Creating A Governance System for Rules and Alerts

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Paul Kleeberg, MD

Medical Director, CDS

paul@allina.com

Do you want to spend the next hour in this room?

- **Outline:**
  - Background on Allina
  - Evolution of our project
  - Generic intro to rules and alerts
  - What we have learned
  - What we plan to do
  - Audience interaction and sharing experiences

- **Target Audience:**
  - Users in the beginning stages of implementation or those currently struggling with a governance system for Clinical Decision Support

- **This is NOT a technical talk**

Allina Hospitals & Clinics

Allina Hospitals & Clinics map showing the Twin Cities Metro Area with Mercy Hospital, Unity Hospital, United Hospital, Phillips Eye Institute, Abbott Northwestern Hospital, Cambridge Medical Center, Buffalo Hospital, River Falls Area Hospital, St. Francis Regional Medical Ctr, New Ulm Medical Center, and Owatonna Hospital. Legend: Allina Hospital, Allina Ambulatory Care Center, Allina Medical Clinic.

- Largest health system in Minnesota
- Revenue: $3.5 billion gross/ $2 billion net
- Diverse organizational entities
  - 4 metro hospitals
  - 7 regional hospitals (30 to 80 beds)
  - Allina Medical Clinics (AMC) - 42 clinic locations with 700+ employed providers, 23 hospital-based clinics
- 1,700+ staffed beds
- More than 22,500 employees

Current Implementation Statistics

- Implementation complete in 5 hospital facilities
  - 2 regional (New Ulm Medical Center, Buffalo Hospital)
  - 3 metro (Abbott Northwestern, Mercy and Unity Hospitals)
- Practice Management implemented in all clinics (65 total)
- EpicCare Ambulatory implementation to be complete in June 2007.
- Active Excellian users as of September 1 = 12,816
- Patient records as of September 1 = 4,210,000

Our Implementation

- **What we had:**
  - A management team focused on patient safety that made sure we were on time and on budget
  - Teams and DVB's built around the Epic products
    - Pharmacy focused on inpatient and not on ambulatory pharmacy needs
  - An physician team that provided a clinical perspective
    - Focused on workflow
  - Clinical experts focused on order set creation

- **What was missing:**
  - A body in the organization to define System-wide clinical policy

- **What it caused:**
  - A tendency to react to individual needs and lose sight of the big picture
    - Creation of SmartSets
    - Creation of system-wide best-practice evidence-based order sets

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Installing Epic creates challenges and opportunities

- The great magnifier

- Epic forces consistency.

- Leveraging the system requires standards of care

- Having standards eases implementation

- User overload
  – Alert fatigue

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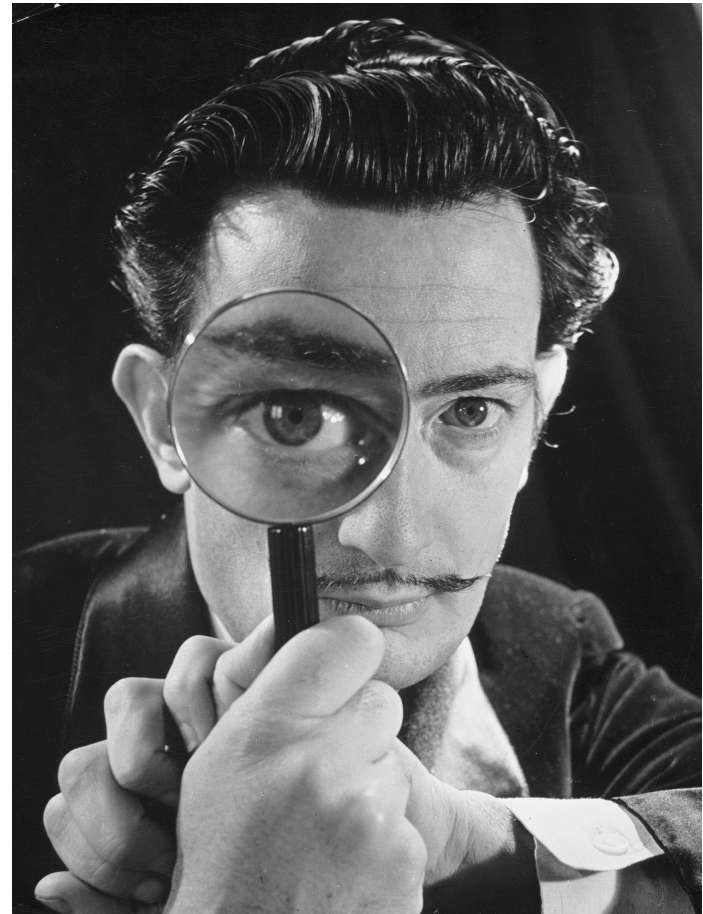
- Rules are the in-the-background intelligence in the system that can guide your behavior by either
    - Limiting your choices
    - Providing you with choices
    - Causing an event to occur
- Alerts are in-your-face events items which are intended to influence your behavior.

