

How to get an Anesthesia Information Management System (AIMS) that fulfills its promise.

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--An AIMS User--





Goals– Why are you here?

My Role

- Provide assessment tools for ANY AIMS.
- More anesthesia electronic databases means
 - more patient care insights
 - Reduced costs
 - Better care for everyone
- Answer your questions

Your Role—Curiosity

University of Colorado Hospital & UCDenver SOM?

<p>Hospital IT Implementation Expert Maintenance Phase Expert</p>  <p>N. Rogers K. Reese</p>	<p>Director of Periop Services K Halverson-Carpenter</p> 
<p>Nursing IT Team Past J Bowman-Hayes Current : In Transition</p> 	<p>Anesthesia Team L. Jameson- Clinical, K. Bullard - Technical R. Phelps</p> 

I advocate for a searchable anesthesia database!!!

Discussion uses Centricity examples

- **every** example can be done in Centricity
- **probably can be done in any** database product

This discussion is to lead toward universal community solutions

➡ With **Any** database product

Institutional Experience


- Start (9-06)
- Scheduler and Intraop Nurse Charting (1-07)
- Preop/PACU Nurse Chart (2-07)
- Anesthesia (CPA) History and Physical (3-07)

MOVE THE HOSPITAL

- Intraop CPA charting (8-07)
- Continue to modify and add location—always will

BUT

Happily at the 18 months into a semi-Complete CPA install



FACING FACTS



What are the Organization's goals?

Medical Establishment's Goal

Hospital Boards/Consultants demanded an **INTEGRATED** platform.

- "OR+the floor+the clinics = WE

Reasons: **\$\$**

- Better Patient Care = EFFICIENT
- Basic Scheduling, "Stuff" Management
- Compliance -- Insurers, P4P, SCIP
- Practice Assessment
- Billing


Ideal \$\$\$\$\$ just appear!!




The Problem

An electronic record **can** be just piece of paper on a computer monitor.


No different than a PDF file that everyone can see.



Anesthesiology Goals

Have an **useful** patient record

- Patient care improvement
 - Easy to use -- Resident & CRNA & Faculty
 - GIVE BACK -- Inform practitioners about best practices
 - **Assess the results of care initiatives**
- Efficiency in billing
 - Signed, sealed, delivered at end of day
- Provide an Accurate Source for Revenue enhancement (Us, Hospital, Surgeons, Insurers)




The Required Questions and Responses—A Database!!

IS IT A SEARCHABLE DATABASE?

- YES, YES, YES, YES!!! (NO STRINGS ALLOWED)

- What data does it share?
 - Demographics, allergies, medications.
 - BEST: ANYTHING I TELL IT TO!!!!!!!
- What data can you get out?
 - Anything you put in
- How do you get data out?
 - This depends on your organization

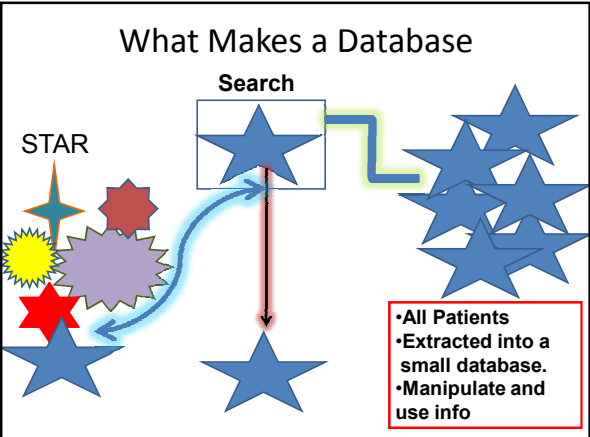


Everything starts with



A USEFUL RECORD


What Makes a Database



•All Patients
•Extracted into a small database.
•Manipulate and use info

Requirements of the real Database

- **Standardized medical language**
 - Use defined Terms and Diagnosis
 - Source: medical dictionary and Google scholar, Pubmed, textbooks, Up-to-Date
 - Work to keep it up-to-date
- **Standardized layout**
 - Must be able to find it to chart it




Easy to use for Staff

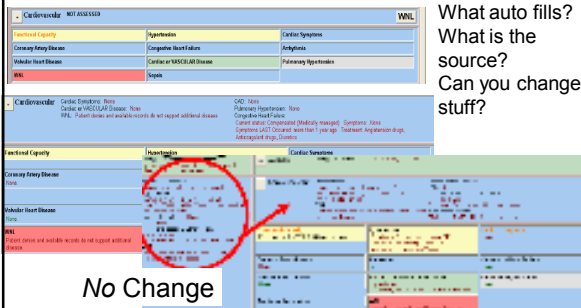
Pick & choose. Automatic Vital Signs.

