KEYS TO PREVENTING SEPSIS IN LONG TERM CARE

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PERCEPTION OF INFECTION CONTROL IN LTC
- Legal activity
- Sepsis in the elderly
  - Clinical Presentation
  - Diagnostic Criteria & Screening
- Evaluation of suspected infections in the elderly
- Review of infections that frequently lead to sepsis
  - Pneumonia
  - Wound infections
  - C. Difficile
  - Urinary tract infections
- Hospital transfer decision making process

PRESENTATION OUTLINE
Research has shown a pattern of non-compliance with infection control in LTC

- American Journal of Infection Control Report: May 2011
  - Data collected between 2000 and 2007 representing 96% of all nursing homes
  - Based on a panel of roughly 100,000 observations
  - Study examined the deficiency citation for infection control requirements under F-Tag 441
  - Infection control violations in 15% of United States nursing homes

Between 1.6 and 3.8 million infections occur each year in nursing homes with nearly 388,000 deaths attributed to these infections.

- Estimated costs associated with infections range from $673 million to $2 billion per year.
- Legal Action taken against LTC for complications related to infection.
Proper prevention and treatment of sepsis requires adequate staff, both in quantity and quality, and a generally clean and sanitary nursing home environment. Usually, suffering from a septic infection is a sign that the resident’s dignity and hygiene have not been attended to, according to the patient’s rights. If your loved one has suffered severe complications, such as permanent organ damage, cognitive impairment, or physical disability, caused by sepsis in a skilled nursing facility in California, please contact us today.

We will evaluate your case with our team of medical and legal experts to determine whether your loved one has been subjected to elder neglect, which is a form of Elder Abuse. If so, we will pursue your case with vigor until justice is served and nursing home owners and operators understand that the health and safety of our elderly is more important than increased profits.
Sepsis can be a difficult condition for anyone to battle, but it becomes more and more challenging for our bodies to fight off an infection as we grow older. For this reason, it is imperative that all elderly patients receive regular medical attention while under the care of a nursing home or assisted living facility—especially at the first sign of infection. When left untreated, this preventable illness can quickly turn catastrophic. With the help of a Tucson elder abuse attorney [Attorneys.aspx] from Kinerk, Schmidt & Sethi, PLLC, you can build an effective case by examining the following factors:

- Was a bed sore or open wound left untreated?
- Is the nursing home facility regularly disinfected or cleaned?
- Were you expected to wear the same clothes for days at a time?
- Is the nursing home understaffed or inadequately managed?
- Were your medical concerns/complaints routinely ignored?

Cleveland Nursing Home Sepsis Lawyers

Neglect and Abuse Resulting in Infections and Sepsis

Residents of nursing homes and assisted living facilities are not immune to getting a wide variety of infections. While an infection may not be a sign of abuse or neglect, sepsis that results from the infection may be. Sepsis, also sometimes called septic shock or septicemia, is a very serious issue that can cause severe health issues and even death. An infection that is left untreated may result in sepsis.

If your loved one has developed sepsis from an untreated infection, turn to our lawyers at the office of Klein & Carney Co., L.P.A., in Cleveland. With more than 52 years of combined experience handling a range of nursing home abuse and neglect cases, our firm is highly knowledgeable in the area of sepsis and other infections. We understand that sepsis and other nursing home abuse and neglect matters are devastating cases that take a toll on individuals who had trusted their aging and/or incapacitated loved ones to the nursing home or care facility. Our firm works closely with clients to ensure that their needs are being met and their loved ones are protected.
**SEPSIS**
A condition where the blood stream is overwhelmed by bacteria or fungus and the systemic inflammatory response that follows is complicated by acute organ dysfunction, hypoperfusion, or hypotension. Perfusion abnormalities may include lactic acidosis, oliguria, or an acute alteration in mental status.

**SEPTIC SHOCK**
A serious medical condition that occurs when an overwhelming infection leads to life-threatening low blood pressure.

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**MORTALITY & COSTS**

- About 750,000 people in the United States develop sepsis each year.
- The overall death rate is now about 25%, compared to 50% just two decades ago.
  - The death rate is down because modern ICU based interventions have been able to stop and reverse the course of organ failure.
  - Even though there are increasing numbers of survivors, there has not necessarily been recovery to the previous baseline health status.
You have just taken the blood pressure of a resident twice. The first reading was 120/80 and the second reading was 130/75. What is this resident’s mean arterial pressure?

