INFECTION PREVENTION IN AMBULATORY SURGERY

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OBJECTIVES

• Define the past and future of infection prevention in outpatient surgical settings

• Identify infection prevention guidelines and regulatory mandates in ambulatory surgery.

• Recognize key methods to prevent infections in ambulatory care settings.
The first ASC appeared in 1970

The number of Medicare-certified ASCs in the US has grown to >5000

61% of ASCs are exclusively physician owned

96% operate on a for-profit basis

Until more recently, over-site of these facilities had been lacking

Infection Control Assessment of Ambulatory Surgical Centers, Melissa K. Schaefer, JAMA. 2010;303(22):2273-2279
CHANGING LANDSCAPE OF HEALTHCARE DELIVERY

THE INCREASED COMPETITION
OF AMBULATORY SURGERY CENTERS (ASCs) TO US HOSPITALS

As hospitals and health systems accelerate towards population health models, such as Accountable Care Organizations (ACOs), lower priced ASCs will become more critical competitors to hospitals.

THE NUMBER OF ASC OPERATING ROOMS HAS DOUBLED OVER THE LAST DECADE...
NUMBER OF ASC OPERATING ROOMS IN THOUSANDS

HISTORICALLY, FOR PROCEDURES SUCH AS SHOULDER ARTHROSCOPY, ASCs AND HOSPITALS HAVE SHARED IN GROWTH...
NUMBER OF SHOULDER ARTHROSCOPY PROCEDURES IN MILLIONS, ALL PAYORS

1.4x ANNUAL GROWTH IN SHOULDER ARTHROSCOPY PROCEDURES ACROSS ALL CARE SETTINGS

...AND NOW 60% OF HOSPITALS HAVE AN ASC WITHIN A 5 MINUTE DRIVE!

...BUT AS THE INDUSTRY SHIFTS TOWARDS POPULATION HEALTH MODELS, ASCs’ PRICE ADVANTAGE POSITIONS THEM TO GROW AT HOSPITALS’ EXPENSE
MILLIONS

MEDICARE PAYMENT RATE FOR SHOULDER ARTHROSCOPY PROCEDURES, 2012

HOSPITAL OUTPATIENT

ASC

$2,000

$1,500

$1,000

$500

Footnotes:
1. M = 2011 short term acute care hospitals with more than 30 beds, 2009
2. Total procedure volumes are estimated and triangulated from multiple sources: RAND, IQV, and McKinsey articles, Objective Health and Premier de-identified client databases
4. Medicare payment differentials between ASCs and hospital outpatient have been largely standardized. Some differentials remain due to different conversion factor update methods and separate budget-neutrality adjustments for recalibration of relative weights.

Sources:
- Objective Health de-identified client data
- CMS Provider of Services Files 2001, 2006, 2009 and 2011
- CMS CY16 ASC OPPS payment rates
- Premier discharge database
- Objective Health analysis
CMS DEFINITION OF AN AMBULATORY SURGERY CENTER (ASC)

- Any distinct entity that operates exclusively for the purpose of providing surgical services to patients not requiring hospitalization and in which the expected duration of services would not exceed 24 hours following an admission.
- The entity must have an agreement with CMS to participate in Medicare as an ASC and must meet the Conditions for Coverage (42 CFR 416.2-416).
- Procedure performed for purpose of structurally altering the human body by incision or destruction of tissues.
- Diagnostic or therapeutic treatment of conditions or disease processes by any instruments causing localized alteration or transposition of live human tissue which include lasers, ultrasound, ionizing radiation, scalpels, probes, and needles.
- Injection of diagnostic or therapeutic substances into body cavities, internal organs, joints, sensory organs, and the central nervous system.

Increased number of surgical procedures conducted in ASCs

COST BENEFIT OF ASCS

• Surgery at an ASC may save the patient 61%
• Without the emergence of ASCs, health care expenditures would have been billions of dollars higher over the past three decades
• Medicare would pay approximately $464 million more per year if all procedures performed in an ASC were moved to a hospital

Question:
What are some of the top infection prevention concerns for patients seeking treatment in an Ambulatory Surgery Center?