The Required Questions and Responses – Sharing!

- Does it **share** useful data?
 - YES, yes !!
- Who does it share it with?
 - All same vendor perioperative products
 - Any Patient care or materials management program you own
 - ANYONE WITH AN HL7 INTERFACE **GUARANTEED!!!!**



Fast and Faster-Improve Efficiency Within Normal Limits



What auto fills?
What is the source?
Can you change stuff?

Quality IN Quality OUT



Clinical Guidance

General - ART, FO Intub, CVP,

Fiberoptic intubation-TOPICAL ORAL: After 0.2 mg glycopyrrolate, 5 ml 4% lidocaine with 10 mg phenylephrine administered by mouth piece nebulizer. Additional topical, 5% lidocaine ointment lollipop was used.

BLOCK -Superior Laryngeal Nerve: After skin prep with betadine, 3 ml of 1% lidocaine was injected at the cornu of the hyoid bone using a 25 gu needle. +

BLOCK-Transtracheal: After skin prep with betadine solution, 4 ml of 4% lidocaine was injected through the cricothyroid membrane using a 25 gu IV catheter. +

Fiberoptic intubation-Topical spray: Local anesthetic aerosol was applied to mouth and pharynx. 5% lidocaine ointment lollipop was not used. +


Fiberoptic Intubation-ORAL: 8.0 mm single lumen tracheal tube placed with fiberoptic through an oral airway with ease. 0 ml 4% lidocaine used through scope. Difficult procedure see customized note.

10 L/min O2 administered via fiberoptic scope or nasal cannula

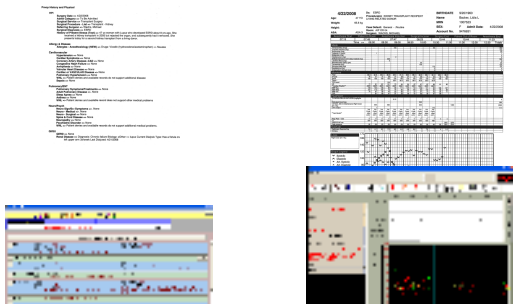
ET CO2 present and equal bilateral breath sounds auscultated.

__ mm __ ET tube taped @ __ cm

- How-to-for Clinical Events
 - Standardize procedure that work for *your* organization
 - Vetted by *your* experts
- Standardized Note
 - Medical legal protection
 - Changes outcome
 - Allows assessment of outcomes



A USEFUL PATIENT RECORD



How does the organization customize content for changing needs and get 100% compliance?

Now let's apply the concepts to the stuff that we've all been waiting for

FINANCE AND GOOD CARE



Program Characteristics: Flexibility Matters!

Right

Organization can


- Change "Content" in 10 minutes to 4 hours

Changing functionality is critical to clinical use and compliance.

Wrong

Vendor must

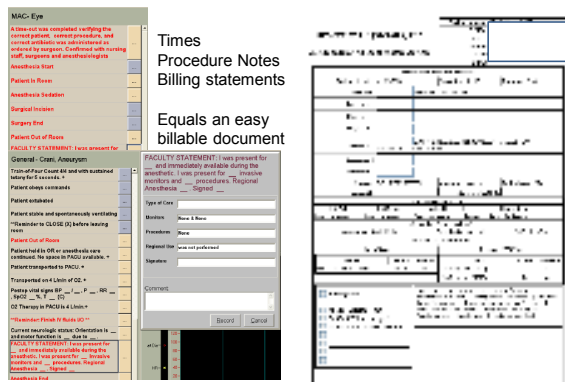
- Make all "Content" changes



Send the bill out!