A. 93  
B. 100  
C. 110  
D. 125

**Poll Question**

- General Variables  
- Inflammatory Variables  
- Hemodynamic Variables  
- Organ Dysfunction Variables  
- Tissue Perfusion Variables

**Diagnostic Criteria**
GENERAL VARIABLES

- Fever (> 38.3 C)
- Hypothermia (core temperature < 36.0 C)
- Heart rate > 90/min or more than two standard deviations above the normal value for age
- Tachypnea
- Altered mental status
- Significant edema
- Hyperglycemia (plasma glucose > 140) in the absence of diabetes

INFLAMMATORY VARIABLES

- Leukocytosis (WBC count > 12,000)
- Leukopenia (WBC count < 4,000)
- Normal WBC count with greater than 10% immature forms
- Plasma C-reactive protein more than two standard deviations above the normal value
- Plasma procalcitonin more than two SD above the normal value
Arterial hypotension (SBP < 90 mm Hg), Mean Arterial Pressure < 70 mm Hg, or a systolic blood pressure decrease > 40 mm Hg in adults.

**Estimating Mean Arterial Pressure**

\[ \text{MAP} = \frac{\text{SBP} + 2 \times \text{DBP}}{3} \]

MAP is the average arterial pressure during a cardiac cycle.

**HEMODYNAMIC VARIABLES**

- Hypoxemia
- Acute oliguria (urine output < 0.5 mL/kg/hr for at least 2 hours despite adequate fluid resuscitation)
- Creatinine increase > 0.5 mg/dL
- Coagulation abnormality (INR > 1.5)
- Ileus (absent bowel sounds)
- Thrombocytopenia (platelet count < 100,000)
- Hyperbilirubinemia (plasma total bilirubin > 4 mg/dL)

**ORGAN DYSFUNCTION VARIABLES**
TISSUE PERFUSION VARIABLES

- Hyperlactatemia (> 1 mmol/L)
- Decreased capillary refill or mottling

Sepsis linked to dementia in the elderly

- The elderly have a 3-fold increase in life-altering mental decline after surviving sepsis.
- 3 of 5 sepsis survivors experience serious physical and/or mental declines in the years following the event.
- It is estimated, based on recent research, that sepsis may be responsible for 20,000 new cases of dementia among people aged 65 and over each year in the United States.

JAMA 2010

SEPSIS & THE ELDERLY
Characteristics of skilled nursing facilities that interfere with timely diagnosis and treatment of infections

1. The physicians are often off-site and don’t see the patients frequently.
2. Fever is not present in 25% - 30% of elderly people with serious infections.
3. Decisions about prescribing antibiotics or transfer to emergency room is more difficult when the physician is off site.
4. Long term care facilities usually do not have x-ray and laboratory capabilities for conducting appropriate diagnostic tests.
SEPSIS SCREENING TOOL

<table>
<thead>
<tr>
<th>Sepsis confirmed by &gt;2 clinical signs and indication of infective source</th>
<th>Yes</th>
<th>2. Is the history indicative of an infection in any of these areas?</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are &gt;2 of the following signs present?</td>
<td></td>
<td>2. Is the history indicative of an infection in any of these areas?</td>
<td>Yes</td>
</tr>
<tr>
<td>Temperature &gt;38.3°C or &lt;36°C</td>
<td></td>
<td>Invasive device infection</td>
<td></td>
</tr>
<tr>
<td>Heart rate &gt;90bpm</td>
<td></td>
<td>Lungs/pneumonia</td>
<td></td>
</tr>
<tr>
<td>Respiratory rate &gt;20 breaths/min</td>
<td></td>
<td>Abdomen, acute infection</td>
<td></td>
</tr>
<tr>
<td>White cells &lt;4 or &gt;12g/L</td>
<td></td>
<td>Wound infection</td>
<td></td>
</tr>
<tr>
<td>New altered mental state</td>
<td></td>
<td>Skin/soft tissue inflammation</td>
<td></td>
</tr>
<tr>
<td>Blood glucose &gt;7.7 (not diabetic)</td>
<td></td>
<td>Endocarditis</td>
<td></td>
</tr>
</tbody>
</table>

If yes, consider the following question

CLINICAL BALANCE
“Here, eat this root.”

“That root is poison. Say this prayer”

“That prayer is superstitious. Drink this potion”

“That potion is rotten. Take this miracle drug. It’s called penicillin”

“Penicillin is worthless. Try this newer, bigger, better antibiotic.”

“Those antibiotics don’t work anymore. Here, eat this root.

