bokhari,S | | | | active | Syr |
| | ROSIGLITAZONE TAB 2MG
TAKE ONE TABLET BY MOUTH EVERY DAY
Quantity: 30 Refills: 0 | | Bokhari,S | | | | pendin | Oth |
| | AMOXICILLIN 500/CLAV K 125MG TAB
TAKE ONE TABLET BY MOUTH TWICE A DAY
Quantity: 20 Refills: 0 | | Alvarez,J | | | | pendin | Alv |
| | medroxyPROGESTERone INJ,SUSP
INJECT 150 MG INTRAMUSCULAR Q 13 W
Quantity: 1 Refills: 0 | | Bokhari,S | | | | pendin | Alv |
| | ASPIRIN TAB,EC 81MG
TAKE ONE TABLET BY MOUTH EVERY DAY
THIS IS A REFILL REQ | | Bokhari,S | | | | pendin | Alv |

Order Checks

Potential polypharmacy - patient currently receiving 10 medications.

Write Delayed Orders

Write Orders

- *****INDIVIDUAL ORDERS*****
- Vital Signs
- NURSING/MA ORDERS (Provide
- Allergy/Adverse Reaction
- DME
- XXXXXXXXXXXXXXXXXXXXXXXXXXXX
- *****CONSULTS*****
- NEW CONSULT
- *****LAB ORDERS*****
- LAB ORDERS (LEXICON)
- LABS SELECTED
- LABS SORTED
- *****MEDICATION ORDERS*****
- Clinica Meds (OUT PT)
- Non Clinica Meds (NON VA)
- MONSTER.MEDS
- CLINICA FORMULARY PLEASE N
- WALMART/BASHA'S/TARGET F
- XXXXXXXXXXXXXXXXXXXXXXXXXXXX
- *****ORDER SETS*****
- FAMILY MEDICINE

TEST.BABY KMT May 27,09 10:20 Primary Care Team Unassigned Pt Insur Flag Remote Data Postings WAD

'6' Nov 02,2007 (1) Provider: KING,MATTHEW M

- View Orders
- Active Orders (includes P
- Write Delayed Orders
- Write Orders
- INDIVIDUAL ORDER
- Vital Signs
- NURSING/MA ORDERS
- Allergy/Adverse Reaction
- DME
- CONSULTS
- NEW CONSULT
- LAB ORDERS
- LAB ORDERS (LEXICON
- LABS SELECTED
- LABS SORTED
- MEDICATION ORDER

Medication Order

ACACIA POWDER Change

| Dosage | Complex | Route | Schedule |
|--------------------------|---------|---------|----------------------------------|
| THIN LAYER ACACIA POWDER | | TOPICAL | BID <input type="checkbox"/> PRN |
| THIN LAYER ACACIA POWDER | | TOPICAL | BID |
| | | ORAL | MO-WE-FR
NOW |

Order Checking

Previous adverse reaction to: PHARMACEUTICAL AIDS/REAGENTS (LOCAL)

Days Supply: 30

Priority: ROUTINE

HOME MED

ACACIA POWDER

TAKE THIN LAYER BY AFFECTED AREA TWICE A DAY

Quantity: 60 Refills: 1

| Stat... | L... |
|---------|------|
| active | Syt |
| active | Syt |
| active | Syt |
| active | Syt |
| active | Syt |
| active | Syt |
| active | Syt |
| active | Syt |
| pendin | Oth |
| pendin | Alv |
| pendin | Alv |
| pendin | Alv |

FAMILY MEDICINE TAKE ONE TABLET BY MOUTH EVERY DAY THIS IS A REFILL REQ

A.DONOTUSE
'93218'

View Orders
Active Orders (ir

Write Delayed C

Write Orders

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
INDIVIDUA
Vital Signs
NURSING/MA C
Allergy/Adverse
DME

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
CONSUL

NEW CONSULT

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
LAB ORDE

LAB ORDERS (L
LABS SELECTE
LABS SORTED

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
MEDICATI

Clinica Meds (OUT PT)
Non Clinica Meds (NON VA)

MONSTER.MEDS
CLINICA FORMULARY PLEASE N
WALMART/BASHA'S/TARGET F

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
ORDER SETS

FAMILY MEDICINE

Patient Selection

- Patient List
- Default: KING MATTHEW
 - Providers Clinics
 - Team/Person: Wards
 - Specialties All

Patients (KING MATTHEW TIDWELL)

- No Appointments.
- A,Donotuse
 - Aaron,Ayanna
 - Aaron,Carol
 - Aaron,David M
 - Aaron,Jennifer
 - Aarvig,Dennis
 - Aasland,Cristina
 - Aazami,Merrian
 - Abad,Jose
 - Abad,Quirino
 - Abalos,Yesenia