Times
Procedure Notes
Billing statements

Equals an easy billable document



Program Characteristics

Right

Organization can

- Change "Content" in 10 minutes to 4 hours
- Immediate understanding to enter new data
- New data extraction is easy and immediate
- Display of new information has impact
- Data imports into whatever you want
- Common Database

Wrong

Vendor must

- Make all "Content" changes
- Require extensive training to enter new data
- Data extraction requires specialized reports
- Data display vendor produced
- Data limited to uncommon programs
- Proprietary Database

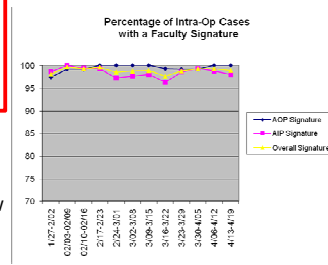
Professional Fee is done!

Billing Requirements

1. Signed day of anesthesia H&P
2. Intraop document with signatures and procedure notes
3. Signed Postop Note

- Previous time to submission 4 weeks.
- Current time -- 48 hours
- Surgical submission now using our data.

Percentage of Intra-Op Cases with a Faculty Signature



ERA of Compliance and Performance Measures



Practices hit Medicare P4P quality targets, but bonuses still fall short

Only four of the 10 physician groups received performance pay, despite a near-perfect record on quality measures.

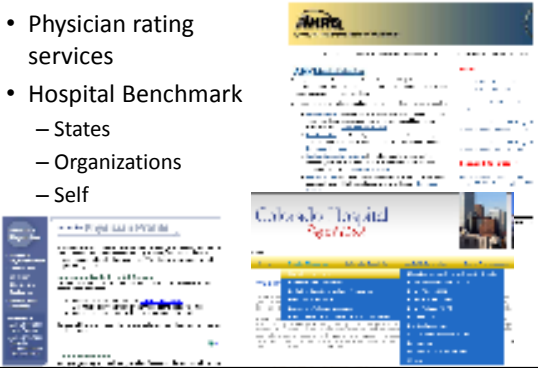
By Tom Ichniowski, a correspondent, Nov. 8, 2008.

Physician Group	Quality Score	Target	Result
Marshfield Clinic	98.5	95.0	Pass
St. Joseph's Hospital	97.5	95.0	Pass
St. Vincent's Hospital	96.5	95.0	Pass
St. Luke's Hospital	95.5	95.0	Pass
St. Elizabeth's Hospital	94.5	95.0	Fail
St. Joseph's Medical Center	93.5	95.0	Fail
St. Vincent's Medical Center	92.5	95.0	Fail
St. Luke's Medical Center	91.5	95.0	Fail
St. Elizabeth's Medical Center	90.5	95.0	Fail
St. Joseph's Medical Center	89.5	95.0	Fail

Even at Marshfield (Wis.) Clinic, which received a nearly \$5.8 million bonus in the project's second year, the costs outweigh the performance pay, said Theodore A. Praxel, MD, the group's medical director of quality improvement and care management.

Assessment is public and everywhere

- Physician rating services
- Hospital Benchmark
 - States
 - Organizations
 - Self



Universal Goal Meeting the Regulations

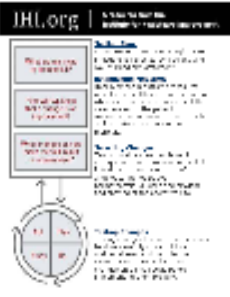
WITHOUT an AIMS Database
Obtaining data is

- Onerous
- Too expensive
- Impossible to obtain

WITH A Database that is

- Configurable
- Extractable

Simple



National Surgical Quality Improvement Program (NSQIP)


The VA's data statistically proved that risk factors are stable and have excellent predictive validity

Source of many SCIP initiatives.

Risk Factor	FY '98	FY '99	FY '00	FY '01	FY '02	FY '03
Serum Albumin	1	1	1	1	2	2
ASA Class	2	2	2	2	1	1
Disseminated Cancer	3	3	3	3	3	3
Emergency Operation	5	5	5	7	4	7
Age	4	6	12	5	-	9
Complexity Score	10	13	14	14	9	6
Weight Loss > 10%	14	10	7	8	5	15
Functional Status	11	8	6	6	-	8

Read the current Anesthesia and Surgical (200+ articles) literature to appreciate importance of this research.