HISTORY OF ANTIMICROBIAL RESISTANCE

There have been changing trends in the organisms that are associated with sepsis over a 22-year period that was studied and reported.

- Gram-negative bacteria was the primary offender from 1979 – 1987.
- A rise in cases caused by gram positive organisms was seen starting in 1987.
- Gram positive bacteria accounted for more than 51% of sepsis cases by 2000. By this time only 1/3rd of cases were due to gram negative bacteria.

PATTERN OF ORGANISMS
LIKELY CULPRITS IN LTC

- Escherichia Coli
- Staphylococcus Aureus
- Proteus Mirabilis

An 89-year old male is found with increased confusion, foul smelling urine, and no other clinical findings. His serum sodium was 139 one month ago and is now 144. What is the most likely diagnosis?

1. UTI
2. UTI with dehydration
3. Urosepsis
4. Asymptomatic bacteriuria

POLL QUESTION
Q&A SESSION #1
Reducing the Risk of Sepsis in Long Term care

Vital signs
- One reading > 100 F; two readings > 99 F, or an increase of 2 degrees above baseline should trigger an investigation by the nursing staff
- Initial Screen by Nursing Staff to determine if there are any possible sites of infection. Sepsis usually starts with an infection of the urinary tract, respiratory system, or skin/soft tissues.
- The clinical evaluation should be documented in the medical record. Also record reasons for withholding specific diagnostic measures.

CLINICAL EVALUATION OF RESIDENTS WITH SUSPECTED INFECTIONS
Initial diagnostic testing for suspected infection can be done at the facility if not prohibited by advance directives.

- WBC (> 14,000 or a left shift are indicative of a potential bacterial infection).
- Urinalysis
- Urine culture
- Metabolic panel

Assessment of catheterized patients.

- Fever > 100 F, hypotension, shaking chills, and delirium may indicate onset of sepsis and requirement for more urgent assessment and initiation of treatment and fluid resuscitation.

Evaluation of suspected pneumonia

- Pulse oximetry
- Chest x-ray
- Examination of respiratory secretions

Screen for abdominal cramps, bloody diarrhea, diarrhea with a history of systemic antibiotic use in the last 30 days, or white blood cells in the stool

- Stool culture should be considered to isolate possible Campylobacter Jejuni, Salmonella, Shigella, and E. Coli

Assessment of wounds
LUNGS/PNEUMONIA

Keys to Preventing Sepsis in Long Term Care

1. Community-acquired pneumonia (CAP) in the fit elderly
2. Community-acquired pneumonia in persons with significant co-morbidities, functional dependence, poor nutritional state, or cognitive impairment.
3. Aspiration pneumonia
4. Nursing Home acquired pneumonia (NHAP)

CONTEXT OF PNEUMONIA
A respiratory rate > 20 breaths per minute is the earliest and most sensitive sign and may precede other signs by 3 to 4 days.

- Falls.
- Confusion/delirium.
- New or worsening incontinence.
- Worsening co-morbidities (such as worsening heart failure or deterioration in activities of daily living).
- Auscultation is unremarkable in 35% of patients.

**CLINICAL PRESENTATION**

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- **Pulse Oximetry**
  - Assesses the severity of respiratory impairment
  - Determines the need for supplemental oxygen

- **Chest X-Ray**
  - Important but not readily available
  - Less specific due to concomitant illnesses such as heart failure and chronic obstructive pulmonary disease
  - Follow-up chest x-rays are not required routinely in patients who become asymptomatic and return to their pre-pneumonia status

**DIAGNOSTIC TESTING**
BLOOD TESTING

- CBC with differential
- Metabolic panel
  - Renal function
  - Hydration status
  - Evidence of acidosis
- C-reactive protein
  - Sensitive age-independent marker
  - Decreases in response to successful treatment
  - A level of 100 mg/l or higher has been independently associated with mortality in older patients with pneumonia

SPUTUM & BLOOD CULTURES

- An older person produces less sputum and coughs ineffectively, therefore, reliable sputum samples are rarely possible to obtain.
- Evidence in long term care and community based primary practice indicates that routine blood cultures rarely contribute to the management of pneumonia in the elderly.
FEATURES ASSOCIATED WITH POOR PROGNOSIS

- Respiratory rate > 30 breaths per minute
- Heart rate > 125 beats per minute
- Altered mental status
- Hypotension (systolic blood pressure < 90 mmHg)
- History of dementia
- C-reactive protein > 100
- Acute aggravation of comorbid chronic disease, especially diabetes, cardiac, renal, and liver disease.

