**Maine Medical Center**

**Department of Emergency Medicine**

**Journal Club Summary Template**

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| **Date:** 8/17/2017 | **Presenter Name:** Jason Block, MD |

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| **Article Citation:**  Abetz JW, Adams NG, Mitra B. Skin and soft tissue infection management failure in the emergency department observation unit: a systematic review. Emerg Med J. 2016;0: 1-6. |
| **Country(ies):**  Australia |
| **Funding Source(s):**  None Stated |

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| **Purpose** |
| **Research Question(s):**  What are risk factors associated with treatment failure for skin/soft tissue infections?  What is the management failure rate for skin/soft tissue infections in ED observation units?  None Stated |
| **Hypotheses:**  None Stated |
| **Study Purpose:**  There is a high failure rate of management of skin/soft tissue infections in ED observation units (up to 38% in one study). The purpose is to identify the rate of treatment failure and risk factors associated with treatment failure and the. Inappropriate observation placements can contribute to ED overcrowding and delaying inpatient treatment by hospitalists. |

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| **Methods** |
| **Study Design:**  Systematic review |
| **Outcome(s) *[or Dependent Variable]:***  Treatment failure – defined as inpatient admission, stay >28 hours, death |
| **Intervention *[or Independent Variable]:***  Risk factors identified in studies |
| **Ethics Review:**  IRB Review  IACUC Review  Other:  None Stated |
| **Research Setting:**  United States emergency departments |
| **Study Subjects:**  All comers admitted to observation unit with planned stay <28 hours (4 hours in ED + 24 hours in observation unit) with primary diagnosis of cellulitis or other skin/soft tissue infection. |
| **Inclusion Criteria:**  Primary diagnosis of cellulitis admitted to ED observation unit (plan for <24 hour stay in observation unit) |
| **Exclusion Criteria:**  Observation on outpatient basis or if management failure was defined as return to the ED. Studies also excluded from systematic review if they were not solely SSTI. |
| **Study Interventions:**  N/A |
| **Study Groups:**  N/A |
| **Instruments/Measures Used:**  OVID, Medline, CINAHL Plus, Cochrane Library, PubMed, PsycINFO, Embase |
| **Data Collection:**  1119 unique articles identified, 10 included in final systematic review, 9/10 reported management failure rate. Abstracts were reviewed by two authors, if there was disagreement, the third author would come to consensus. Authors identified 6 retrospective cohort studies, 3 prospective cohort studies, and 1 case-control study to include in the review.  Quality of article was assessed and data including: population, management failure percentage, mean age, sex proportion, and risk factors were extracted. |
| **Data Analysis:**  ***A priori* sample size calculation?**  Yes  No  Not Described  N/A  **Statistical analyses used:** I2  **Adjustment for potential confounders?**  Yes  No  Not Described  N/A  **If yes, list:** |

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| **Results** |
| **Study participants:**  All comers admitted to observation unit (planned stay <28 hours) with primary diagnosis of cellulitis or other skin/soft tissue infection |
| **Brief answers to research questions *[key findings]:***   1. The management failure rate ranged from 15-38% - reported in 9/10 studies 2. Fever, high total WBC count, and known MRSA exposure were the most commonly reported variables associated with management failure |
| **Additional findings:** |
| **Limitations:**  Demographics – DM, immunocompromised, wounds/ulcers, chronic edema  Study heterogeneity precludes meta-analysis  No differentiation of SSTIs – necrotizing fasciitis, abscess, simple cellulitis  No distinction between IV and oral antibiotics  No definition of reason for failure in CDU |

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| **Clinical Implications** |
| **Applicable?** Yes  **Feasible?** Yes  **Clinically relevant?** Yes    **Comments:** Admission to the CDU for cellulitis is a daily occurrence. Taking these risk factors in to consideration can help better disposition the patient, whether it be as an inpatient or home. |
| **Level of evidence generated from this study** |
| Ia: evidence obtained from meta-analysis of randomized controlled trials  Ib: evidence obtained from at least one randomized controlled trial  IIa: evidence obtained from at least one well-designed, controlled study without randomization  IIb: evidence obtained from at least one other type of well-designed quasi-experimental study  III: evidence obtained from a well-designed, non-experimental study  IV: expert committee reports; expert opinion; case study; case report |

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| **Additional Comments/Discussion/Notes** |
| 3/10 (including the most robust study – Lane et al.) are pediatric focused, which do not apply to our observation unit at MMC |