Open Source Performance Improvement, Safety and Quality
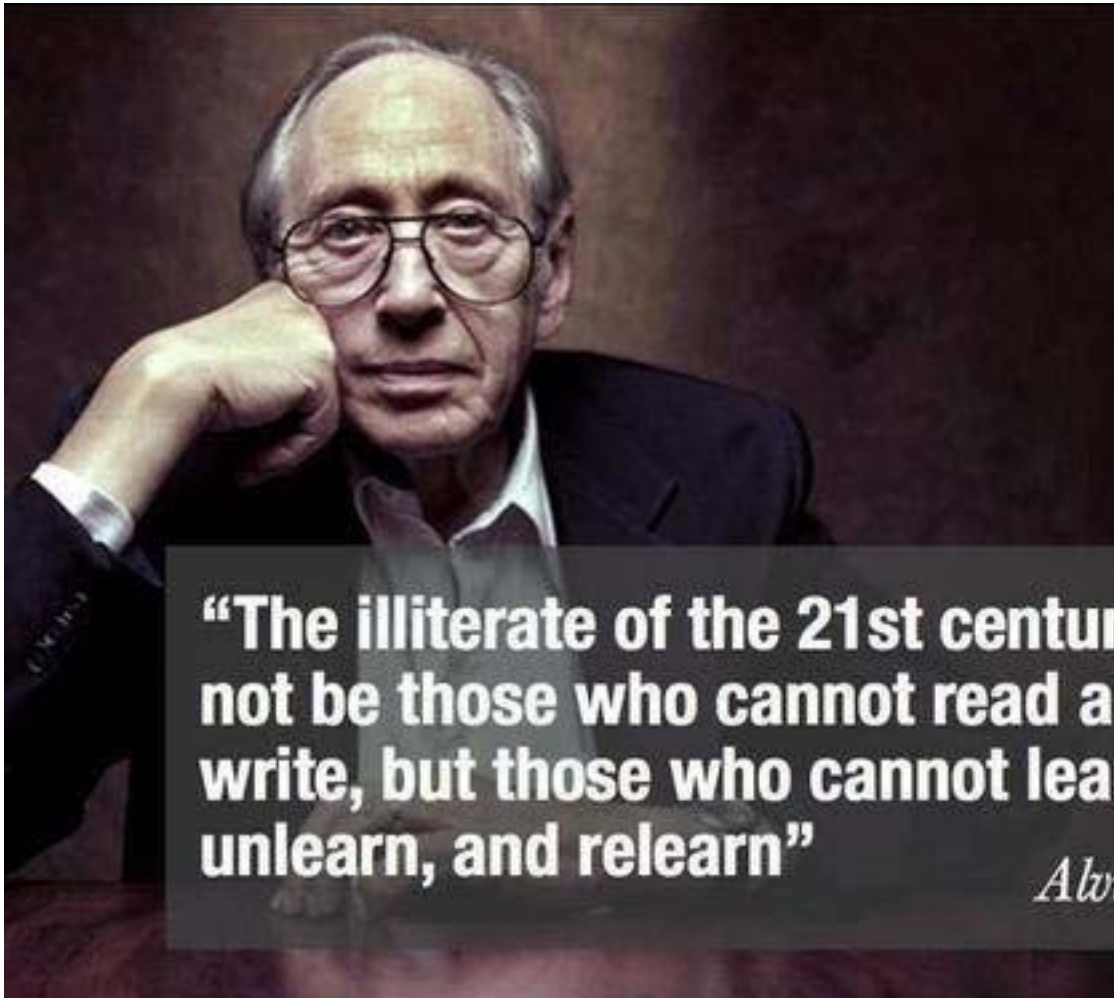
William Dailey, MD, MSEng, MSMI

Diplomate Clinical Informatics of American Board of Preventative Medicine

Diplomate American Board of Family Medicine

CMIO/CMO

Golden Valley Memorial Healthcare

Clinton, MO

Transitions

Progress

"You've got to think about big things while you're doing small things, so that all the small things go in the right direction."