The family of an 81-year old female reports to the nursing staff that they would like the doctor to see their mother because she was coughing while they had her out on pass.

The MD examines her and does not hear anything on examination of the chest. In addition, he notes that during the 10 minutes he has spent with her she has not coughed.

Her vital signs are normal.

Would you start antibiotics?

1. YES
2. NO

POLL QUESTION
Antibiotics were not started. One week later, the family once again reports that the resident is coughing. The nursing staff continues to report they have not witnessed any coughing or respiratory issues.

The MD examines her once again and does not hear anything, however, when she is asked to take a deep breath it triggers a productive cough.

A work-up is ordered, and the resident is started on an antibiotic. One day later, the x-ray is reported to be negative.

Do you continue antibiotics?

1. YES
2. NO

**POLL QUESTION**

<table>
<thead>
<tr>
<th>Microorganism</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptococcus Pneumoniae</td>
<td>58%</td>
</tr>
<tr>
<td>Respiratory Viruses</td>
<td></td>
</tr>
<tr>
<td>• Influenza</td>
<td>26%</td>
</tr>
<tr>
<td>• Respiratory syncytial virus</td>
<td></td>
</tr>
<tr>
<td>• Adenovirus</td>
<td></td>
</tr>
<tr>
<td>• Parainfluenza</td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae</td>
<td>14%</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>Up to 7%</td>
</tr>
<tr>
<td>Moraxella Catarrhalis</td>
<td>Up to 4%</td>
</tr>
</tbody>
</table>
Aspiration pneumonia may have both anaerobic (20%) and aerobic (80%) organisms.

Most are gram-negative enterobacteriaceae.

The role of clinical aspiration is being increasingly recognized in the frail elderly.

ASPIRATION & SILENT ASPIRATION

SILENT ASPIRATION & SEPSIS
- **Moderate to severe presentation**
  - High-dose amoxycillin-clavulanate
  - Second or third generation cephalosporin
- **Severe pneumonia or poor response to initial therapy**
  - Add erythromycin, clarithromycin, azithromycin or doxycycline or;
  - Use a newer fluoroquinolone with enhanced pneumococcal coverage (moxifloxacin or gatifloxacin)

**ANTIBIOTIC OPTIONS**

**HYDRATION SUPPORT**
1. The resident is able to eat and drink.
2. The heart rate (pulse) is at or below 100 beats per minute.
3. The respiratory rate is at or below 30 breaths per minute.
4. The systolic blood pressure is at or above 90 mm Hg.
5. The Oxygen saturation is at or above 92%.

These criteria were established based on a study conducted at 22 Nursing Homes involving 680 residents with pneumonia and was published by Loeb M et al. JAMA 2006;295;2503-2510.

CRITERIA FOR TREATING PNEUMONIA IN THE SKILLED NURSING FACILITY

Q&A SESSION #2

Reducing the Risk of Sepsis in Long Term Care
A resident with a sacral ulcer is seen on wound rounds with observation of a large amount of malodorous purulent drainage. The prior week, the wound had a small amount of serous drainage. A wound culture was obtained and grew a large amount of staph aureus. What would you do?

1. Treat with a topical antibiotic and repeat culture after completion of therapy.
2. Treat with a systemic antibiotic and repeat culture at completion of therapy.
3. Start antibiotic therapy at the time the culture is done.
4. Don’t treat with an antibiotic.

POLL QUESTION
<table>
<thead>
<tr>
<th>Definitions</th>
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<tr>
<td><strong>Contamination</strong></td>
</tr>
<tr>
<td><strong>Colonization</strong></td>
</tr>
</tbody>
</table>
| **Infection** | **Local Infection**: bacteria multiply, healing is disrupted and wound tissue is damaged.  
**Spreading infection**: Bacterial growth causes nearby problems.  
**Systemic Infection**: bacterial invasion causes systemic illness. |

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**Increasing clinical problems**

<table>
<thead>
<tr>
<th>Contamination</th>
<th>Colonisation</th>
<th>Localised infection*</th>
<th>Spreading infection</th>
<th>Systemic infection</th>
</tr>
</thead>
</table>

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*Localised infection may or may not be accompanied by the classical signs and symptoms of inflammation. When it is not, various terms have been used, eg critical colonisation (see main text)*

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An unstageable pressure wound of the right ankle.
FACTORS THAT INCREASE RISK FOR WOUND INFECTION