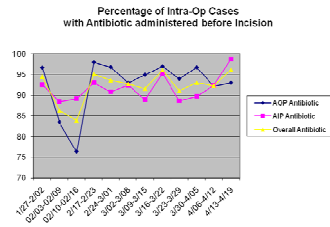
The Right AIMS can make the answer NO PROBLEM!!!



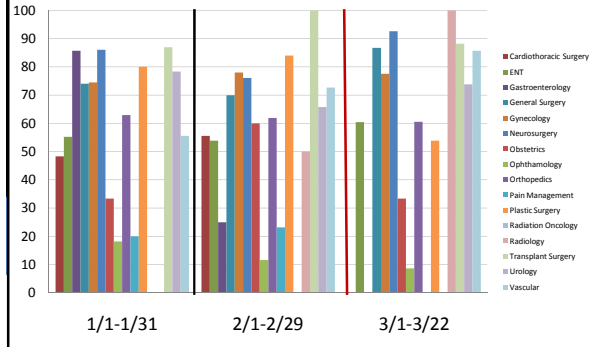
Surgeons/Hospital: Antibiotics

AIMS – Surgical/Hospital Fees

- 5% increase— Medicare
- Private Payers – Increase 5-15%
- Compliance for JCAHO
- Surgical Infection
 - Risk Assessment Tool for 3rd party carriers
 - For patients –suffering, disfigurement, death
 - Financial losses



Percent of Cases with Temperature never below 34



The Case of The Missing Patient

- CMS coming and randomly choose a patient name that the QA group find.
- In 10 minutes found the “missing” person
- Then asked to prove people present
 - That took 15 seconds.
- CMS convinced



Compliance, Compliance

Centricity Reports:

Note: Data for all reports not marked "Reports from Live Data" will be updated daily.

Date Based Reports:
Faculty Statement, Timeout, Antibiotic, & Temperature Compliance
H&P Compliance
Care Temperature
Care Time Comparison
Cases with No Timeout Statement
H & P's with/without Comments
Cases without Anesthesia End
H&P Cases that are not locked
AOP Fast Case end times
Fast Cases On-Time Start Report
Care Start Times Report
Care Start Times
Denice Refine Reports
Cases with No Time QA entered
Time QA Results
Provider Based Reports:
Search for H&P's initiated by a staff member
Search for Intra-op records from a staff member
Search for Intra-op Time totals
Under heavy construction
Antibiotic vs. Timeout Time Cases

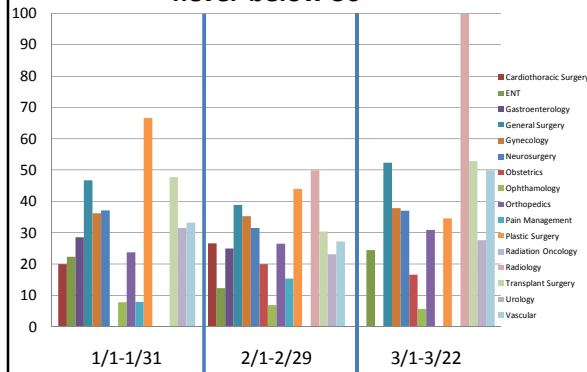
Centricity Crazy Query Reports:

Note: Data for all reports not marked "Reports from Live Data" will be updated daily.

Weekly Reports:
Faculty Statement, Timeout, Antibiotic, & Temperature Compliance
Provider Faculty Statement & Timeout Compliance
Cases with a TIE
Intra-op Block Cases
Intra-op Epinephrine Billing Sheets
All Faculty Statements
Cases without Faculty numbers
Search for a Date Range
Search for a Specific Provider
Cases with Procedure Notes
Ortho Cases Proc Note Times
Cases without Anesthesia End
Cases with Anes Sedation but No Anes End
H&P Cases that are not locked
Visitors & PAT/DMO Cases
Monthly Reports:
Checklist Cases
Timer Cases
Cardiothoracic Care Call Times
Provider Based Reports:
Search for H&P's updated by a staff member
Search for Intra-op records from a staff member

Click here for billing reports

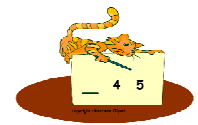
Percent of Cases with Temperature never below 36



Changing Practice: Decision Support, Education and Quality

STANDARDIZING BEST PRACTICE

What's the number before 4?