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Alerts come in many shapes and sizes

- Stop signs on ordering
- Drug interaction alerts
- Drug disease alerts
- Allergy alerts
- Duplicate medication alerts
- Health maintenance alerts
- Best practice alerts

- Rules and Alerts provide:
  - The greatest opportunity to improve care
  - The greatest risk of impeding care

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Alerts can improve care

- Have been shown to reduce the number of contraindicated drugs in patients with renal insufficiency (Galanter, 2005)

- Increase the rate of pneumococcal vaccination in patients hospitalized for pneumonia (Dexter, 2001)

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Too many alerts are counterproductive

- Well studied
- 90% override rate of drug-allergy and high severity drug interaction alerts (Weingart, 2003)
- Create a strong feelings in the end user (Sittig, 2005)
- Can hide important information
- Can complicate an already steep learning curve

The tendency is to implement systems with many alerts

- Because we can do it.

- Pent up desire to control behavior

- An easy way to fix a problem.

- Fear that something very bad will happen if we do not alert

- Fear that we will be held accountable for not alerting

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- The challenge is striking a balance between company initiatives and day to day work
  - Diabetes care
  - Peripheral Vascular Disease
- This requires a clear focus on your long range plan

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Evaluate the effect - the unintended consequences

- Requiring Allergy checking / documentation before med ordering
  - Sounded like a good thing but created problems with pharmacy refills
- Duplicate medications
  - Created problems with prn meds
- Topical meds interacting with systemic meds

For some alerts, the "what" is clear but the "how" and "who" is not.

- These do not require a clinical council to determine appropriate care
  - Drug interactions
  - Drug <=> lab interactions
  - Duplicate orders
  - Alerts to satisfy core measures
  - Problems with contrast
- But instead a group to oversee workflow
  - Can I still order this in an emergency?
  - Is this the right time and the right person to notify?
  - How disruptive should this alert be?

Some alerts require clinical consensus

- **More challenging when there is no universally agreed upon standard**
  - Frequency of mammograms in women age 40 to 50
  - How often to check a potassium and a creatinine in a patient on anti-hypertensive medications
  - Whether the default refill for anti-diabetic meds should be 6 months

- **Order Sets are a classic example.**
  - Some of the orders in a set are supported by evidence
  - Some are not

- **Implementing Epic made us aware of all the places where we do not have agreed upon standards**

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Our solution was to create specialty specific groups

- Organize specialty groups to define standards of care
  - Pediatrics groups have defined immunizations, inpatient order sets and ambulatory SmartSets
  - Expert groups have helped us define order set content
- Recommendations for disruptive alerts have gone to the physician advisory team

Physician organization

- **Physician Consultants**
  - Certified in Epic

- **Physician Advisory Team**
  - Received advanced training
  - Many were local champions

