



Recipe for the Successful Implementation of an Ambulatory Electronic Health Record

Larry Garber M.D., Medical Director for Informatics
Fallon Clinic/SAFEHealth.org

Imagine the Future

MD Gets a Problem Call on Weekend From Another MD's Patient

- Can see all of their Past Medical History
- Can see 15 years of test and treatment results
- Can see their allergies and current medications
- Can see that patient isn't a drug-seeker
- Can appropriately treat another physician's patient as if the covering MD had been caring for that patient for the past 15 years

All of this because of a shared Electronic Health Record (EHR)

Annual Physical on a Patient

- Can see that a Pap Smear and Mammogram were recently done by a gynecologist that works in a separate practice across town
- Can see that a tetanus booster was given last year in an Emergency Room in Florida
- Can see patient has been non-compliant with taking her meds based on refill dates
- All of this information appears automatically in the Primary Care Physician's (PCP's) EHR

All because of Payer Claims Data being fed into the PCP's EHR

Office Visit on a Patient After a CABG

- Can see the ER note, the Operative Report, and the D/C Summary with treatment plans
- Can see that the Past Surgical History was automatically updated with the CABG
- Can see the echocardiogram report that wasn't available at the time of discharge
- Can see the notes from the Visiting Nurses
- Can refill the cholesterol medication started in the hospital with one click of the mouse
- Can know everything that's happening to a patient simply by looking in the MD's EHR

All because of a Health Information Exchange (HIE)

Patient is Watching TV at Night

- A patient sees a story on TV about someone with the same symptoms that she has
- She goes to her PCP's website to learn more about the disease that the patient on TV had
- She looks up her own test results online
- She doesn't understand one of the tests so she clicks on it to get more information
- Then at 1AM she sends her PCP a secure email

All because her PCP's practice has a tethered Personal Health Record (PHR) integrated with patient-friendly clinical references

Physician Reviews Quality Reports

- Can see the percent of diabetics who have had HbA1Cs done in the past 6 months
- Can compare this rate to those of colleagues as well as competing organizations
- Can identify those patients that are overdue