OK
Cancel

- Specific "In-Depth" Lookup by
- None of the below
 - PHONE NUMBER [RESIDENCE]
 - DATE OF BIRTH

Save Patient List Settings

Notifications

| I... | Patient | Locati... | Urgen... | Alert Date/Time | Message | Forwarded By/When |
|------|------------------|-----------|----------|-----------------|--------------------------------------|-------------------|
| | TEST.BABY (T0... | | HIGH | 05/27/2009@1... | Order requires electronic signature. | |

Process Info Process All Process Forward Remove

Alerts and Notifications

- Use alerts and notifications judiciously
- Prioritize notifications intelligently
- Supervisors should be able to receive reports of outstanding notifications and days late statistics
- Allowing text entry for medications when using order checks is **HIGHLY** discouraged.

Other Quality Issues Pre-implementation

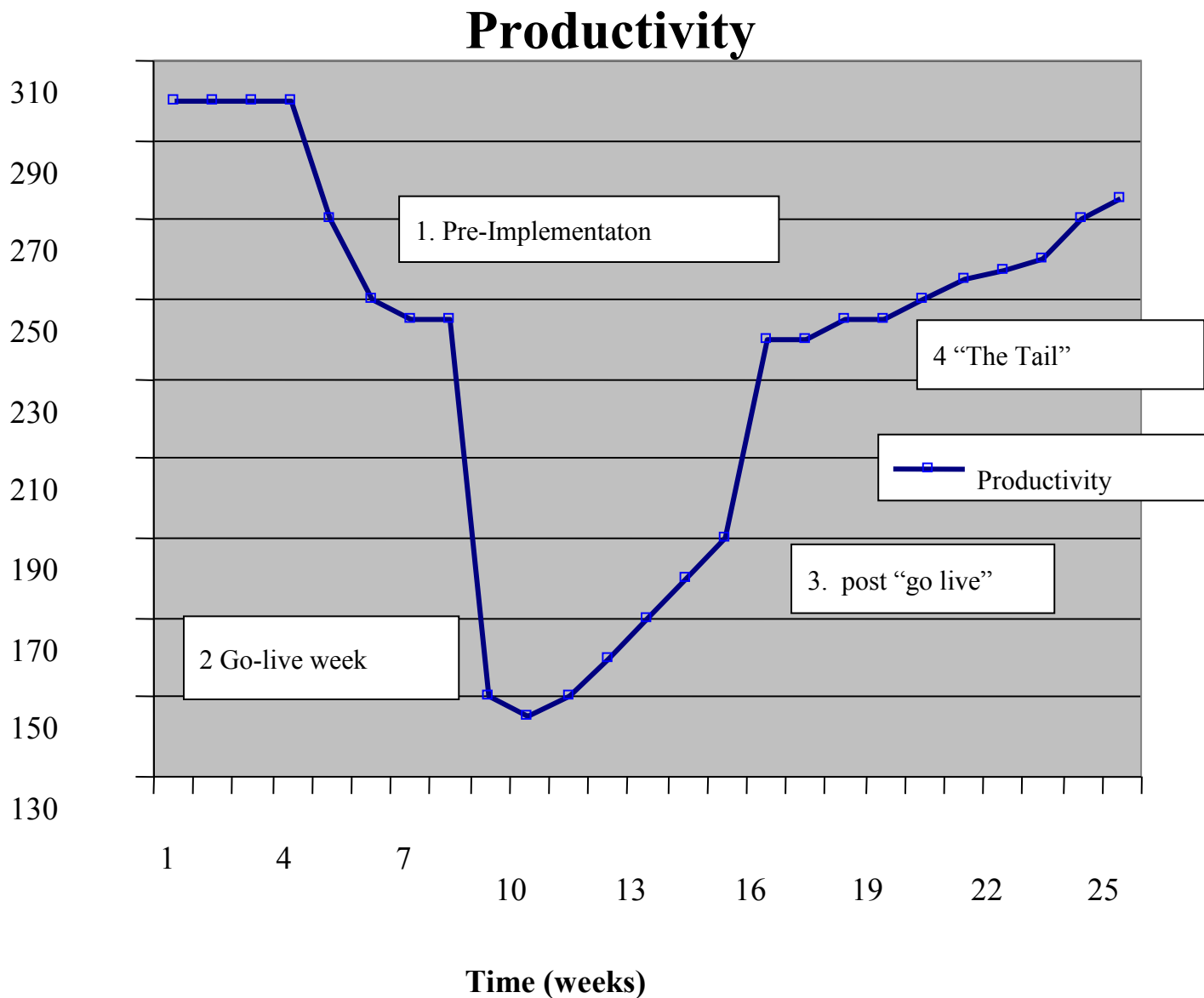
- Staff assessment and “gap training”
- Job description and evaluation changes
- Managing patient triage and backlog during period of low provider productivity
- Patient safety procedures during the transition period and beyond
- Data entry protocols and timelines