What "Best Care" standards are in our future?

SCIP-Inf-3h	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time - Vascular Surgery
SCIP-Inf-4	Cardiac Surgery Patients With Controlled 6 A.M. Postoperative Serum Glucose
SCIP-Inf-6	Surgery Patients with Appropriate Hair Removal
SCIP-Inf-7	Colorectal Surgery Patients with Imm
Cardiac	
SCIP-Card-2	Surgery Patients on Beta Blocker The a Beta Blocker During the Perioperat
VTE	
SCIP-VTE-1	Surgery Patients with Recommended Orderd
SCIP-VTE-2	Surgery Patients Who Received Appr Prophylaxis Within 24 Hours Prior to

Pay for Performance

Pay-for-Performance and Anesthesiology Quality Incentive Measures (August 18, 2006)

To make certain that anesthesiology is included in the P4P dialog taking place all across the country, ASA has developed a set of proposed "Quality Incentives" that can be the basis for performance measures. These proposals cover:

- Timely Administration of Antibiotic Prophylaxis
- Perioperative Normothermia
- Comprehensive Planning for Chronic Pain Management
- Prevention of Ventilator Associated Pneumonia
- Prevention of Catheter-Related Bloodstream Infections

Do Procedure Scripts Matter?

CVP Placement-Sterile PREP: Sterile gown/gloves and mask were worn. After a hexachloradine prep, a large sterile drape was placed. A finder needle was used to locate the needle. ULTRASOUND guidance was used.

CVP PLACEMENT- Catheter placed in ____ . Over a guide wire a ____ gauge ____ lumen catheter was placed and sutured at ____ . Blood was aspirated from and crystalloid injected into all lumens. Sterile dressing


- Contains "required" statements
- Based on research

But did it change practice?

Nine MONTHS WITHOUT a Central Line infection in the ICU if the line was placed in the OR.

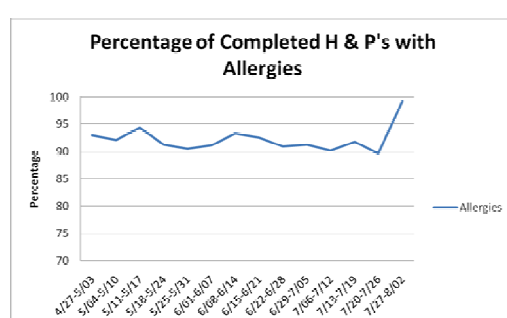
Managing the MOCA Challenge

- MOCA = Maintenance of Certification in Anesthesiology
- Requires a assessment of your practice
 - Elements
 - Select a problem
 - Audit charts to find current practice
 - Learn "best practice" from literature
 - Plan to change practice
 - Document Practice has changed



Improving Compliance through Feedback

Percentage of Completed H & P's with Allergies



Date Range	Percentage
4/27-5/03	92%
5/04-5/10	94%
5/11-5/17	93%
5/18-5/24	91%
5/25-5/31	92%
6/01-6/07	93%
6/08-6/14	91%
6/15-6/21	92%
6/22-6/28	91%
6/29-7/05	90%
7/06-7/12	91%
7/13-7/19	92%
7/20-7/26	94%
7/27-8/02	98%

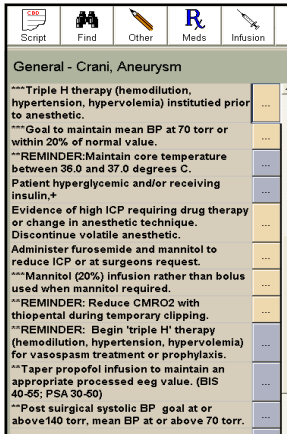
Provide Clinical Guidance

How-to for Clinical Events

- Standardize procedure that work for *your* organization
- Vetted by *your* experts

Standardized Note (Best Practice)