Answer:
Main issues include: Clean Environment, Sterile Technique, Medication Safety, Injection Safety, Disinfection and Sterilization, Clean Hands
SAFETY & QUALITY REGULATIONS

Federal & State Oversight:

**Medicare Certification**
Mandated if facility treats Medicare recipients

**State Licensure**
Determined by each state

**Voluntary Accrediting Agency**
The Joint Commission
Accreditation Association for Ambulatory Health Care
American Association for the Accreditation of Ambulatory Surgery Facilities
American Osteopathic Association

Infection Control Practices in Ambulatory Surgical Centers, Phillip S. Barie, JAMA. 2010;303(22):2295-2297
• An ASC must compare its performance to other ASCs (external Benchmarking)
• Surgical procedures are limited to...
  ✓ Elective procedures
  ✓ Short anesthesia and operating timeframes
  ✓ Procedures not requiring an overnight stay
• Hospital based Outpatient Departments use inpatient standards
CMS CERTIFICATION REQUIREMENTS

1. Maintain complete, comprehensive, and accurate patient medical records
2. Physician must assess patient immediately prior to surgery and prior to discharge
3. Maintain an Infection Prevention Program that includes:
   ✓ identify and prevent infections
   ✓ maintain a sanitary environment
   ✓ report outcomes to authoritative agency
   ✓ Conduct active surveillance to prevent, detect, control and investigate infectious and communicable diseases as required by the CDC

4. Policies that ensure quality healthcare in a safe environment
5. Conduct an ongoing, comprehensive assessment of the quality of care
6. There must be a designated professional responsible for the Infection Prevention Program that has training in Infection Prevention

The Ambulatory Surgery Center (ASC) must maintain an infection control program that seeks to minimize infection & communicable diseases.

**Standard A: Sanitary Environment**

The ASC must provide a functional and sanitary environment for the provision of surgical services by adhering to professionally acceptable standards of practice.

- Based on accredited standards (TJC, HFAP, AAAHC, AAAASF)
- Recommended guidelines and resources (CDC, OSHA, AORN, AAMI, APIC, AAAASF, AAAHC, HFAP, SHEA)

**Key Areas of Focus**

- **Surgical Environment** – Facility Cleaning/Surface Disinfection, Temperature/Humidity, Ventilation, Traffic Patterns and Control
- **Preparation of Personnel & Surgical Asepsis** – Hand Hygiene, Surgical Attire, PPE, Employee Health.
- **Surgical Practices** – Sterile Technique, Cleaning/Decontamination of Surgical Instruments, Disinfection, Sterilization/Monitoring, OR Cleaning, Procedural Set-up, Patient Preparation, Waste Management and Sharps Containment.

Standard B: Infection Control Program
The IP program must include documentation that the ASC has considered, selected, and implemented nationally recognized infection control guidelines.

- Under the direction of a designated and qualified professional trained in infection control.
- The IP Program is an integral part of the ASC’s quality assessment and performance improvement program.
- Develop Policies and Procedures with a plan of action for preventing, identifying, and managing infections and communicable diseases and for immediately implementing corrective and preventive measures that result in improvement.
WHAT’S NEW: CONDITIONS FOR COVERAGE INFECTION PREVENTION AND CONTROL

- **Infection Control Program**
  - Dedicated responsibility to one key individual: Infection Preventionist
  - Identifying and Preventing Infections and communicable diseases
  - **Employee Influenza Vaccine Compliance**
  - Reporting Results to Appropriate Public Health Authorities
  - Must be an integral part of the Quality assessment and performance improvement program

- **Sanitary Environment**
  - Utilization of Infection Prevention standards
  - Avoiding sources of transmission and contamination
  - **Hand Hygiene**
  - **Environmental Surface Disinfection**
  - **Patient Preparation**
  - Disposal of regulated waste
  - Pest control

Purpose:

• Act as basis for infection Prevention activities and annual plan
• Identify at-risk populations:
  • High volume
  • High risk
  • High cost
• Assist in focusing surveillance efforts
• Meet regulatory and other requirement

Source: Centers for Medicare and Medicaid Services ASC Website
FACILITY RISK ASSESSMENT INCLUDES:

• Geographic location and size
• Epidemiologically important organisms
• Staff mix
• Populations served
• Services performed
• Surveillance data
• Volumes
• Prioritize the risks

SURVEILLANCE

• Assess the population
• Select the outcome and process
• Use standard surveillance definitions
• Collect surveillance data
• Calculate and analyze rates
• Apply risk stratification
• Use surveillance data to improve practice
FOCUS ON THE COMMON SOURCES OF INFECTION

Contaminated Hands
- Patient/Resident
- Healthcare Provider
- Patient’s Family and Visitors

Contaminated Environmental Surfaces
- Environmental Surfaces
- Medical Equipment

Contaminated Skin of the Patient
HAND HYGIENE PREVENTS INFECTION

HANDWASHING is NUMBER ONE!!!

Wash hands with gels or handwipes:
- Before direct resident contact
- After contact with patient/visitor intact skin
- After contact with objects in the environment
- After removing gloves

Wash hands with soap and water:
- If visibly soiled with blood or other body fluids
- Before eating
- After using the restroom
- When patients have diarrhea (C. difficile, Norovirus)
The surgical hand scrub reduces the transient and resident flora of the hands. A standardized surgical hand scrub with a soap (antimicrobial agent), nonabrasive sponge, and water is not required. Hand washing does however need to be performed before the first surgical hand scrub of the day. A standardized surgical hand scrub using an alcohol-based hand rub product will decrease transient and resident flora on the hands.

ENVIRONMENTAL DISINFECTION --- WHERE ARE THE AREAS OF CONCERN?
FACILITY CLEANING AND SURFACE DISINFECTION

Surfaces must be decontaminated with an appropriate disinfectant:
✓ After completion of procedures
✓ When surfaces are contaminated
✓ After examining the patient
✓ At the end of the work shift

Equipment Disinfection
✓ Stethoscopes
✓ IV Equipment
✓ Monitors
✓ Blood pressure cuffs
✓ Blood Glucose Monitors
SELECTING THE RIGHT HEALTHCARE DISINFECTANT

- Disinfectant must be EPA approved.

- Disinfectant should be used in the manner recommended by the manufacturer (i.e., contact time, dilution, how to use, etc).

- Disinfectants that are “ready to use, or dispensed in pre-measured amounts, are preferred over those that require mixing.”
FACTORS IN DISINFECTANT EFFICACY

• **Concentration and exposure time to disinfectant (contact time)**
  ✓ Clinicians should follow the US EPA FIFRA standards, and all applicable user instructions
  ✓ Contact time stated by manufacturer based on testing performed for EPA on microbial load of microorganisms (bioburden)
  ✓ Total Contact Time is the longest contact (dwell) time required

• **Nature of object to be cleaned/disinfected**

• **Temperature and relative humidity**

CRITICAL CLAIMS FOR DISINFECTANT

- Broad Spectrum for bacteria
- Viruses (non-enveloped and enveloped)
- Multi-Drug Resistant Organisms (Drug Resistant Strains)
- Pathogenic Fungi
- Bloodborne Pathogens (HIV, HBV, HCV)
- TB Claim – Intermediate Disinfectant for Surgical Procedure/Operating Rooms

AORN Practice Standards 2013
PATIENT SKIN PREPARATION PRIOR TO SURGERY

- Skin is composed of two layers – epidermis & dermis
- Bacterial flora are on and within the epidermis, hair follicles, sweat & sebaceous glands
- Dermis and subcutaneous tissue are free of microbial flora

http://www.h-tm.com/Documents/Safehands.html
• Transient flora is found on and within the epidermal layer of the skin.
  - Almost all disease-producing microorganisms belong to this category
  - Is easily removed with **proper skin prep** and **hand hygiene**

