



Lighting the Way
to a better understanding of
Instrument Management Systems




ORNAC
Thursday, 26 April 2007
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Instrument Management Systems

- Why should you care?



Instrument Management Systems

- Why should you care?
 - Can't find a set or instrument
 - Call to SPD, they say its in the ORI



Instrument Management Systems

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 - Call to SPD, they say its in the OR!
 - Instruments recalled by SPD due to sterilization failure
 - Don't know which sets are suspect
 - Can't find the suspect sets
 - Sets may have been used





Instrument Management Systems

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 - Call to SPD, they say its in the OR!
 - Instruments recalled by SPD due to sterilization failure
 - Don't know which sets are suspect
 - Can't find the suspect sets
 - Sets may have been used
 - Opening an additional ortho room
 - How much will it cost to do 4 more primary hips per day?



Instrument Management Systems

- Lots of systems on the market
 - Aesculap—Instacount Plus
 - Getinge—T-DOC
 - Microsystems—SPM
 - Steris—Censitrac
 - TGX—AlexGold
 - V. Mueller (Cardinal)—Impress



Instrument Management Systems

- Presentation outlines characteristics of a good system
- Not all systems have all of the features described i.e
 - ALL SYSTEMS ARE NOT CREATED EQUAL!
- When comparing systems be skeptical & ask lots of questions



Instrument Management Systems

- Objectives
 - What is it?
 - How is it used?
 - How can it benefit the OR?



Instrument Management Systems

- What is an instrument management system?



Instrument Management Systems

- What is an instrument management system?
 - Computer system that captures and integrates information
 - Instruments
 - Mobile equipment
 - Work processes in SPD



Instrument Management Systems

- Two parts
 - Hardware (network of computers)
 - Central server
 - Work stations
 - PLUS
 - Software
 - "Off the Shelf" programs e.g.
 - Microsoft Windows
 - Crystal Reports
 - Proprietary Instrument Management program





Instrument Management Systems

- Information in via...
 - Scan of instrument or set "identifier"
 - Barcode label
 - "Info-dot"
 - Laser etching
 - "Enduramark"





Instrument Management Systems

- Information in via:
 - Simple mouse clicks by staff member





Instrument Management Systems

- Information out:
 - Location
 - Of instruments, sets and case carts
 - Traceability
 - Connect instruments or sets to individual patients
 - Work instructions and set labels for SPD
 - Including images of instruments and set contents
 - Records of SPD activities
 - Production—department, shift, individual
 - Preventive maintenance, repairs
 - QA
 - Management data / reports such as:
 - Set utilization, Missing items, SPD Productivity




Instrument Management Systems

- Based in the Sterile Processing Dept.
- Many areas benefit
 - Any clinical area that uses reusable instruments e.g.
 - OR
 - Endo
 - Ambulatory Care
 - Finance
 - QA/Risk management
- SPD may need help to make the business case





Instrument Management System in Use



Instrument Management Systems






- Instrument reuse cycle





Instrument Management Systems

- Unique I.D. attached to each set (or instrument) to be managed
 - Like a license plate
 - Bar code label, "Info dot" or etching
 - Permanent / long lived



Instrument Management Systems

- Unique I.D. scanned at various points in reuse cycle





Instrument Management Systems

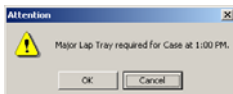
- Scanning
 - Registers/tracks current **location** of item or set
 - "Real time" vs batched downloads
 - Provides **work instructions** to users at a specific location









IMS—Decontam

- Tracks sets returned to SPD from:
 - OR
 - Ambu care
 - Endoscopy
- Displays
 - Communication from OR e.g. "fast track"
 - Specific work instructions (if necessary)






IMS—Assembly

- Displays clear work instructions
 - Saves time
 - Reduces errors


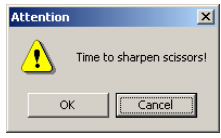
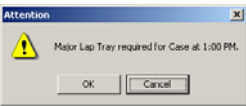
IMS—Assembly

- Work instructions can include images
 - Instruments
 - Sets

IMS—Assembly

- Work instructions can include special reminders



IMS—Assembly

- Documentation re: item/set being prepared
 - External bar code label for package...





IMS—Assembly

- Set Documentation (cont'd)
 - Set list (prn)

Set Name: 0130070-01 MATRN SET-0 AND-0

Set Description: MATRN SET-0 AND-0

Set Code: 0130070

Set Date: 10/05/98

Set Status: Active

Item Code	Item Description	Quantity	Unit
0130070-01	MATRN SET-0 AND-0	1	Set
0130070-02
0130070-03
0130070-04
0130070-05
0130070-06
0130070-07
0130070-08
0130070-09
0130070-10

Major Lap Tray

Item Code	Item Description	Quantity	Unit
0130070-01	MATRN SET-0 AND-0	1	Set
0130070-02
0130070-03
0130070-04
0130070-05
0130070-06
0130070-07
0130070-08
0130070-09
0130070-10