• Diabetes Mellitus
• Hypoxia
• Renal Disease
• Anemia
• Malnutrition
• Obesity
• Rheumatoid Arthritis
• Malignancy
• Systemic Steroids
• Poor wound care & Hygiene

SIGNS & SYMPTOMS

▶ Subtle presentations may occur with chronic wounds and debilitated patients
  ▶ Loss of appetite
  ▶ Malaise
  ▶ Deterioration of glycemic control in diabetic patients
TRIGGERS FOR SUSPECTING INFECTION OF ACUTE WOUNDS

- Localized infection
  - New or increasing pain
  - Erythema
  - Local warmth
  - Swelling
  - Purulent discharge
  - Fever
  - Abscess
  - Malodor

- Spreading infection
  - Further extension of erythema
  - Lymphangitis
  - Crepitus in soft tissues
  - Wound breakdown/dehiscence

TRIGGERS FOR SUSPECTING INFECTION OF CHRONIC WOUNDS

- Localized infection
  - New, increased, or altered pain
  - Delayed healing
  - Periwound edema
  - Bleeding or friable tissue
  - Malodor
  - Wound bed discoloration
  - Increased or altered purulent exudate
  - Induration
  - Pocketing
  - Bridging

- Spreading infection
  - Wound breakdown
  - Erythema extending from wound edge
  - Crepitus, warmth, induration or discoloration spreading into the periwound area
  - Lymphangitis
  - Malaise
WOUND CULTURES

- Wound Biopsy
  - Gives the most accurate information about type and quality of pathogenic bacteria
  - Invasive
  - Should be reserved for wounds that are failing to heal despite treatment for infection

- Needle Aspiration

- Wound Swabbing
  - The Most Practical Method
  - Most wisely used
  - Risk of treating surface colonization rather than deep seeded pathogens
  - There are no definitive clinical guidelines on the most effective technique for obtaining a wound culture swab sample
TAKING A WOUND SWAB

- Remove the dressing and clear away any slough, necrotic tissue, dried exudate, and dressing residue using tap water, sterile saline, or debridement.

- If the wound is dry, moisten the swab with sterile saline before collecting the sample. If the wound is moist the swab can be used straight from the packaging.

TAKING A WOUND SWAB

- Ensure that the swab only comes in contact with the wound surface.

- The swab should be moved across the wound surface in a zig-zag motion at the same time as being rotated between the fingers.

- Downward pressure should be applied to promote release of fluid from the wound surface, but this may be painful to the patient.
A representative area of the wound should be sampled.

If the wound is large you may not be able to sample the entire surface but you should try to spread the tip across at least 1 squared centimeter.

Return the swab to the medium container and label.

The report should list the potential pathogens isolated and the amount of growth observed. Antibiotic susceptibilities may also be reported.

TAKING A WOUND SWAB

Indications
- To prevent infection or recurrent infection.
- Use as mono-therapy for localized wound infection.
- Use in combination with systemic antibiotics if there is a wound infection and presence of systemic symptoms.

Monitoring
- The wound infection should improve without local or systemic spread.
- If the wound is chronic with localized infection it should show improvement within 14 days of starting therapy.
  - Failure to respond to therapy may be an indicator of systemic infection that would require systemic antibiotic therapy.

Discontinue treatment when signs of infection resolve and the wound starts to heal.

TREATMENT: ANTISEPTICS
TREATMENT: SYSTEMIC ANTIBIOTICS

• **Indications**
  • Prophylaxis where risk of wound infection is high (example – “dirty” traumatic wound)
  • Spreading or systemic infection
  • When culture reveals B-hemolytic streptococci, even in the absence of signs of infection
  • Use of combination therapy may be required
  • Intravenous antibiotics are usually reserved for life-threatening infections
  • With chronic wounds, unless the patient is very ill or a limb is in danger, microbiological results should usually be obtained before commencing systemic antibiotics

• **Monitoring**
  • If there is no improvement of systemic or local signs consider microbiologic analysis and changing the antibiotic regimen.