- Alvin Toffler

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn"

Alvin Toffler

Me

The Scene

- 50 bed non-profit hospital with 4 clinics

- Multispecialty hospital-based practice

- Meditech since April 2004

- C/S 5.67

- Gradual and voluntary uptake from physicians

- 3 Clinical IT staff, engaged Pharmacy and Nursing

- PCMH 3 at all locations

- Rural Health for primary care

Golden Valley Memorial
HEALTHCARE

Why Open Source?

- Value

- Flexibility

- Focus and clarity

- Leveraging other work

- Personal Knowledge of systems

Current Projects

- Alignment regarding clinical variation and improving quality and safety

- Physician Driven performance improvement program (P4P)/transparency

- Capture Data from EMR and archive performance data

- Numerous Hospital Initiatives: Sepsis, Provation order sets, anticoagulant safety, readmissions, verbal and telephone order minimization and authentication, secure messaging, CPOE, Order signing, CDI, AR reduction, clinically relevant data mining

- EMR selection moving forward

- Outpatient expansion ($40 million), New clinic ($5 million)

Architecture

Email/TXT/file Notifications

Ubuntu Server
CRON

Python

MySQL

MSSQL - IP

MSSQL - OP
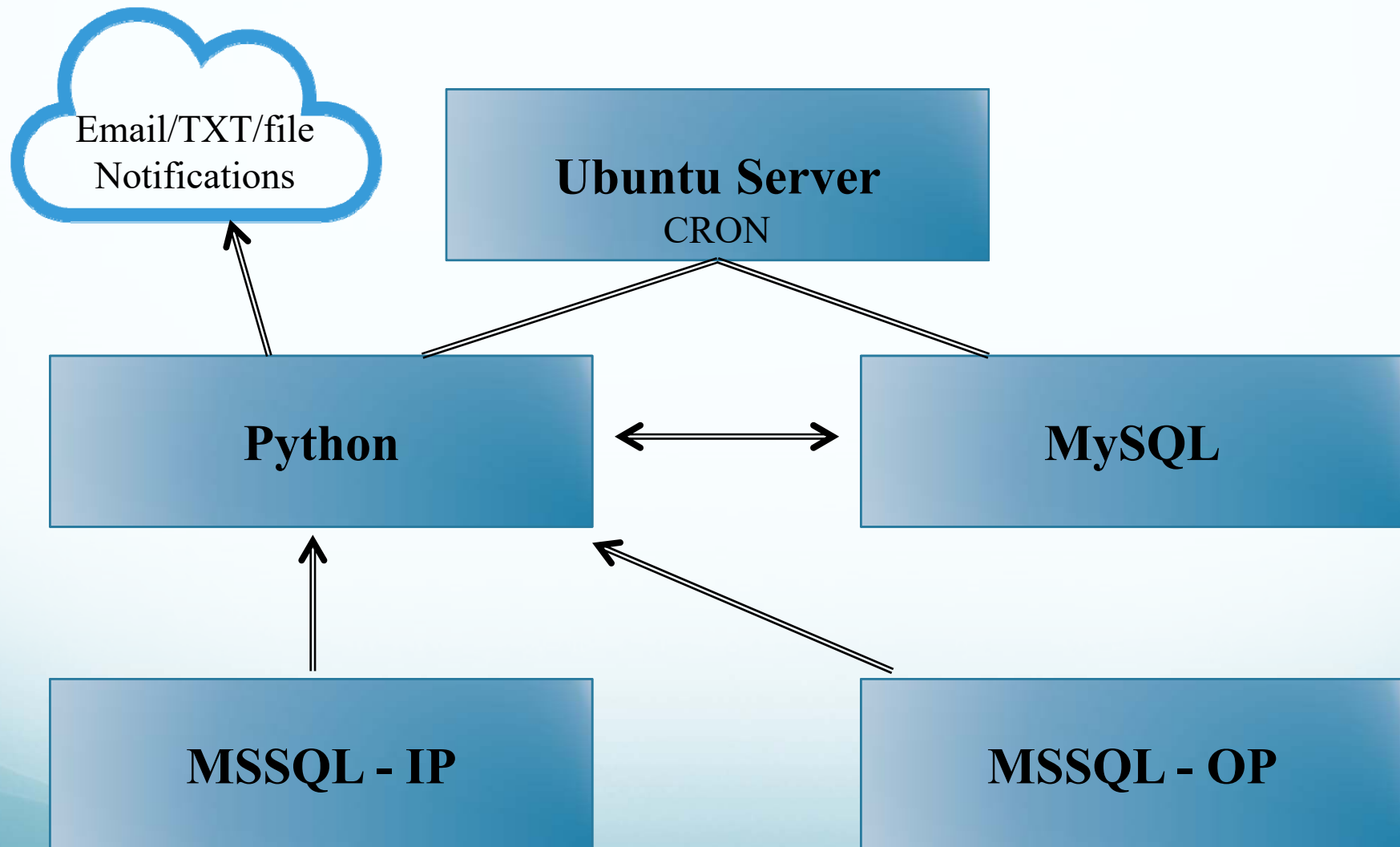
Why Python?