IMS—Sterilization

- Displays sterilization instructions related to each item
 - Sterilization method
 - e.g. Steam, Sterrad, ETO
 - Sterilization parameters e.g.
 - 132° C for 4 min
 - 132° C for 18 min
 - Monitoring requirements
 - e.g. BI with implants



From SPMA website Feb-07



IMS—Sterilization

- Reminders to sterilizer tech





IMS—Sterilization

- Documents each load for QA and recall
 - Items in load
 - Sterilization method
 - Actual sterilization parameters
 - Interface
 - Manual data entry
 - Results of load monitoring
 - Biological indicator
 - Chemical indicator





IMS—Sterilization

STERILIZATION LIST - COMPLETED LOAD

Load Number: 0044918-0008-01
 Sterilization Process: STEAM 270

Load Creation Time: 01/27/04 11:58:33AM
 Sterilization Start Time: 01/27/04 12:24:37AM
 Sterilization Complete Time: 01/27/04 11:24:45AM

Indicator Association	Date To Print	Cycle Start	Indicator	Printing User
Chemical Parameters	01/27/04 11:24:45AM	01/27/04 12:24:37AM	Completed	Logan

SN	Item Description	ITEM ID	Serial Number	Address/Line ID
8	RE TRAY 850X1500	R150400-10	22064	april
	Canvass	C1100100-1	22065	april
	TRAY DUCT TRAY	R150400-1	22013	april
	Lean Bundles		6	april
	FOP WOUNDS/CUTS CVD	R523225-3	22055	april
	D.E.C INSTRUMENTS	R1501200-7	22320	april
	CATERACT INSTRUMENT TRAY	R150400-30	22065	april
	CATERACT INSTRUMENT TRAY	R150400-23	22065	april
	CATERACT INSTRUMENT TRAY	R150400-15	22069	april



IMS—Sterile Storage & Case Carts

- Tracks sets & packages:
 - To storage shelves

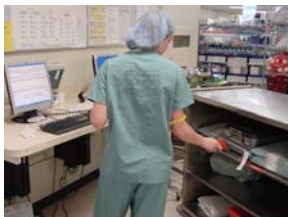
- Alerts user to wrong location!





IMS—Sterile Storage & Case Carts

- Tracks sets & packages:
 - To Case Carts





IMS—Sterile Storage & Case Carts

- Interface with OR booking system

- Track case cart to OR theatre
 - Place
 - Time

- Can then link case cart (& its sets) to patient





IMS—OR

- Device-Patient traceability
 - CSA—Steam sterilization Z314.3 (late 2007)
 - When high risk of resistant agents
 - For comprehensive inventory management
 - AAMI ST:79 (2006)
 - Ideally, every reprocessed device should be traceable to the patient
 - Traceability of implants especially important
 - PIDAC (2006)
 - Track endoscopes to patients



Benefits of an Instrument Management System



IMS—OR

- Trace sets/devices to patients
- Locate missing instruments or sets
- Communicate with SPD
 - "Fast-track", missing, sent for repair, loaned items
 - Global update of set lists /work instructions



http://138.238.41.43/MS/meds&2/subjectsearch.htm



Benefits—OR and SPD

- Fewer errors
 - Sets
 - Case Carts
- Improved operating efficiencies
 - Fewer department wide searches for "missing" items
 - Reduce or reallocate instrument inventory via set standardization
 - Manage instrument repairs
 - Utilization data to support instrument purchases



Benefits—OR and SPD

- Critical QA measures documented
 - Sterilizer cycle records including test results
 - Load details for product recall
 - Instrument set / patient traceability
 - Errors for follow up
 - Flash sterilization frequency in OR
 - Preventive Maintenance records for equipment (BioMed)



Benefits—OR and SPD

- Improved communication
 - Reprocessing "Fast Track" sets and instruments
 - Immediate and global changes to set lists
 - Information to SPD staff unable to attend inservice, report
- More accurate case costing
 - Volume & complexity of SPD work captured
 - SPD time can be given \$ value
 - Reprocessing
 - Picking case carts



Benefits—Financial

- Financial benefits vary by site
 - Facility size
 - Current organization and efficiencies
 - Installation configuration
 - e.g. number and location of work stations
 - Application of management information (report data)

- Instrument inventory management
 - e.g. 10 theatres, all services est. \$3 million (vs consumables \$3.2 million)



Benefits—Financial

- Experience of some IMS users
 - Hospital A
 - Clean returns = 2 FTEs
 - Decreased number of "search/missing" requests
 - Increased productivity
 - Hospital B
 - Max sterilizer loads per day before system introduction—10
 - Now 14
 - Hospital C
 - 10% increase in number of sets processed over 24 mo (w/ no change in number of staff)



Instrument Management Systems

- Objectives
 - What is an instrument management system?
 - How is it used?
 - How can a system benefit the OR?
 - Reduce set and case cart errors
 - Expedite search for missing items
 - Trace sets and instruments to patients
 - Document reprocessing QA measures
 - Communicate with SPD



Instrument Management Systems

- Questions?
- Comments?





Instrument Management Systems

- **Thanks!**

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