All because the EHR submits data to a Quality Data Center for analyses

**This is a bold and
wonderful vision of the
future for all healthcare
providers and patients**

**This has also been the
experience of patients
and physicians practicing
at the Fallon Clinic for the
past 2 years**

The Fallon Clinic

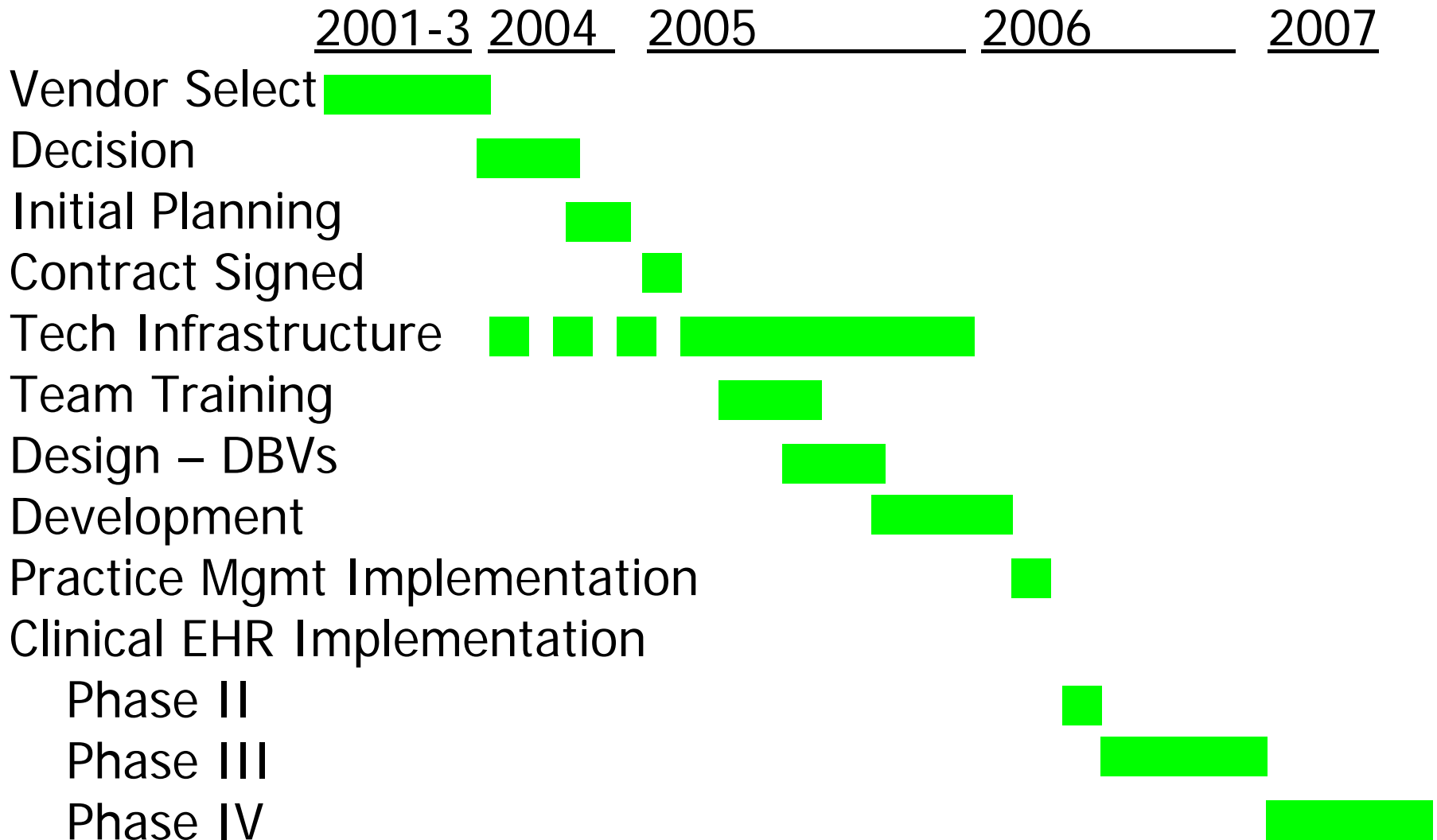
- 300+ provider multi-specialty group practice
- 30 specialties, including Occ Med & Behav Med
- 23 sites in central Massachusetts
- 200,000 patients with over 1 Million visits/year
- Not-for-profit
- At financial risk for 70% of our patients
- Not affiliated with any hospitals
- We are **not** Fallon Ambulance
- We are **not** FCHP



FallonClinic™

Treating you well.™

Our 7-Year Journey:



Recipe for a Successful EHR Project

- Early establishment of champions
- Selection of the right software, hardware and vendors
- Exceptional project leadership
- Minimal disruption at the sites
- Effective training and support
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- Alignment of incentives
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Early establishment of champions

- Identify, fund and train physician and nurse champions
- Involve as many people as practical during each step, from the very inception of the project
- Determine need for EHR at all levels of organization
 - 17 site meeting with >half of MD's + staff
 - 7 Town Meetings attended by 25% of organization
 - Management team (COO/CIO/CMIO/Finance/etc...) enumerated benefits