- Minimal Braces

- Easy to Learn

- Powerful (but not speedy like C)

- Scripting (fast for prototyping)

- Reusable

- Modular

- Libraries Galore

Text or email

```
from clickatell.http import Http

clickatell =Http('docdailey', 'password','341290')

response = clickatell.sendMessage(['1'+form['Num'].value],
form['Msg'].value)


from localsend import send_email

send_email(destination,subject,content)
```

Curly Braces Problem

```
diabetics_eye_exam_plus_questionsV2.sql     historystore.pyc
diabetics_NCQA_providerV6.sql               influenza_gt_65_immun_da.sql
Education_all_providers.sql                 influenza_gt_65_immun.sql
getandstore.py                              lipidpanel_params_pct.sql
getandstore.pyc                             localsend.py
good_queries                                localsend.pyc
historystore.py                             mammograms_40_69_params_pct.sql
```

Samples

FY 2015 Performance Indicators
William Dailey, MD, MS

Golden Valley Memorial HEALTHCARE

1   **Diabetes Management: HbA1c Poor Control**
My Performance: 14%   Target: <= 16%   MET

Patient age 18-75 with diagnosis of DM documented in IC Chart. A1C has not been completed in the last 12 month period or is > 9%

2   **Breast Cancer Screening**
My Performance: 97.0%   Target: >= 60.0%   MET

% of women aged 40-69 who had a mammogram to screen for breast ca

3   **CGCAHPS - Doctor Communication**
My Performance: 99.0%   Target: >= 70.0%   MET

This is the Doctor Communication percentile provider rating patients give through the CGCAHPS survey where they rate the provider a 9 or 10 which is considered top box. The provider will have the choice of using the Apr-Sep or the Oct ? Mar final results

4   **Colorectal Cancer Screening**
My Performance: 55.0%   Target: >= 55.0%   MET

% of patients aged 50-75 who have had screening for colorectal cancer

5   **Diabetes Management: Annual eye exam performed**
My Performance: 41.0%   Target: >= 50.0%   NOT MET