Pre-Implementation: Productivity Considerations

- A successful EHR implementation should start with a solid foundation of quality considerations
- Then the following four areas are key:
 - Provider and Staff “buy in”
 - Effective training
 - EHR design and configuration
 - Patient data conversion from non-EHR to EHR

Idealized Productivity Loss from Implementation Activities

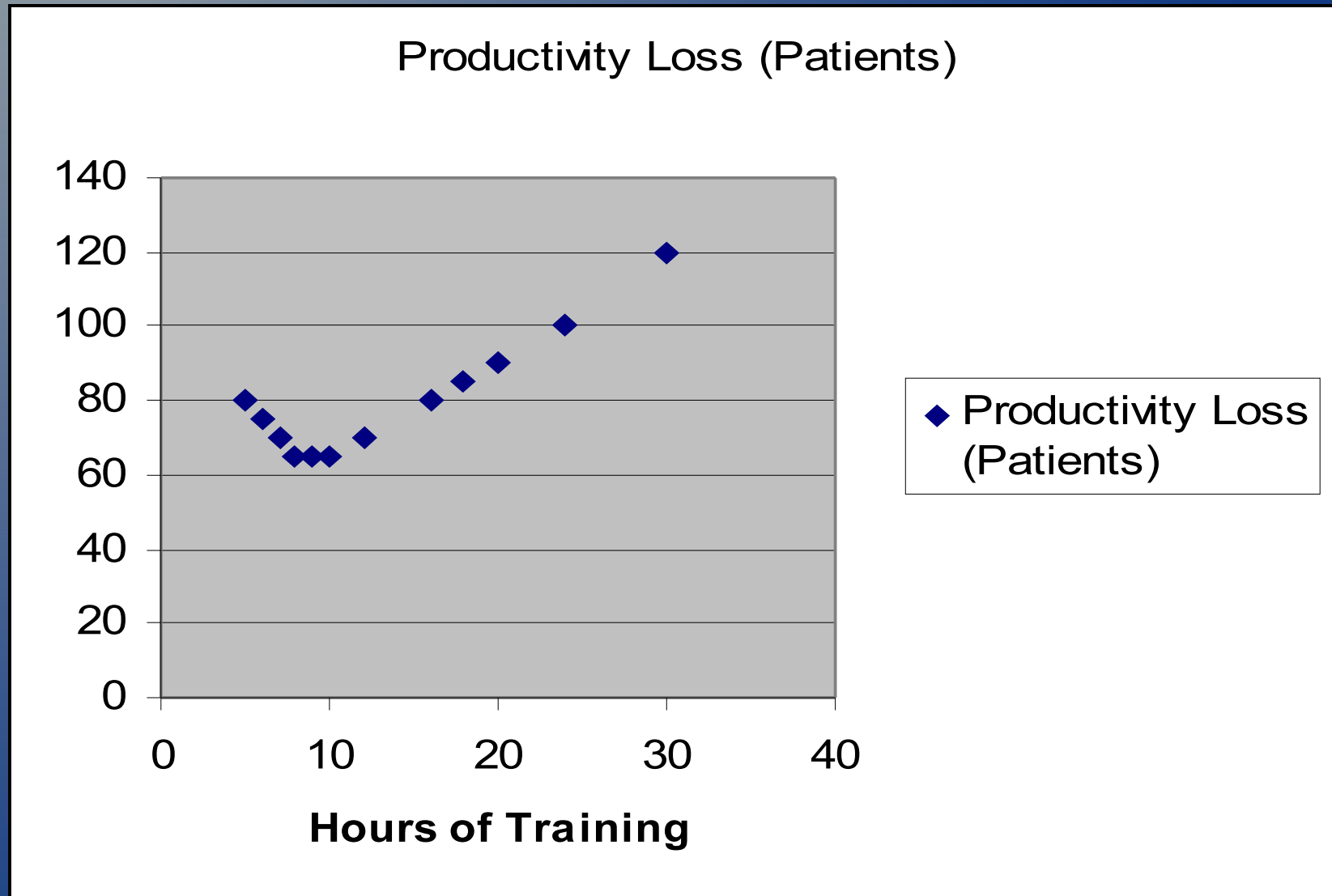
Patients



The Four Pillars of Success are Productivity Management Areas

- Provider and Staff Acceptance
 - Crucial to Success
 - Dependent upon a “local clinical champion”
 - J-curve effect on provider productivity

J-curve



Staff and Provider Training

- Too much or too little training can adversely affect productivity (J-curve)
- Other factors include:
 - Timing
 - Type (breakouts, group, hands on, etc)
 - Distraction (example: focus on productivity instead of technique)

EHR Configuration

- This is a very common cause of failure, nagging productivity problems, poor acceptance, etc.
- IT configuration is beyond the scope of this class
- Clinical Configuration requires local input into Clinical Reminders, Order sets, Reports, and Clinical Template and other POC help.
- This process is iterative and must be continued after the implementation process.