Expected Financial Benefits of EHR

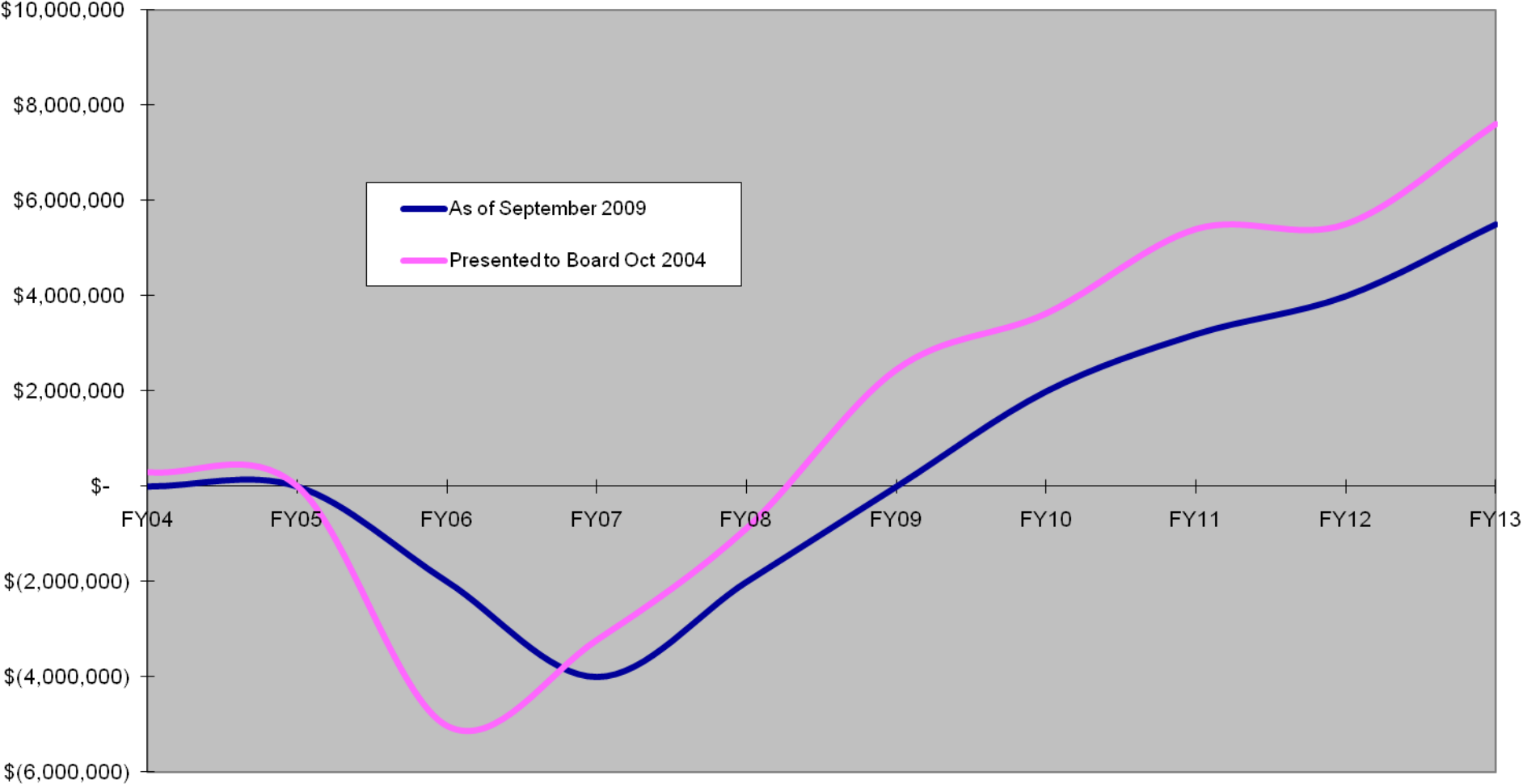
Result of Epic EHR	Financial benefit
Increased use of note generator tools	Reducing transcription costs 75%
Minimize use of paper charts and the associated chart pulling and filing tasks	Reducing medical record staff 72%
Increased patient safety and reduced clinical risk	Reduce malpractice premiums 5%
Elimination of current IBM mainframe computer	IT savings
Increase in online charge entry by providers	Reducing charge entry staff 60%

Expected Financial Benefits of EHR

Result of Epic EHR	Financial benefit
Increased office and facility charge capture	Recapturing 21% of missing charges
Reduced payment write-offs from denied claims	Recapturing 27% of written-off claims
Reduction in paper forms	Eliminating on average 2.5 forms/visit
Reduced copying and faxing	Copying and faxing supply costs
Eliminating new and repaired charts	New chart costs
10 –Year Total	\$63.7 Million

EHR Total Cost and Benefit

EMR-Specific Annual Profit/(Loss) Including Benefits



Early establishment of champions

- Select EHR vendor using all levels of organization (HITEC and ACE)
 - Diverse team of MD's + staff
 - Management team
 - Senior management and Board approval
- Focused campaign to engage Board members and all of Medical Leadership.
 - 1 on 1 and group meetings with ALL key leaders

Early establishment of champions

- Identify “Superusers” for each job type
 - Providers
 - Nurses
 - MAs
 - Check-in/check-out staff
- Involve managers and “real users” from a broad array of practice settings and specialties during “design” sessions

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EMR vendor selection process

- RFP with 140 functional requirements
- RFP was sent to 5 EMR market leaders
- RFP's were scored and 3 finalists were selected
- The 3 finalists demoed their products to ACE committee and finalists were narrowed to Epic and another vendor
- Site visits, User Group meetings, reference checks, KLAS, ROI analysis, technical and financial due diligence were performed on finalists

Don't be Penny Wise & Pound Foolish

- 80-85% of an EMR project cost is fixed, largely independent of your software vendor
 - PC Workstations, Servers, Networks
 - Database licenses
 - Other systems (e.g. Document Imaging)
 - Interfaces/mapping/vocabularies
 - Workflow analysis and system/template build
 - Training/Support
 - Drop in productivity/revenue
- Cheapest to most expensive EMR vendor will only change total cost by 5-10%