• Resident flora is found in the dermis of the skin
  - Removal is more difficult
SKIN ANTISEPSIS

Pre-operative Bathing

Skin preparation prior to surgery

Properties of an ideal skin antiseptic:
• Broad Spectrum
• Quick
• Persistence
• Maintain activity in the presence of organic matter
• Non-irritating

Decolonization of skin flora

Follow manufacturer directions for use to ensure proper skin antisepsis
Safe Injection Practices Toolkit

The resources in this toolkit may only be used for internal improvement and education efforts. They may not be used for commercial purposes.

Safe injection practices are crucial to basic levels of patient safety and provider protection. Hepatitis C virus, hepatitis B virus, and HIV can be spread from patient to patient when safe injection practices are not used.

The ASC Quality Collaboration has assembled a variety of resources and information that may be used to supplement your current processes to enhance existing injection practices.

The BASIC Safe Injection Practices Toolkit includes three essential resources:
SAFE HANDLING OF MEDICATION

Injection Safety Guidelines From CDC

- Never administer medications from the same syringe to more than one patient, even if the needle is changed.
- After a syringe or needle has been used to enter or connect to a patient’s IV it is contaminated and should not be used on another patient or to enter a medication vial.
- Never enter a vial with a used syringe or needle.
- Never use medications packaged as single-dose vials for more than one patient.
- Assign medications packaged as multi-dose vials to a single patient whenever possible.
- Do not use bags or bottles of intravenous solution as a common source of supply for more than one patient.
- Follow proper infection control practices during the preparation and administration of injected medications.
- Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space.


WHO DRIVES THE PRACTICE STANDARDS?

• APIC: Association for Professionals for Infection Control and Epidemiology
• SHEA: Society for Healthcare Epidemiology of America
• IDSA: Infectious Disease Society of America
• AAAHC: Accreditation Association for Ambulatory Healthcare
• AAAASF: American Association for Accreditation of Ambulatory Surgery Facilities
• TJC: The Joint Commission
• CDC: Centers for Disease Control and Prevention
• AORN: Association of Perioperative Nurses
• CMS: Center of Medicare Services
• IHI: Institute for Healthcare Improvement
• Consumer Lobbies
CMS now requires each state to monitor the ASCs using a specific infection prevention audit tool and the tracer methodology.

The audit focuses on five key indicators:

- Hand hygiene and appropriate use of personal protective equipment
- Injection safety and medication handling
- Equipment reprocessing
- Environmental cleaning
- Handling of blood glucose machines

[Interpretive Guidelines for the Infection Control Conditions of Coverage, Centers for Medicare and Medicaid Services, 2010.](http://totalsol.vo.llnwd.net/o29/data/1080/infection_control_surveyor_worksheet.pdf)
CHECKLIST FOR OUTPATIENT SETTINGS

MANDATORY REPORTING?

Ambulatory Surgery Centers have begun reporting influenza vaccine rates

What’s Next?

CMS Quality Initiatives: Public Reporting and Pay for Performance

http://www.hhs.gov/ash/initiatives/hai/index.html
SUMMARY

- CMS regulations are increasing in both number and accountability
- Infection Prevention focus on hand hygiene, environmental disinfection, & skin antisepsis
- New regulations are an opportunity to improve patient safety, employee safety, and patient satisfaction
- There are many free resources available to assist ASCs with their Infection Prevention Program and overall compliance from a variety of organizations including CDC, AORN, APIC, CMS, etc.
- The increased focus on these facilities is imperative to ensure the public’s confidence in ASCs
ADDITIONAL REFERENCES

- Perioperative Standards and Recommended Practices, AORN, 2013
- Infection Control Practices in Ambulatory Surgical Centers, Phillip S. Barie, JAMA. 2010;303(22):2295-2297
- Infection Control Assessment of Ambulatory Surgical Centers, Melissa K. Schaefer, JAMA. 2010;303(22):2273-2279