- Medical legal protection
- Changes outcome
- Allows assessment of outcomes




Inquiry to fit your needs

Centricity Reports:

- Date Based Reports: Facility Statement, General, Antibiotic, & Temperature Compliance; H&P Compliance; Case Temperatures; Case Time Comparison; Cases with No Timing Statements; H & P's with Issue Comments; Cases without Anesthesia Bid; H&P Cases that are not locked; ACP 2 Jan. Cases and Items; First Cases On-Time Check Report; Case Sheet Times Report; Sheet YTD totals; Remove Billing Reports; Cases with No Times QA entered; Times QA Results
- Provider Based Reports: Search for H&P's entered by a staff member; Search for Inta-op records from a staff member; Search for Inta-op Time totals; Under heavy construction; Anesthesia vs. Rooming Times Cases

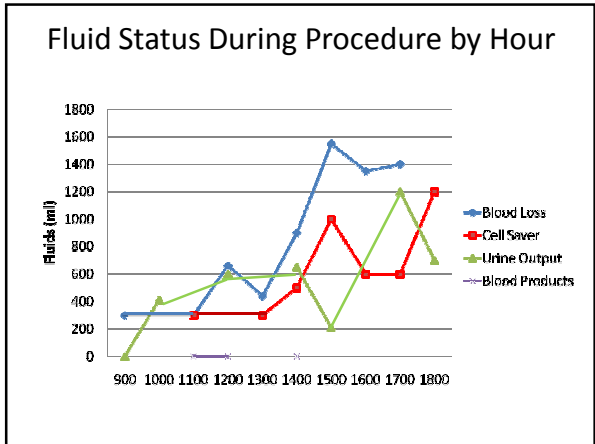
Centricity Crazy Query Reports:

- Weekly Reports: Facility Statement, Timout, Antibiotic, & Temperature Compliance; Provider Family Statement & Timout Compliance; Cases with a ZIP; Inta-op Block Cases; Inta-op Booked Billing Sheets; All Facility Statements; Cases without Facility numbers; Search for a Date Range; Search for a Specific Provider; Cases with Procedure 20100; Ortho Cases From Non-Ortho; Cases without Anesthesia Bid; Cases with Anes Endtime but No Anes Bid; H&P Cases that are not locked; Visages & PAT/SGMO Cases
- Monthly Reports: Cardiac Cases; Inta Cases; Cardiothoracic Cases QA Times
- Provider Based Reports: Search for H&P's entered by a staff member; Search for Inta-op records from a staff member



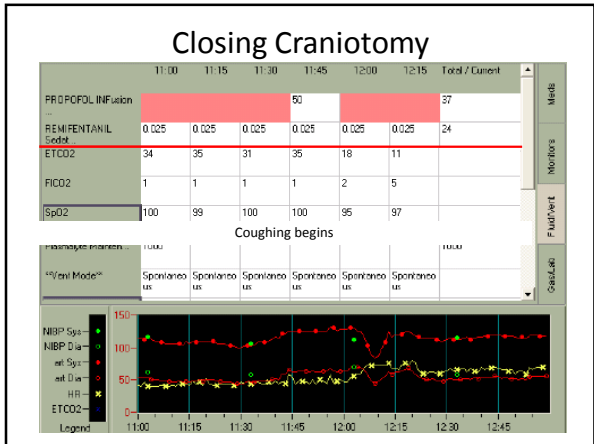
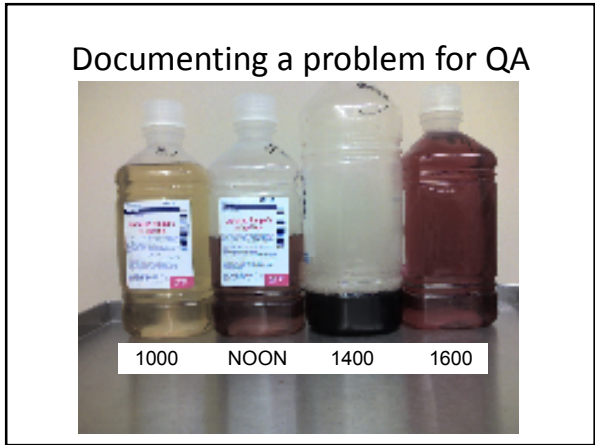
Education for all

CASE CONFERENCE



This section will have several slides that are video so there are no slides provided in your handout.