Ergonomic Exam rooms



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Exceptional Project Leadership

- “C” level ownership, especially CEO, CMO, COO, CFO, CIO, and Medical Director for Informatics (CMIO)
- Steering Committee – active ownership from operations, clinical and finance
- MD committee – PCP’s and specialists actively involved in decisions
- Financial management, budget and benefits
- Issues and decision escalation process, alternatives with pros and cons

Exceptional Project Leadership

- Project Team with clear roles, leadership, and Project Management support
- Hands on Project Director, relationships with Operations
- Strong team members (recruit the best, external and internal)
- Physician and Nurse Champions active members of implementation team
- EHR certification of implementation team
- 65 MD content experts to help with build

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Minimal Disruption at the Sites

- Phased implementation
 - Maximal increments of change that don't interrupt operations
 - Gives time to become proficient with skills before taking on new tasks at next phase
- Data conversion from the paper chart that doesn't involve physicians or staff at the sites
 - Doesn't take time away from busy MD's and staff
 - No juggling paper and EMR charts in exam room
- Speech recognition software
 - Easiest documentation tool to learn

Phased EHR Implementation

1. Practice Management
(Registration/Scheduling/Billing)
2. Clinical Results Repository
3. Paperless Telephone Messaging and Prescribing
4. Computerized Physician Order Entry/Documentation/Billing in Exam Room

Historical Data Conversion

- Electronic (from legacy repository – QuickChart)
- Manual Abstraction
- Document Imaging (scanning)

QuickChart Database

	# of Years	# of Records
Prescriptions	22	32 Million
Lab	16	30 Million
Imaging	14	2 Million
Notes	14	11 Million
Visits	15	20 Million
Total		95 Million

QuickChart Database (continued)

- Immunizations, Health Maintenance, Disease Management – 15 years
- Allergies – 10 years
- EKGs – 15 years
- Future Lab and Visit appointments – 1 year

QuickChart and EHR Data Sources

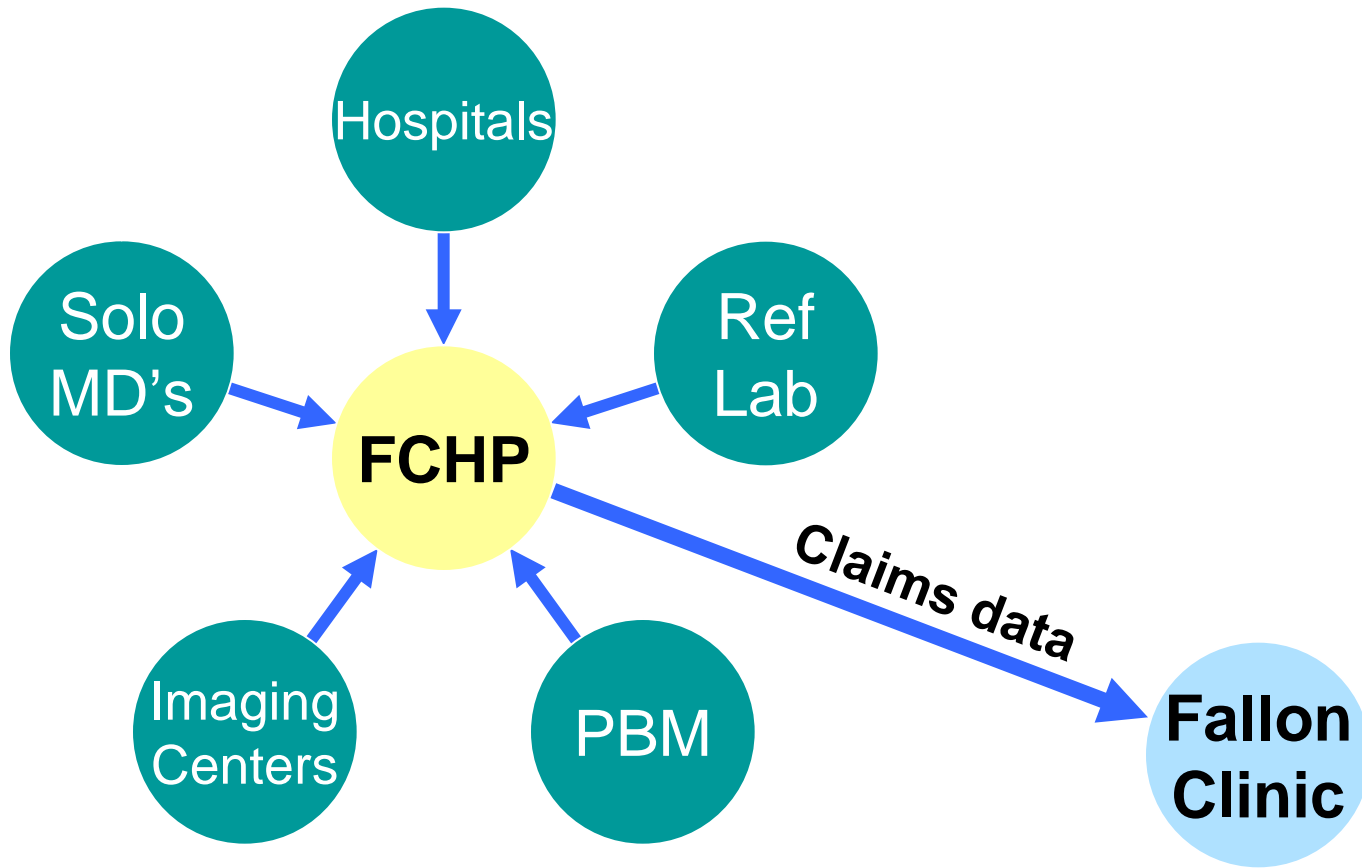
- Fallon Clinic transcribed visit notes
- Fallon Clinic transcribed imaging reports
- Reference lab results
- Inbound interfaces with 5 hospitals (lab, imaging, notes), including SAFEHealth.org

