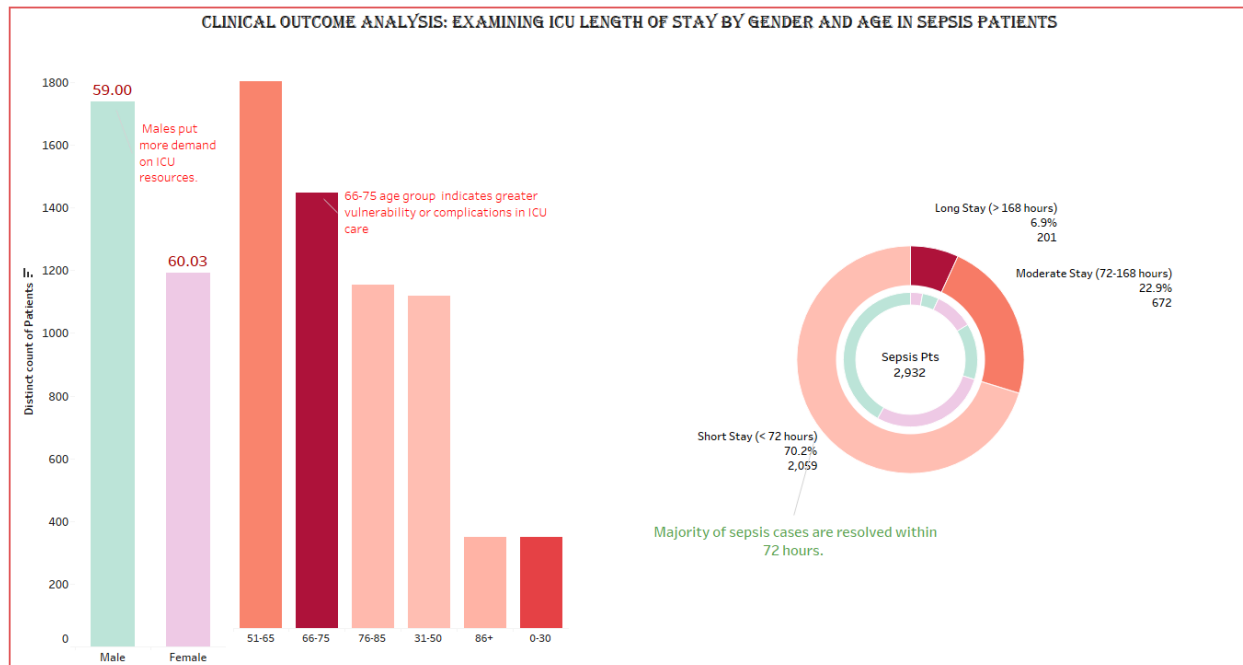


Clinical Outcome Analysis with Demographic Parameters



Sepsis is a life-threatening condition caused by the body's response to infection, leading to widespread inflammation, organ failure, and death. Data analysis helps identify early indicators, predict outcomes, and optimize resource allocation, improving patient care and reducing ICU overcrowding.

Clinical outcome analysis with ICU length of stay (LOS) metrics can provide insights into the efficiency and effectiveness of patient care, identifying patterns, outcomes, and potential areas for improvement.