- **SuperUsers**
  - Users of the system

- **Content Experts**
  - Known for their clinical skills and may not have Epic Training

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The Physician Team

- Physicians trained in Epic build

- Initially involved in tool design and build

- Morphed into a team which are directors of ambulatory, ED or inpatient build and provide leadership for groups of services
  - Surgery
  - Pediatrics
  - OB

- The first stop for opinions on changes which would have a significant impact on the system

- Most are now Epic users

The Physician Advisory Team

- Initially our core group of physician champions
- Created to oversee decisions abut Epic that affected physicians and patients and communicate back to their sites
- Had received training but at first were not users
  - We did not know what we did not know
- Is now a group which approves items which affect physician workflow
- Sometimes get caught in determining policy

Physician Superusers

- Actual users of the system
- Few were champions during implementation
- More are required in ambulatory due to the distribution of clinics
- One meeting of ambulatory SuperUsers
  - Expensive to arrange
- Difficult to organize
  - Requires lots of travel
- Focus on local issues and workflow
- A forum to share ideas and solutions

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Content Experts

- Composed of members from different sites at Allina who are recognized by their peers to be experts in the topic of interest. Among them would be

  - Physicians, staff or salaried, who provide care at an Allina Hospitals and Clinics facility.
  - Pharmacists or pharmaceutical expert for the respective diagnosis, procedure or content area.
  - Clinical Nurse Specialists or Nurse Leader representing nursing professionals with experience in the content area.
  - Ad Hoc experts such as dietitians, CRNAs, respiratory therapists, OT/PT therapists, etc. that are appropriate to include in the review in all or part of the content of the clinical tool.

Nursing

- Heavily represented on the implementation and support teams

- Hospital
  - Underrepresented at a system level
  - No system-wide group at present
  - Well represented within their hospitals
  - Each hospital has its own nursing contract
  - An important member of the team

- Ambulatory
  - Better representation in ambulatory user groups
  - Organized within the Alllima Medical Clinic

The pharmacy team

- **Implementation:**
  - Created to build EpicRx
  - Main focus has been inpatient
  - Well organized and independent
  - Manage most of the medication alerts
  - Can customize whether an alert will fire
  - Ambulatory has not had much attention
- **System**
  - Just beginning to organize
  - Creating a system-wide inpatient formulary

What we have learned

- Focus on your users who traverse environments
  - Patients
  - Physicians
  - Staff

- Hold off on the number of alerts

- The pharmacy team is very important
  - Include ambulatory

- Atempt to bridge silos

- Create a structure to define clinical policy

- Become part of a CDS Community

- **There are several stages in the management of CDS Interventions**
  - Intervention needs assessment
  - Design
  - Development
  - Testing
  - Launch
  - Evaluation

  Improving Outcomes with Clinical Decision Support: An Implementer's Guide

Issues: Who Decides?

- Who decides what issues will be addressed with CDS interventions?

- What is the nature and content of the CDS intervention?

- Who will be responsible for developing, implementing and maintaining the interventions and measuring their effects?

- Developing a CDS program involves shifts in control and stakeholder interactions for
  - Care processes.
    - Medication interventions will change the way the P&T committee, pharmacists, nurses, physicians and patients interact at various stages in the medication management process
  - The build process
    - Implementation vs. Support vs. CDS

- ## Management and Oversight
  - Healthcare organizational Departments
    - Clinical Departments
      - Lab, pharmacy, medicine surgery
    - Organized Medical Staff
    - Interdepartmental Functions
      - Quality, safety, disease management
    - Medical director of Information Systems
  - CDS Oversight / Benefits Realization
  - CxO responsible for structure

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- **Implementation and Project Management**
  - Deploys, develops, monitors CDS interventions
  - CDS:
    - Deploy and maintain knowledge assets
  - IT / Support
    - Deploy and maintain clinical information system