- Health Information Exchange (HIE) currently **Live** in Central Massachusetts
- Patients give “opt-in” consent to exchange clinical data only between specific organizations where patient receives care
- No central clinical repository. Data flows from EMR to EMR.
- Developed with \$1.5 Million AHRQ Grant
- Sustainability is enabled by low operating expenses resulting from internally developed software and no RHIO

QuickChart and EHR Data Sources

- Direct entry into QuickChart (allergies, telephone messages)
- Fallon Clinic billing
- FCHP claims

At-risk claims data fed to clinic



Billing and Claims data

- FCHP Claims → medication list and fill hx
- FCHP and Fallon Clinic claims/billing:
 - Immunizations
 - Health Maintenance Dates (e.g. Mammo, Colonoscopy, CPE, etc...)
 - Disease Management Dates (e.g. HA1c, Retinal Exam, Smoking status, etc...)
 - Past Medical Hx (filtered for chronic & signif. dxs)
 - Past Surgical Hx (filtered for significant procedures)
 - Visit Hx (OV, CPE, Consults, ER, Hospital, SNF, LTC)

Manually Abstracting Paper Chart

- Allergies
- Family History
- Growth chart data
- Problem Lists

Document Imaging (Scanning)

- Multidisciplinary clinical team defined what to scan
- Handwritten notes (e.g. Pediatric CPEs)
- Graphical results (e.g. PFTs, audiograms)
- Outside reports (e.g. consultants, MRIs)
- Indexing is critical for finding in EHR
 - Patient Level (10 types, e.g. Advance Directive)
 - Visit Level (20 types, e.g. Outside consults)
 - Procedure Level (150 types, e.g. MRI of Breast)

Speech Recognition

- Epic's documentation tools are very powerful and useful, however
 - Takes a long time to learn all of the tools
 - Hard to document HPI and Medical Decision Making
- We added Dragon Naturally Speaking Medical
 - Study showed higher quality notes and increased physician satisfaction with documentation & Epic
 - Hybrid notes are most efficient
 - Notes signed in EMR improved 4 days → 45 mins
 - Average increase of 8 minutes/day/MD
 - Saves \$7,000/MD/year

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Effective Training and Support

- Recent college grads → trainers → optimizers
- Mandatory just-in-time training
- Hands-on training, 1 computer per user
- User-specific classes
 - Job class (MD, nurse, MA, checkin/checkout)
 - Specialty
- LEVEL video on exam room computer ↔ physician ↔ patient interactions (with permission of Kaiser Permanente)
- Mandatory dress rehearsal

Effective Training and Support

- Go-live support by trainers for 2 weeks
- All-staff site meetings
- 1-on-1 circle-backs
- Documentation summits
- Optimization team
- Live lunches

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Specialty and User-Specific Tools