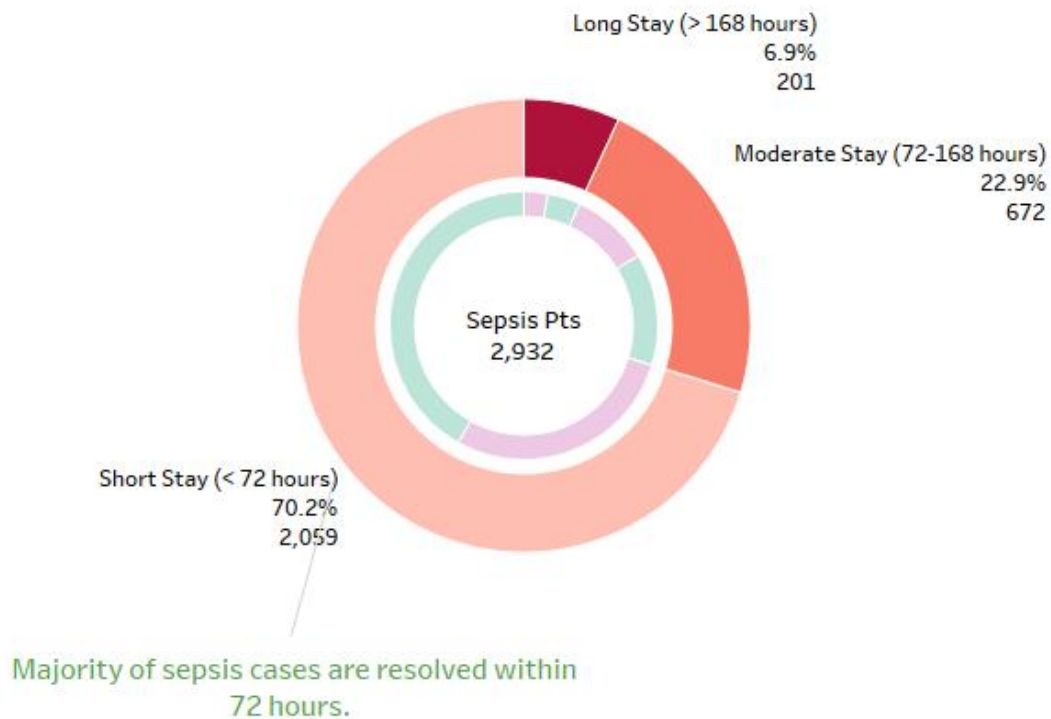
Tool Used: Tableau

 Click the Link to view the full dashboard :

<https://public.tableau.com/app/profile/shanmuga.priya7085/viz/ClinicalOutcomeAnalysisWithDemographicParametersageandgender/ICULOSAnalysis?publish=yes>

Analysis Questions:

Are most sepsis patients experiencing short, moderate, or long ICU stays, and what are the gender patterns within each group?



Insights from ICU Length of Stay (LOS) Sunburst Chart for Sepsis Patients:

1. The majority Sepsis patients have short ICU stays:
 - 70.2% (2059 patients) had a short stay (<72 hours).
 - This suggests that most sepsis cases are stabilized within 72 hours
2. Moderate stays are less common:
 - 22.9% (672 patients) stayed between 72–168 hours.
 - These could represent more complicated sepsis cases needing extended ICU support.
3. Long stays are rare:
 - Only 6.9% (201 patients) stayed >168 hours.

- This indicates that prolonged ICU care for sepsis patients is relatively uncommon.

4. Gender-wise trend:

- In every stay category, males are higher than females.
- Consistent male dominance may suggest either higher incidence (means more males are getting sepsis compared to females), higher severity, or higher survival needs for ICU care among males.

Is the Length of Stay Different by Gender?



The average ICU LOS is 59 hours for males and 60.03 hours for females, showing a very small difference (~1 hour).

Gender does not significantly influence the length of ICU stay once sepsis develops.

How Does the Age of Sepsis Patients Influence the Average Length of Stay (LOS) in the Hospital?

Reasons for the kind of Avg LOS across different age groups:

1. 0–30 years (Avg LOS 62.65 hours):
 - Younger patients often have better recovery potential but may require longer monitoring if sepsis is complicated, leading to a moderate LOS.
2. 31–50 years (Avg LOS 55.12 hours):
 - Middle-aged patients tend to recover faster compared to older groups, and aggressive treatment is often successful, leading to a shorter LOS.
3. 51–65 years (Avg LOS 58.87 hours):
 - Older middle-aged adults may have more comorbidities (like diabetes, hypertension) that slightly increase LOS compared to younger patients.
4. 66–75 years (Avg LOS 66.58 hours – Highest):
 - Older adults typically have more severe infections, slower recovery, and multiple health issues, leading to the highest average LOS among all groups.
5. 76–85 years (Avg LOS 55.45 hours):
 - LOS decreases compared to 66–75, possibly because early palliative care decisions or less aggressive interventions lead to shorter hospital stays.

Early palliative care decisions mean that for some very elderly or critically ill patients, doctors and families decide earlier to focus on comfort (pain management, quality of life) instead of trying every possible aggressive treatment (like surgery, ventilators, ICU care).

6. 86+ years (Avg LOS 55.86 hours):
 - Like younger groups, because of early discharge, higher mortality rates, or less intensive treatments, rather than full recovery stays.