INFORMATION PROVIDED ARE OTHER EXAMPLES OF SAME CONTENT.



Managing the OR to make it Profitable

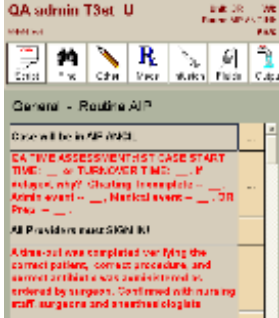
OR Management Issues

The Turnover Time is too long because *How about some data?*

of

- Anesthesia
- Nurses
- Equipment
- Surgeons

Administrative Knowledge



The Deal

Departmental goals of 100%

- 1st case starts on time
- 20 minute inpatient, 15 minute outpatient turnover time

Problem

- What is turnover time
- Is the Anesthesia department in control of this start time and turnover time

The Last Factor in Making your Choice



Empowering the department members: Voices in decision making.

**EQUIPMENT EVALUATION
EFFICIENCY DEMANDS**

The Missing Team Member *Your Vendor*

For us --GE



Sales

Centricity

Implementation Team

Equipment

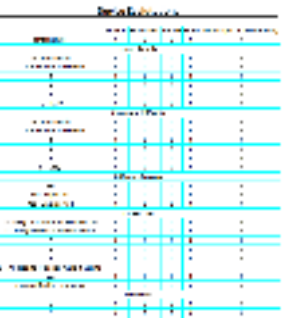
Networking

Engineers

Post go-live support

100% GE Environment – Equipment, Network, Centricity IT Solution

Assessing New Tools: Airway Devices



Developed a questionnaire
Made the "form" a hidden script

Required individuals who used the scopes to fill in the form

Tallied the results and made a purchase based on consensus opinion

A Vendor & You – Make a Purchase

- THEY TELL YOU THE TRUTH—TRUST IS EVERYTHING
- Keep one Vendor responsible for the ENTIRE system (Program, Hardware)
- Be sure it Communicates with other IT products

THINK GOOGLE
NOT MICROSOFT

Role Model--Google

- Talks to everything – fast
- Allows you to personalize (iGoogle)
- Is an innovator
- Is the best there is at what it does
- Is a SEACHABLE Database!!!
- Responds NOW to offer suggestions and solutions

**THEY TELL YOU THE TRUTH
TRUST IS EVERYTHING**



The Required Questions and Responses!!!

IS IT A SEARCHABLE DATABASE?

– YES, YES, YES, YES!!! (NO STRINGS ALLOWED)

- What data does it share?

– Demographics, allergies, medications.

– BEST: ANYTHING I TELL IT TO!!!!!!!!!!!!

- What data can you get out?

– Anything you put in

- How do you get it out?



Vendor & You

**Remember –
Bad Stuff Happens!
The question is are they
willing to fix it.**

Oh yes and did I mention--

- TRUST IS EVERYTHING
- THANK YOU WORKS TOO.



The Required Questions and Responses!!!

- Does it share useful data?

– YES, yes !!

- Who does it share it with?

– All same vendor perioperative products (scheduler, nurse charting, CPOE, materials management)

– ANYONE WITH AN HL7 INTERFACE **GUARANTEED!!!!**



The only thing that really matters
in this lecture.



Assessing an AIMS

Content wins.

- Thinks like an anesthesiologist
- Provides meaningful database
- Allows internal customization
- Shares data with others

Vendor is reliable committed

- Responds to trouble
- Plays well with others



Program Characteristics	
Right	Wrong
Organization can	Vendor must
<ul style="list-style-type: none">• Change "Content" in 10 minutes to 4 hours• Immediate understanding to enter new data• New data extraction is easy and immediate• Display of new information has impact• Data imports into whatever you want• Common Database	<ul style="list-style-type: none">• Make all "Content" changes• Require extensive training to enter new data• Data extraction requires specialized reports• Data display vendor produced• Data limited to uncommon programs• Proprietary Database

