Relevant wish list with statistical significance:

1) Age, Gender, race, ethnicity, socio-economic status, suspected infection in days at point of entry, number of days stayed in ICU, number of days stayed in hospital, Co-morbidities (diabetes, heart disease, cancer, chronic lung disease, tuberculosis, human immunodeficiency virus, severe liver disease, severe kidney impairment), hospital readmission, site of infection.

2)) Metabolite biomarkers like anion gap, glucose, INR, bicarbonate, creatinine, lactate, BUN

3) Cell biomarkers like hematocrit, hemoglobin, platelet, WBC, INR

4) Vitals like heart rate, systolic BP, diastolic BP, mean BP, temperature, spO2, urine output

5) Protein biomarkers for progression of sepsis like procalcitonin, CRP, D-dimer

6) Blood culture results – bacteria or virus infection, type of bacteria, specific strain, treatment protocols, previous history of antibiotic and corticosteroid use, type of antibiotics used, time of administration of antibiotics, antibiotic resistance, antimicrobial resistance, prevalence of hospital acquired infections (HAI).

7) ICD codes associated with sepsis:

    a) DRG 791 Prematurity with major problems
    https://www.icd10data.com/ICD10CM/DRG/791

    b) DRG 793 Full term neonate with major problems
    https://www.icd10data.com/ICD10CM/DRG/793

    c) DRG 870 Septicemia or severe sepsis with mv >96 hours
    https://www.icd10data.com/ICD10CM/DRG/870

    d) DRG 871 Septicemia or severe sepsis without mv>96 hours with mcc
    https://www.icd10data.com/ICD10CM/DRG/871

    e) DRG 872 Septicemia or severe sepsis without mv>96 hours without mcc
    https://www.icd10data.com/ICD10CM/DRG/872

    f) DRG 974 HIV with major related condition with mcc
    https://www.icd10data.com/ICD10CM/DRG/974

    g) DRG 975 HIV with major related condition with cc
    https://www.icd10data.com/ICD10CM/DRG/975

    h) DRG 976 HIV with major related condition without cc/ mcc

https://www.icd10data.com/ICD10CM/DRG/976

8) Alert level: High admit volume; High alerts based on spikes in vitals and drastic change in biomarkers; number of alerts in the last 24 hours; previous alerts in the last 30 days.

9) Other factors: Fluid intake, food intake, alcohol intake, constipation, formation of fistulas during surgery, contamination of surgical instruments, Invasive devices such as intravenous catheters or breathing tubes, sepsis readmissions.

Potential broad wish list (if available):

1) Age, Gender, race, ethnicity, socio-economic status, suspected infection in days at point of entry, number of days stayed in ICU, number of days stayed in hospital, Comorbidities (diabetes, heart disease, cancer, chronic lung disease, tuberculosis, human immunodeficiency virus, severe liver disease, severe kidney impairment), hospital readmission, site of infection

2) Scoring systems like SIRS, qSOFA, LODS, EWS (early warning scores), MEWS (Modified Early Warning Score), NEWS (National Early Warning Score), APACHE-II

3) Metabolite biomarkers like anion gap, bicarbonate, creatinine, chloride, glucose, lactate, potassium, sodium, BUN

4) Cell biomarkers like hematocrit, hemoglobin, platelet, WBC, INR

5) Vitals like heart rate, systolic BP, diastolic BP, mean BP, temperature, spO2, urine output

6) Inflammatory protein biomarkers like CCL4, CCL5, CXCL10, E-Selectin, G-CSF, IL-1A, IL-1RA, IL-1B,Il-2, Il-3, IL-4, IL-6, IL-8, IL-10, IL-12, IL-17A, IL-22, IL-23, IL-33, IL-36B, MCP-1, PAI-1, MMP-1, MMP-8, MMP-9, Resistin, S100A8, S100A9, TNF-alpha, CCL2, Collagen IV alpha, FasLigand, ICAM-1, Thrombomodulin, VCAM-1, Galectin-3, MPO, Ialpha1/COL1A1, Pentraxin 3, serum amyloid P component (SAP), soluble programmed death-ligand 1 (sPD-L1), Syndecan-1, HMGB-1, histone-H3, PTX-3, VLA-3 (a3b1)

7) Vascular injury and BBB permeability biomarkers: S100B, PAI-1, Ang-1, Ang-2, ZO-1, OCLN

8) Protein biomarkers for progression of sepsis like procalcitonin, CRP, D-dimer, IP-10, presepsin, Cystatin-C, TRAIL, fibrinogen, calprotectin

9) Cell surface receptor biomarkers: cluster of differentiation (CD)-13, CD14, CD25, CD64, human leukocyte antigen (HLA-DR), TREM-1, sPD-1, urokinase plasminogen activator receptor (suPAR), sTNFR-1

10) Lipoproteins: LDL, HDL, T-cholesterol

10) Complement activation biomarkers: C4d, factor Bb, C3, C3a, and C5/C5a

11) Hormone and peptide precursor biomarkers: adrenomedullin (MR-proADM), NT-proBNP

12) Non-coding RNAs and miRNA markers: long non-coding metastasis-associated lung adenocarcinoma transcript 1 (lnc-MALAT1), microRNA (miR)-125a, long non-coding RNA maternally expressed gene 3 (lnc-MEG3), and the lnc-MEG3/miR-21 axis, miR-125b

13) Blood culture results – bacteria or virus infection, type of bacteria, specific strain, treatment protocols, previous history of antibiotic and corticosteroid use, type of antibiotics used, time of

administration of antibiotics, antibiotic resistance, antimicrobial resistance, prevalence of hospital acquired infections (HAI).

14) Condition at risk for fluid overload: presence of ICD-10 codes: COPD, CKD, and CHF

15) Alternative diagnosis: presence of ICD-10 codes: COPD, CKD and CHF, myocardial infarction, stroke, acute respiratory failure

16) ICD codes associated with sepsis:

a) DRG 791 Prematurity with major problems
https://www.icd10data.com/ICD10CM/DRG/791

b) DRG 793 Full term neonate with major problems
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f) DRG 974 HIV with major related condition with mcc
https://www.icd10data.com/ICD10CM/DRG/974

g) DRG 975 HIV with major related condition with cc
https://www.icd10data.com/ICD10CM/DRG/975

h) DRG 976 HIV with major related condition without cc/ mcc
https://www.icd10data.com/ICD10CM/DRG/976

17) Alert level: High admit volume; High alerts based on spikes in vitals and drastic change in biomarkers; number of alerts in the last 24 hours; previous alerts in the last 30 days.

18) Other factors: Fluid intake, food intake, alcohol intake, constipation, formation of fistulas during surgery, contamination of surgical instruments, Invasive devices such as intravenous catheters or breathing tubes, sepsis readmissions.