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# Reducing Lead Time and Enhancing Quality of Infection Management in a Cancer Center Urgent Care Clinic

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# Disclosures

- We have no financial or professional disclosures related to this topic



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# Sepsis Statistics

- Most common cause nonmalignant death in oncology<sup>1</sup>
- Severe sepsis occurs in 14% oncology patients<sup>1,2,3</sup>
- Mortality from severe sepsis and/or septic shock 30-40%<sup>1,2,3</sup>
- Early recognition saves lives<sup>4</sup>
- Standardized protocols for sepsis management are proven to enhance patient outcomes<sup>5-9</sup>



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# Oncology Urgent Care Clinic



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- Comprehensive Cancer Center
  - U.S. East Coast University Hospital; 1000+ beds, 83 inpatient medical oncology and hematologic malignancy beds
  - Daily clinic volume- Medical Oncology 150-200/ day, Acute Hematologic Malignancy/ Transplant 50-60/day, Radiation 300-400/day
- Operation hours
  - Staff hours: Advanced Practitioner- 0800- 2000; RN 0800- 1830, Clinical technician 0800-1630
  - Walk-in/ appointment hours for 7 beds- 0830- 1700, Monday-Friday
- Referral to clinic (12-24 patients/day)
  - Overnight Center call MD (three saved spots)
  - Medical and Radiation oncologists receiving calls from patients
  - Walk-in or sick patients from treatment infusion or physician visits
  - Triage nurse calls
  - Emergency department morning referrals



# Project Overview



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## Scope

- Evaluate clinic workflow and identify practices that are amenable to lean improvements
- Implement one clinical algorithm for practice and evaluate impact on time from presentation to treatment

## Goals

- Reduce lead time from presentation to definitive treatment for patients presenting with fever/ possible infection
- Enhance adherence to sepsis management recommendations
- Create consistency among clinicians
- Acute management of fever is equivalent or better quality than Emergency Department



# Design



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- **Lean processes**
  - Observation of practice
  - Chart audits
  - Staff and customer interview
- **Practice changes**
  - Sepsis screening and management algorithm
  - Electronic Antimicrobial order-sets
  - On-unit first dose antimicrobials
  - Streamlined radiology approval processes
- **Evaluation**
  - Compare pre and post-protocol activities
  - Compare to Emergency Department Care
  - Staff and customer interviews



# Results

- **Data Collection**
  - 5 months prior to protocol
  - Implementation phase 2 months
  - 5 months after implementation
- **Evaluable patients**
  - Emergency department pre-protocol- 22
  - Urgent Care pre-protocol- 15
  - Urgent Care post-protocol- 15
- **Comparison of demographic variables-** no significant differences age, gender, diagnosis
- **Time variables**
  - Time from arrival to antibiotic given reduced from 521 min to 331 min
  - Time from antibiotic order to administration reduced from 119 min to 50 min