- Need to balance user needs with:
 - Bandwidth to build/maintain content for everyone
 - Quality and design consistency standards
- Specialty-specific ordering and documentation tools
- System-wide and specialty preference lists
- User-specific preference lists and some documentation tools (SmartPhrases)

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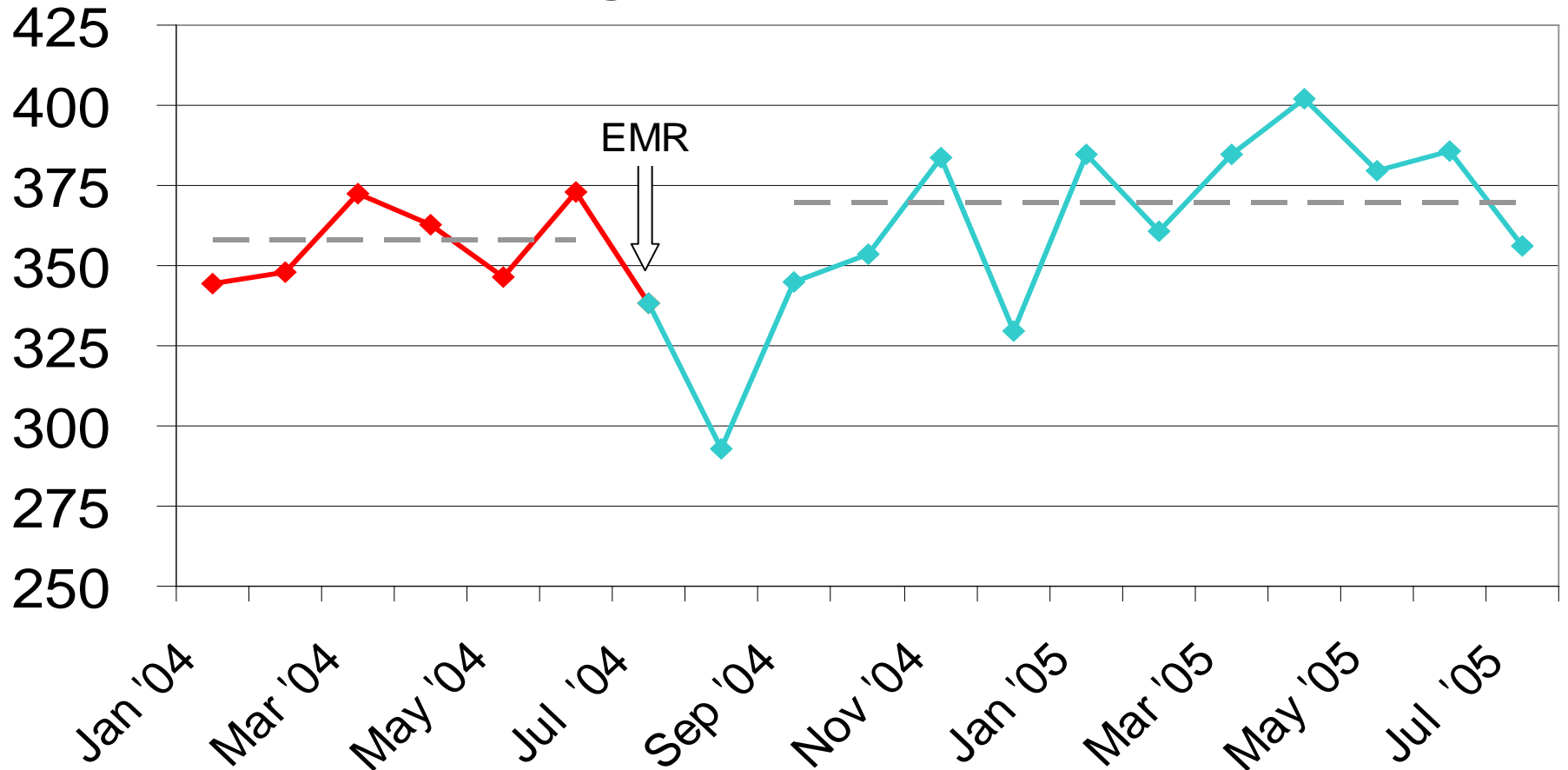
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Alignment of Incentives