- **End-Users and Related positions**
  - End users - the recipients of the interventions
    - patient, nurse, pharmacist, physician
  - Related staff - generate data for or are affected by the interventions
  - Subject matter experts
  - Clinical thought leaders - help with dissemination and acceptance

Abide by the 10 Commandments of Clinical Decision Support

1. Speed is everything
2. Anticipate needs and deliver in real time
3. Fit into the user's workflow
4. Little things can make a big difference (usability matters)
5. Recognize that physicians will strongly resist stopping
6. Changing direction is easier than stopping
7. Simple interventions work best
8. Ask for additional information only when you really need it
9. Monitor impact, get feedback, and respond
10. Manage and maintain your knowledge-based systems

(Bates 2003)
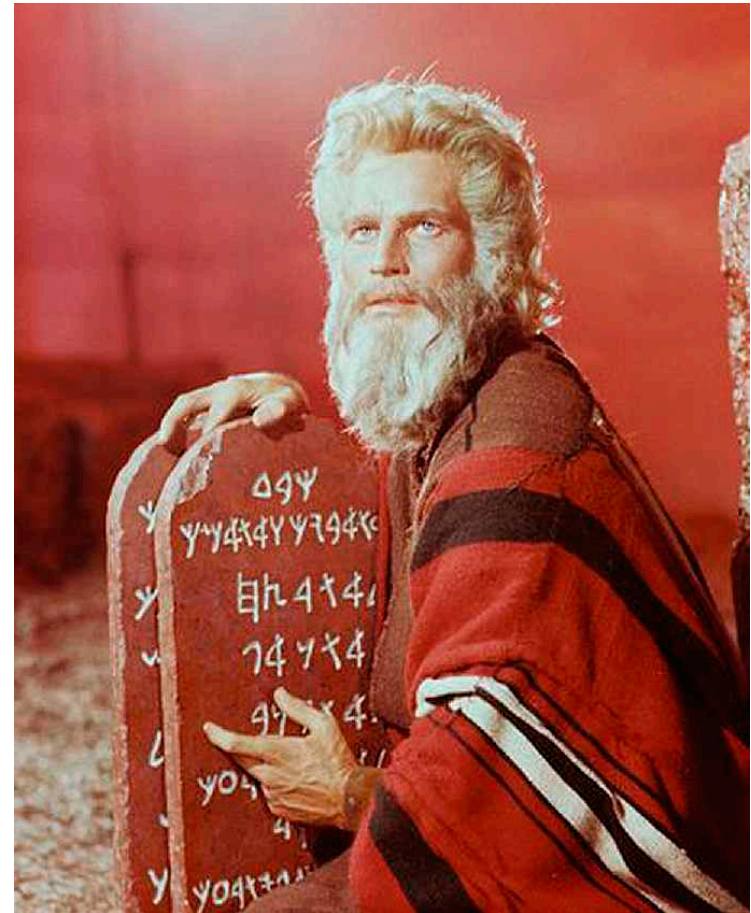
Recommendations for an approach

- Identify a clinical content group

- Separate clinical content from delivery of content

- Have the driver for the care improvement be a group outside of the implementation team

- Create content experts separate from SuperUsers

- Create a department focused on CDS

- Identify a group which can provide continuity across clinical environments

- Improving Outcomes with Clinical Decision Support: An Implementer's Guide
  - Health Information Management and Systems Society (HIMSS)
  - http://www.himss.org/ASP/topics_clinicalDecision.asp
- The Inmates are Running the Asylum: Why High Tech Products Drive Us Crazy and How To Restore The Sanity
  - http://www.cooper.com/content/insights/cooper_books.asp
- A Roadmap for National Action on Clinical Decision Support
  - American Medical Informatics Association (AMIA)
  - http://www.amia.org/inside/initiatives/cds/
- Scottsdale Institute
  - http://www.scottsdaleinstitute.org/
  - Many interesting lectures and starting a discussion group
- User Groups
  - CDS-MNEUG - Minnesota Clinical Decision Support Group of Epic's EMR

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Questions?

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