• **Discontinue treatment when the prescribed course is completed**

Q&A SESSION #3

Reducing the Risk of Infection in Long Term care
CLOSTRIDIUM DIFFICILE INFECTIONS

- Exposure to antibiotics is a major risk factor
  - Clindamycin
  - Penicillin
  - Cephalosporins
- Watery diarrhea (at least three bowel movements per day for 2 or more days)
- Fever
- Loss of Appetite
- Abdominal pain or tenderness
- Treatment requires prompt recognition and use of antibiotics
ENVIRONMENTAL CLEANING

- Proper cleaning and sanitizing of equipment, high traffic clinical areas, and frequently touched surfaces
- After initial cleaning of surfaces to remove visible soil, use a freshly made 10% chlorine bleach solution (i.e., 5,000 ppm sodium hypochlorite = 1 cup bleach to 9 cups water) or other Environmental Protection Agency (EPA)-approved disinfectant
  - Note: all cleaning products and disinfectants should be EPA-registered and have labels claims for healthcare use
  - Change mop heads when a new bucket of cleaning solution is prepared, or after cleaning large spills of emesis or fecal material

UTI/UROSEPSIS
Reducing the Risk of Sepsis in Long Term Care
The frequency of changing long-term indwelling urinary catheters is a subject of debate.

There are no current research studies specifically studying routine changes of chronic indwelling urinary catheters available to support or refute this common practice.

The frequency of chronic urinary catheter changes should be tailored to the individual patient and occur as clinically indicated.
UTI is commonly overdiagnosed and overtreated on the basis of non-specific clinical signs and symptoms.

The evidence for use of urinalysis is limited.

There is overwhelming evidence that asymptomatic bacteriuria should not be treated.

Indwelling catheters, a common source of infection, should be avoided when possible.

Antibiograms should be reviewed at least periodically to monitor local resistance patterns.

It is encouraged to move away from the use of broad spectrum antibiotics for treatment of urinary tract infections.

- Common in cognitively impaired patients with urinary and fecal incontinence.

- Neurologic conditions such as Cerebrovascular disease, Alzheimer’s disease, and Parkinson’s disease are all common in later life and are associated with impaired bladder emptying.

- Diabetics have neurologic impairment of bladder function combined with higher loads of glucose in the urinary tract.
The spectrum of UTI's range from symptomatic bacteriuria to bacteremic infection.

- Includes uncomplicated and complicated UTI's

- Symptomatic bacteriuria requires the presence of frequency, urgency, dysuria, new incontinence, or costovertebral or suprapubic tenderness.

- UTI with bacteremia in the older population is associated with high mortality with studies reporting a 28 day mortality rate of 5%.

**SPECTRUM OF UTI'S**

The trend of antimicrobial resistance and *C. difficile* infection has led to a shift from broad to narrow spectrum antibiotics.

- Using narrow spectrum agents increases the importance of obtaining cultures and using results to alter therapy when indicated.

- Treatment guidelines encourage use of data regarding local resistance patterns to available agents.

- The most common organisms
  - *E. Coli*
  - *Klebsiella pneumoniae*
  - *Proteus Mirabilis*

**MANAGEMENT OF UTI’S**
- **Trimethoprim-sulfamethoxazole**
  - Works well as a first line agent against uncomplicated symptomatic lower UTI in females.
  - 3-day course recommended for women and 7-day course recommended for men.

- **Nitrofurantoin**
  - Good alternative to trimethoprim for lower tract infection but should not be used in those with renal impairment due to inability to reach necessary concentrations in the urine and possibly toxic levels in the plasma.

- **Fluoroquinolones**
  - Not recommended as first line agents for low tract infections unless there is a high level (> 10% - 20%) of trimethoprim-sulfamethoxazole resistance.

**MANAGEMENT OF UTI'S**

- Quinolones are acceptable first-line agents for upper UTI's in many guidelines.

- Severe pyelonephritis can be treated with IV fluoroquinolones or an aminoglycoside with or without ampicillin or an extended spectrum cephalosporin with or without an aminoglycoside.

- Complicated UTI's, including upper UTI and bacteremic UTI respond well to IV amoxicillin and gentamicin.

- If patients do not have systemic signs there is no need to start antibiotics immediately.

**MANAGEMENT OF UTI'S**
SEPSIS: TO TRANSFER OR NOT?

Perspectives of the American Medical Director’s Association

Transfer to hospital ED often causes more problems such as translocation trauma and colonization with drug resistant bacteria.

In the early stages of mild to moderate or uncomplicated infections, residents can be treated with oral quinolones, intramuscular injections of third-generation cephalosporins, or a broad spectrum oral antibiotic for common bacterial illnesses.

When sepsis is suspected or validated by blood culture, transfer may be warranted because there will be requirements for specialized interventions, technological support, and monitoring that cannot be met by the typical SNF.

Advance directives, as well as patient and family preferences have to be considered when making the decision.
THANK YOU!

Reducing Risk of Sepsis in Long Term Care