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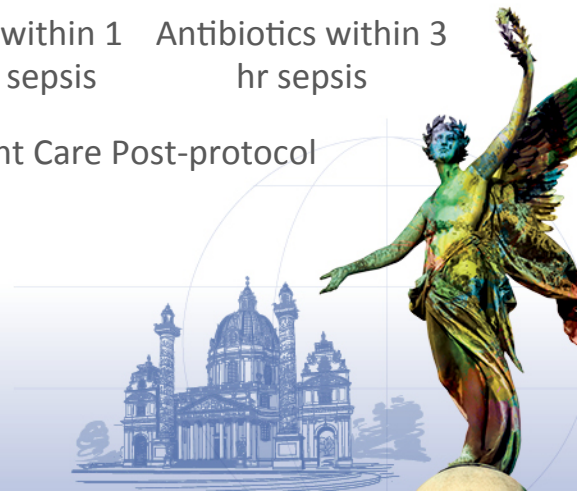
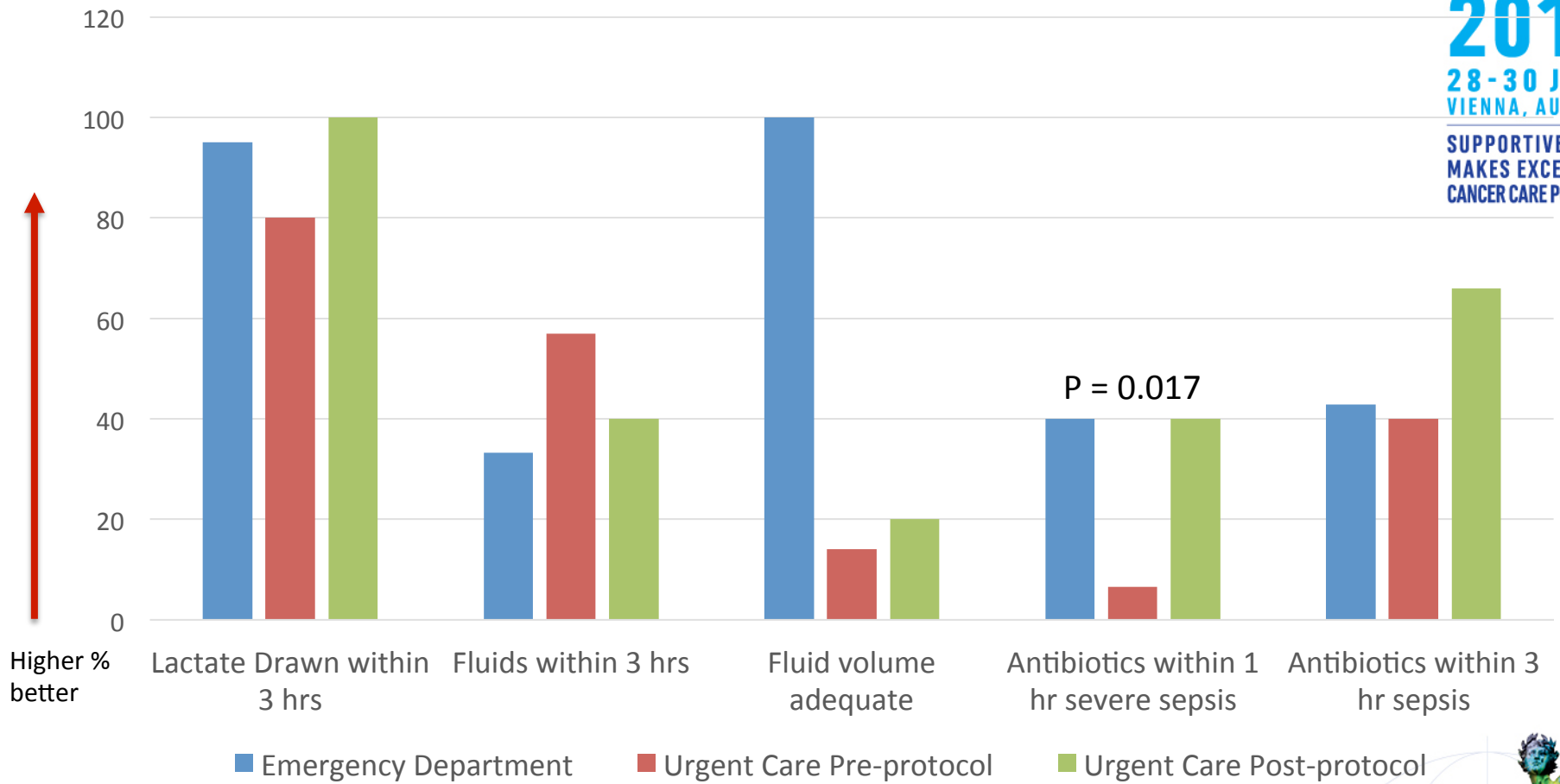


# Quality Sepsis Interventions



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# Discussion

- Lead time from presentation to urgent care reduced
- More timely urgent antibiotic administration
- Staff consistency increased among regular staff
- Urgent care sepsis management equivalent to emergency department care except in fluid management
- The major reason for incomplete interventions is transfer to inpatient unit prior to completion and lack of rapid follow-up after admission
- Oncologists are biased against large volume crystalloid fluid administration and influenced protocol adherence



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# Follow-up Plans

- Urgent care staff actions
  - Additional workflow changes and algorithm revision
  - Clinic open Saturday 0800-1700
  - Patients not transferred to inpatient care until interventions complete
  - Implementation electronic alerts
  - MASCC score only used in less symptomatic patients for safety of outpatient management
- Re-education of providers and academic detailing on individual patient management
- Revised electronic alerts to reduce excessive false positive sepsis messages
- Comparison study of screening tools



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