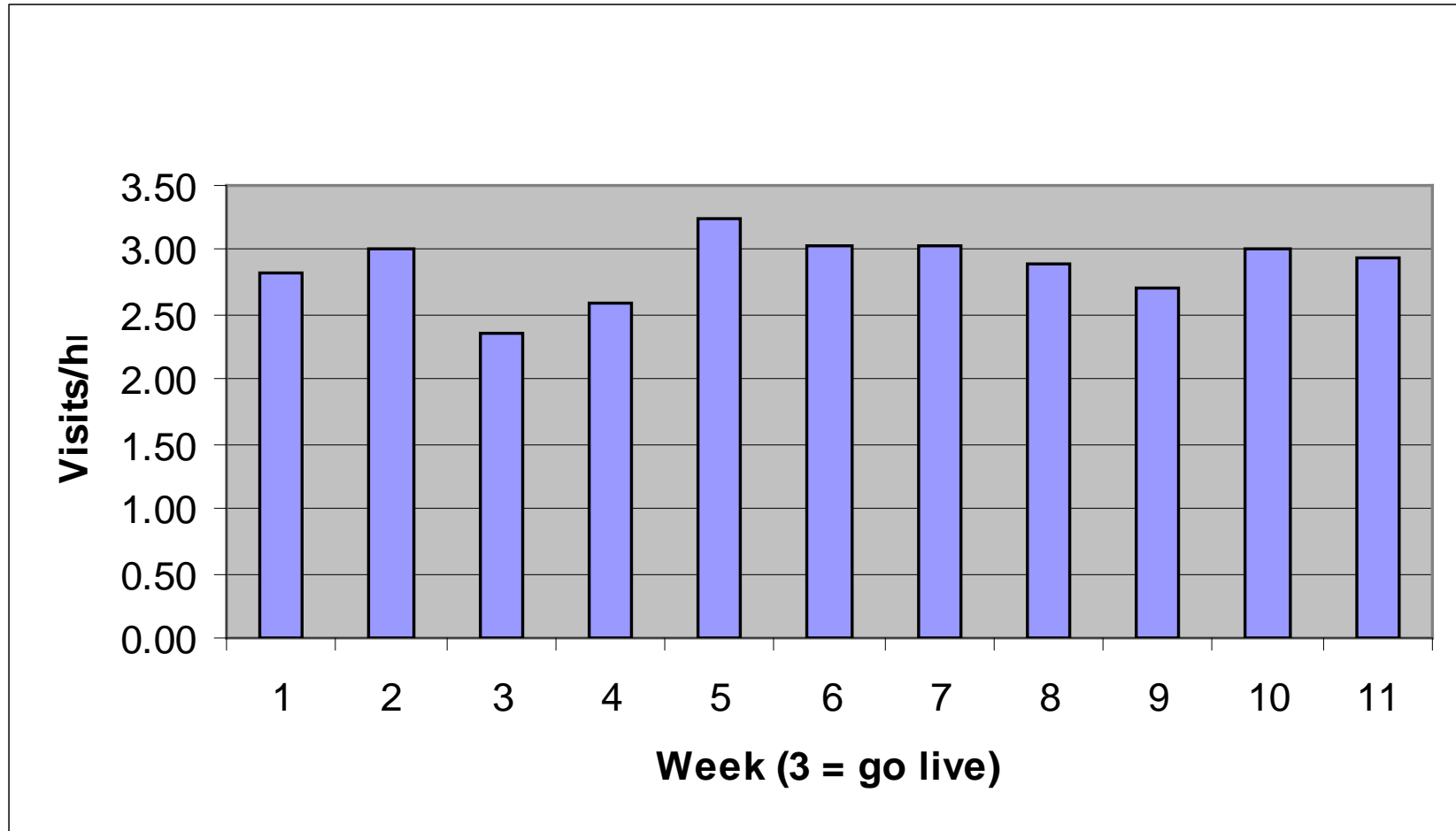
- Food/beverages at all training classes
- CME/CEU credits for all training classes
- MD financial compensation for drop in productivity
 - 50% x 1 week, 25% x 2 weeks
 - 90% of visits completed and billed cleanly within 48 hours, during the fourth month after go-live of final phase