Patient age 18-75 with diagnosis of DM documented in IC Chart. Proportion of patients that have had a dilated eye exam completed in the last 12 months as captured by a scanned report in clinical info, an internal record created by a GVMH eye physician or
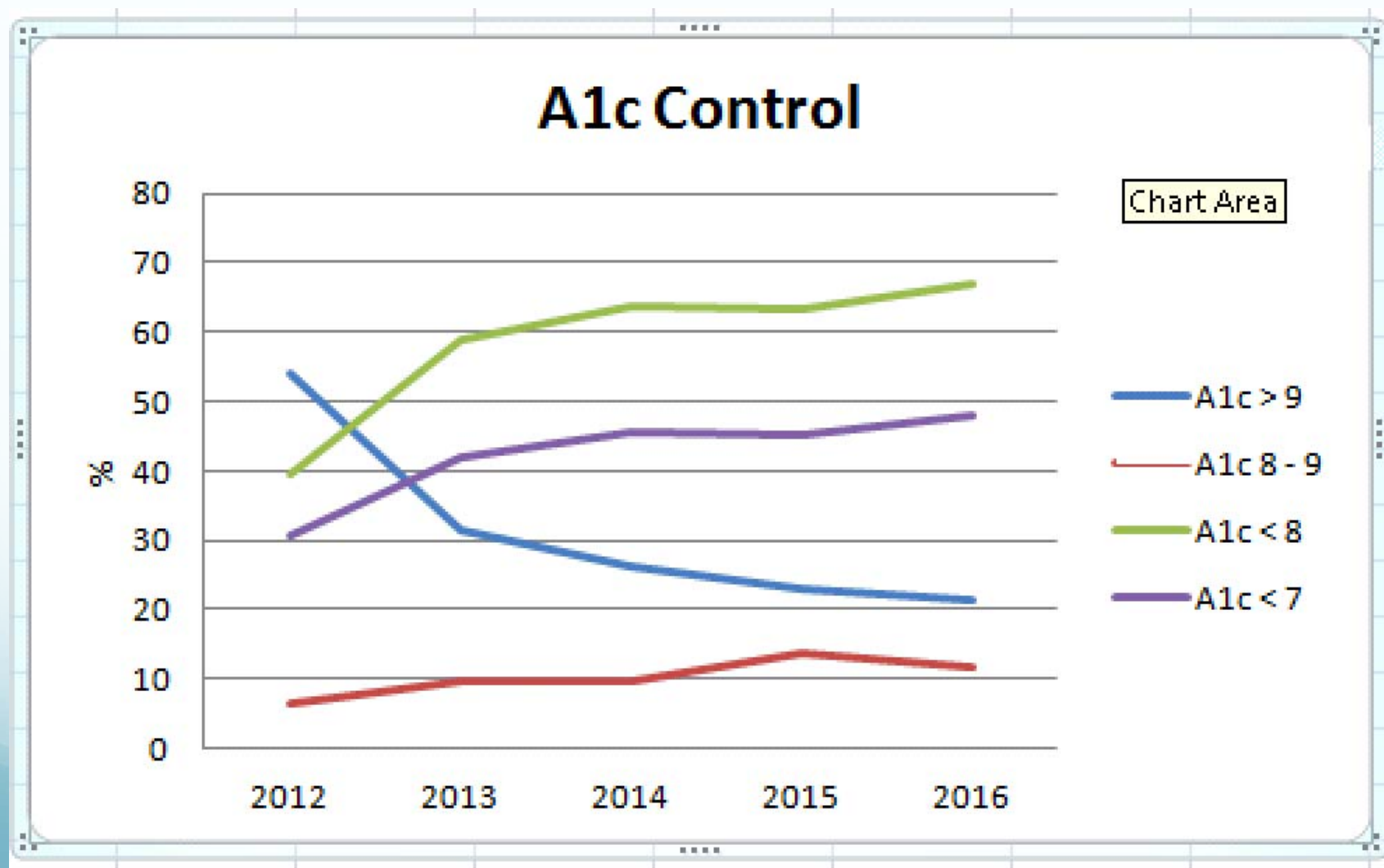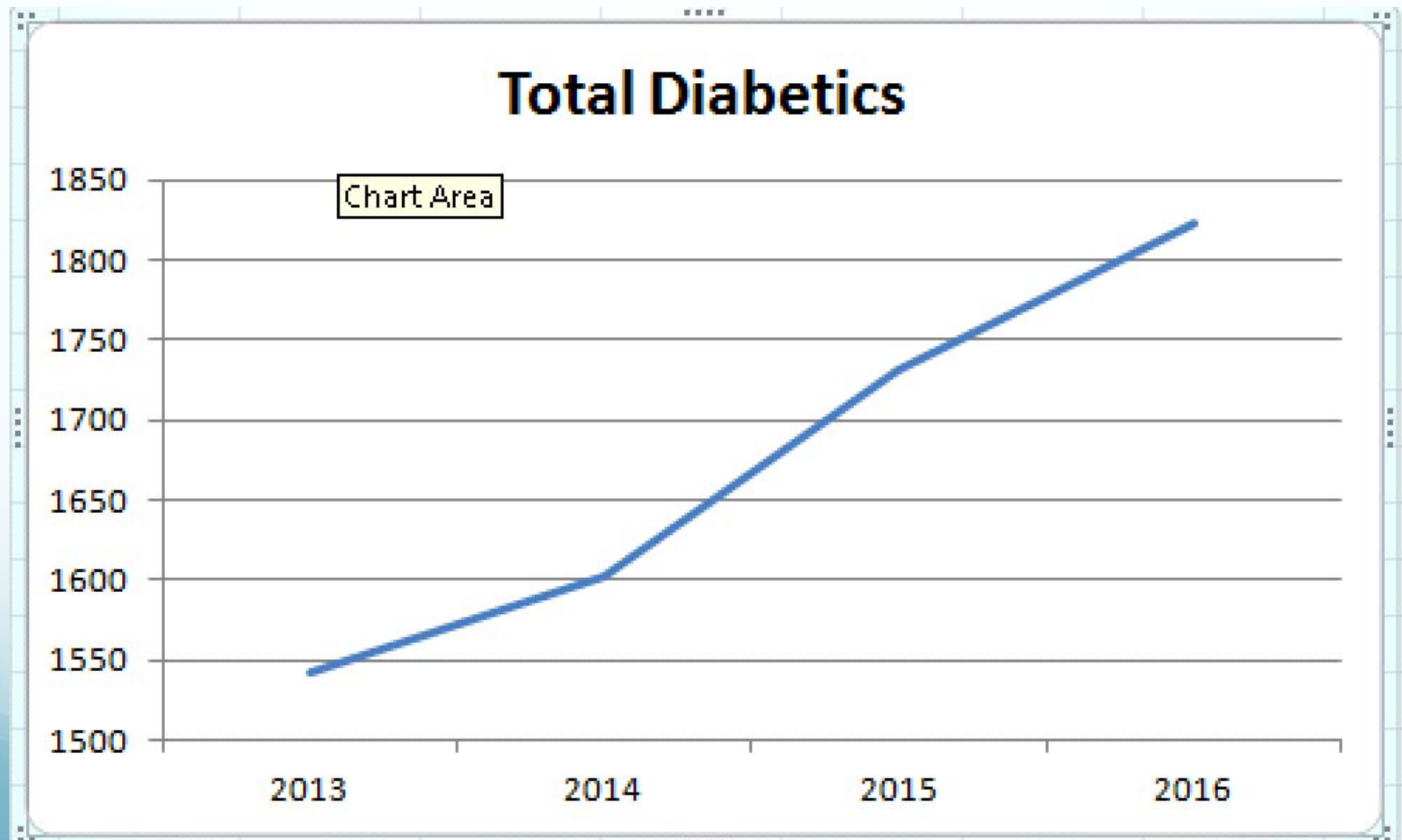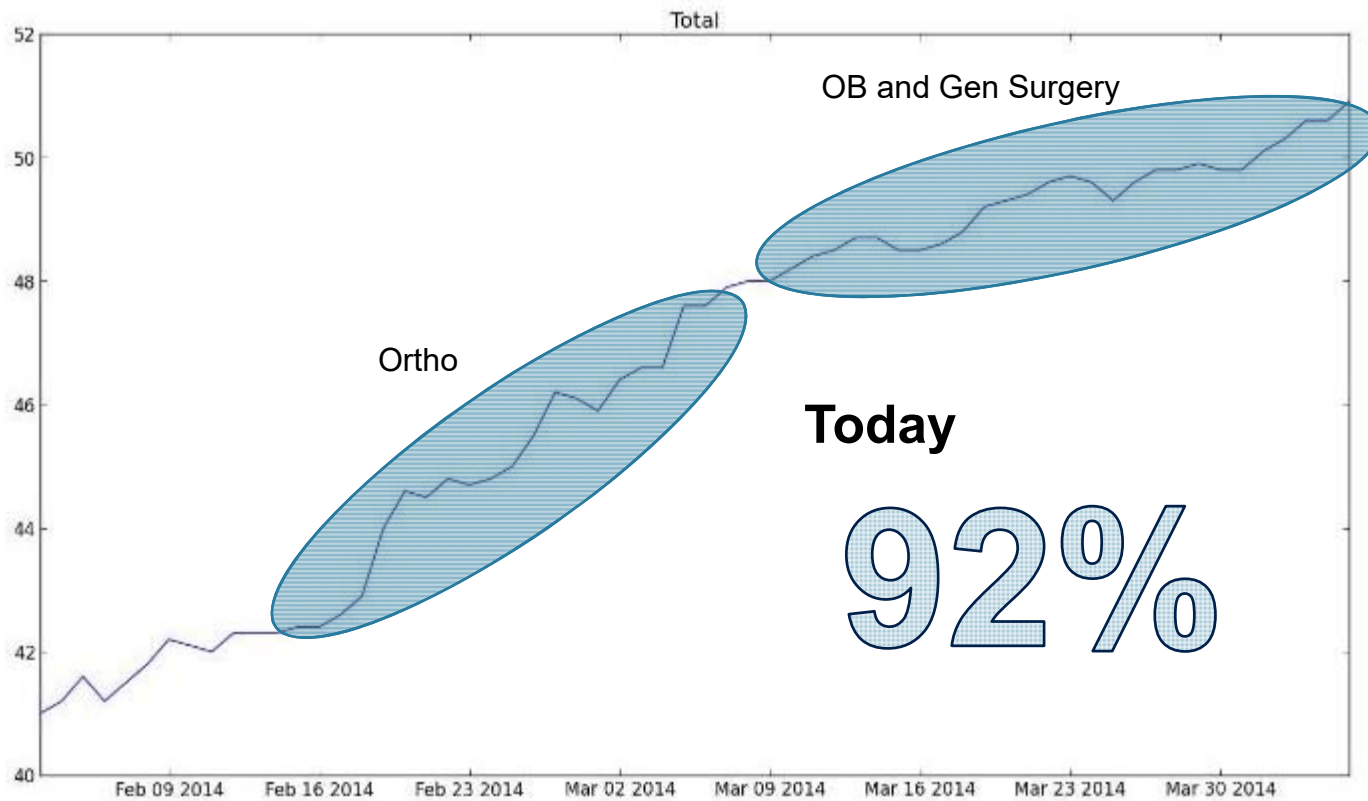
Daily Huddle