Data Conversion

- The data conversion from paper to electronic is the cause of the “tail” in the productivity curve.
- It can also dramatically effect cost and productivity losses elsewhere on the curve.
- Until the data is in the EHR, every patient is like a “New Patient Visit”

Data Conversion Pearls

- Scanned data is not a substitute for actual data entry.
Disadvantages:
 - Cannot be retrieved in reports
 - It is hard to access— most providers ignore it
 - It takes up a lot of space on the servers (\$\$)
 - Often the quality also makes it difficult to read
 - It is slow to access
- Scanned data should be limited to a few progress notes, labs and reports.
- Generally, don't scan data that is going to be entered as data.

Data Conversion Pearls

- Start about 3 months before go-live
 - Earlier starts may result in “older data” and providers will need to take longer to review the charts (see below)
- Use a strict “protocol”
- Develop an 80-20 template, if possible
- Quality Management must oversee the process and there must be a quality check on the data
- Start with Chronic Disease Patients First

Data Entry Pearls

- Data over one year is usually not clinically useful
- Data that will be re-posted quarterly or more often is usually not useful
- For disease management and preventative care, it is useful to add recent historical data.
- If you are using a registry with “double entry” and want to convert to an EHR, consider early “double entry” to the EHR.

Data Entry Pearls

- Train a local team early if possible, so they can do data entry during “down times”
- Use data entry to help staff become familiar with the EHR, but this is not substitute for proper training or a proper data extraction team
- Med lists are troublesome. They are often inaccurate and illegible.
- Thin charts before starting if possible
- Stamp charts with pre and post visit data entry

Data Entry Pearls

- Pull the chart for the first visit, then retire the chart
- The provider should review the chart at the first visit and mark the paper chart for any additional data entry or scanning needed
- Medical records then does the post visit data entry and marks it complete in the computer and on the chart.

The Implementation Week

- General:
 - Don't schedule "go-live" near critical holidays
 - Don't allow vacations during the 4 weeks before and 4 weeks after the implementation week
 - Reduce the schedule to 50% of normal
 - Have a triage plan for your overflow
 - Have all the IT hardware in place and tested
 - Have ergonomic setups and make sure the staff is using it
 - Have "petty cash" for lunches, minor computer equipment, etc.

Implementation Week

- Have plenty of on site experts: at least one person per back office team, front office help, a high level trainer, and medical records help.
- Have an IT expert on site the first 2 days
- Start on a Friday if possible
- Consider holding training session over the week end for stragglers
- QM should be assisting the Office Manager in oversight

Implementation Week

- The first morning meet for one hour, then hold 15-20 minute huddles every morning of “go-live” week
- Debrief during lunch every day of go-live
- Hybrid processes are used during the transition period. If providers are not weaned from these quickly, they will contribute to chronic poor productivity
- QM should monitor cycle times of Labs, Referrals, Med refills, etc on a daily basis

Implementation Week

- Productivity is not a concern during “go-live” week
- Teach standard methods first and “shortcuts second”
- Hold productivity incentives (we use an average of the previous 3 months)
- Production incentive freezes should have a known expiration date

Post Implementation Week Quality Considerations

- Hybrid tracking of quality through the transition period
- Supervisor training for the post implementation period
- From project management to continuous quality improvement
- Reporting quality from the EHR
- Panels, Patient teams and Provider Quality Incentives

Post Implementation Quality Considerations

- Leave an expert behind in week two
- Revisit in 6 weeks, 3 months and six months
- Quality Management needs to verify the supervisors can run the reports and understand the new workflow.
- Record Lesson Learned
- Hand out pre and post implementation surveys to staff and patients.

Post Implementation Productivity Considerations

- The expert left behind and QM examines processes for efficiencies
- Brown Bag lunches and short cut cheat sheets
- Utilize staff feedback to improve configuration and processes.
- Implement a “bug reporting process” and make sure it is responsive
- Create POC “toolkits”
- Monitor “The Tail”

Post Implementation Productivity Considerations

- A four week tail is our goal
- Make sure the EHR is accessible from home
- Bring in a “Clinical Champion” to teach efficient EHR use, including “home prep”.
- Consider a “transition bonus” after baseline productivity is established
- Consider “super MAs”, midlevel-physician teams, re-structured incentives (based upon quality, panel size and total team and/or site productivity).