MD Productivity – actual Epic customer data

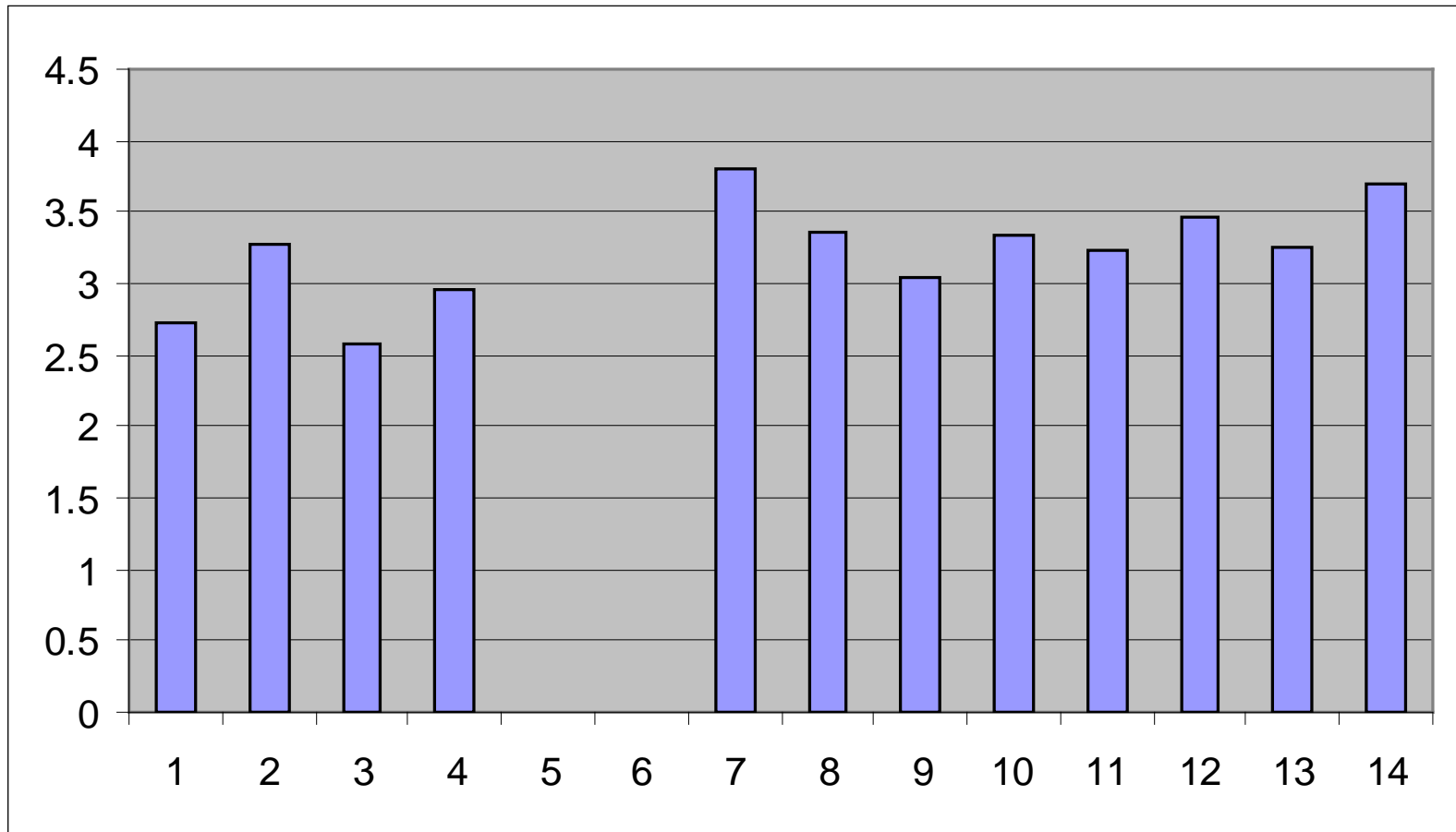
Avg wRVUs per MD



EPIC Productivity – All Sites



EPIC Productivity - One MD



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Extensive Communication

- Many presentations, early and often, with Senior Management involvement
- Monthly Managers Meeting update
- Status reporting, Epic and internal
- Demonstrations – tailored to the audience, repeat, interaction
- All-staff kick off – have some fun, splash

Your **Epic** Journey Begins April 5th!

Are you ready to log into
Hyperspace?



Extensive Communication

- “Newsletters”
 - “Epic Plan-It”, written by business owners for business owners
 - “Tech-Know Tips”, written by MD for MD’s
- Feedback directly through implementation team/trainers and Help Desk
- Surveys
 - Before and after
 - Involve MDs and staff – lets them know that you’re listening

Summary

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**You can
survive and be successful
with your
EHR implementation!**

Questions?

Larry Garber, MD

Lawrence.Garber@FallonClinic.org