memorial HEALTHCARE

				Diabetes								CAD		Dep		Vax		Screening				
Patient	Time	Age	Type	HbA1c Date	HbA1c-Last	uAlbumen Date	uAlbumen-Last	Eye Exam Date	Foot Exam Date	B/P Date	B/P-Last	LDL Date	LDL-Last	Last Screen	Last Result	FluVax	Prevnar-13	Pneumovax	Mammogram	Colonoscopy	Colon Source	Portal Status	Notes
	08:30		Follow Up							01/28/2016	134/100	01/26/2016	147			10/01/2015			04/21/2015	10/29/2013			
6 month follow up thyroid and lab results																							TSH 2.9 01/26/2016
DM **HTN** COPD CHF Dep CAD																							
	08:45		Office Visit	01/26/2016	6.5	06/24/2015	30		05/14/2015	01/28/2016	122/80	01/26/2016	106			11/04/2014				01/25/2011			
3 month follow up																							
DM **HTN** COPD CHF Dep CAD																							
	09:00		Office Visit	12/30/2014	5.1					07/23/2015	110/60	07/23/2015	85								05/26/2015		
6 month f/u on bp and lab results																							
DM **HTN** COPD CHF Dep CAD																							
	09:30		Follow Up							01/11/2016	132/90	**07/08/2014**	77							03/06/2013			
6 month follow up and lab results																							
DM **HTN** COPD CHF Dep CAD																							
	09:45		Follow Up							01/28/2016	138/80	01/28/2016	129			09/23/2014			12/22/2015	07/23/2014		08/06/2015	
4 month f/u on htn and lab results																							
DM **HTN** COPD CHF Dep CAD																							
	10:30		Office Visit	01/25/2016	6.2			**04/02/2014**		01/28/2016	122/80	01/25/2016	89			10/06/2015	09/25/2009		10/05/2015	12/22/2011			
CT chest results and lab results																							
DM HTN **COPD** CHF Dep CAD																							
	10:45		Office Visit	01/28/2016	6.7	06/24/2015	10	**07/15/2014**	01/28/2016	01/28/2016	130/56	01/28/2016	132			10/06/2015						05/15/2015	
3 month follow up with lab																							
DM **HTN** COPD CHF Dep CAD																							
	11:00		Office Visit																				

Results

First Coumadin dose after INR resulted

Results

Despite

Med CPOE

Questions?