

Adherence to Evidence-Based Guidelines for the Management of Pneumonia in a Tertiary Care Center in Riyadh

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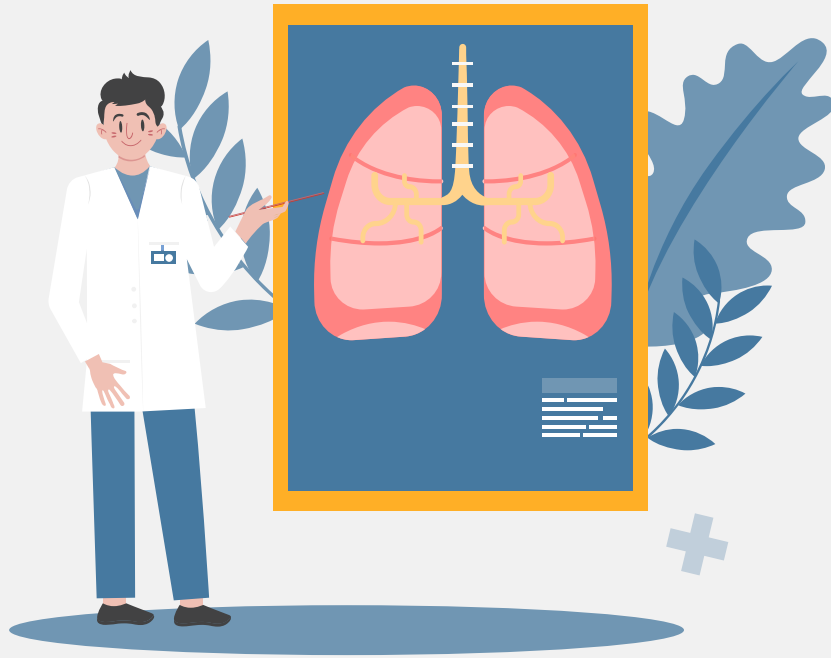
RESULTS



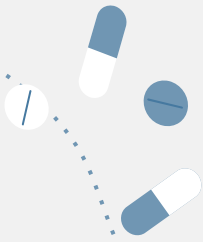
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INTRODUCTION



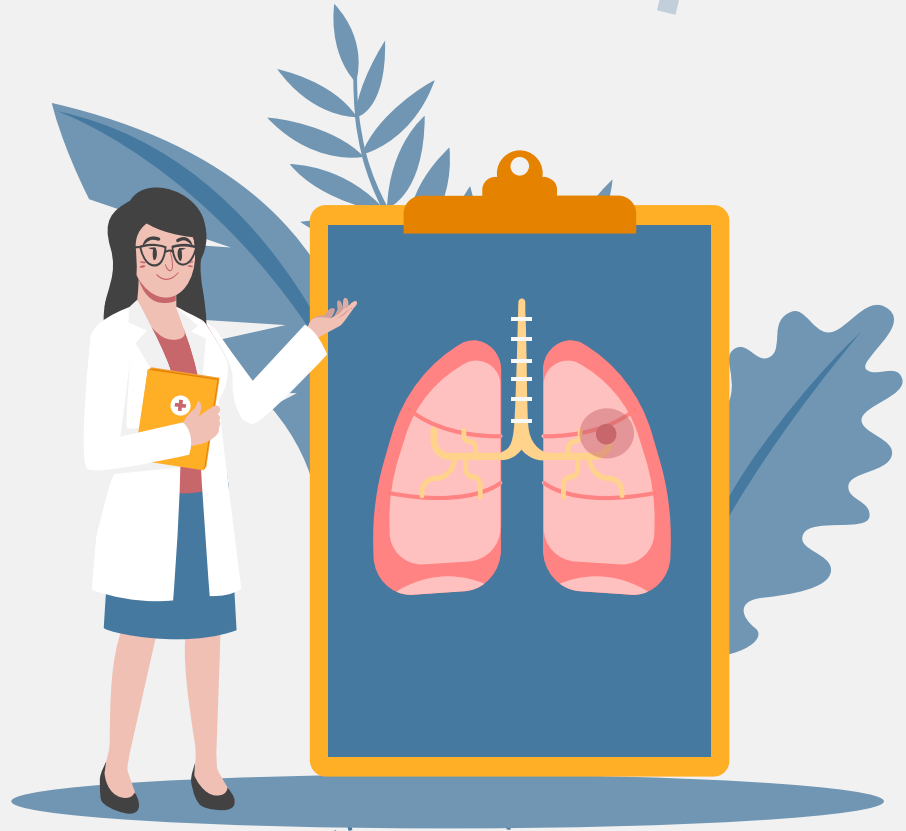


INTRODUCTION



- Pneumonia is one of the most common causes of morbidity and mortality around the world. It can be categorized into Community-acquired Pneumonia (CAP), Hospital-acquired Pneumonia (HAP) and Ventilator-associated Pneumonia (VAP)
- In Saudi Arabia, CAP was diagnosed as the most common community-acquired infections (CAI). While HAP was accounted for only 4.4% (was among the least common) among other hospital-acquired infections (HAI)
- Adherence to evidence-based guidelines for the management of such infections is crucial, as it reduces the mortality rate, length of hospital stay, and duration of antibiotic therapy when treating infections appropriately
- However, adherence may differ among physicians and is conditioned by many factors such as site of care, correct timing of initiating the therapy, and the choice of empiric therapy

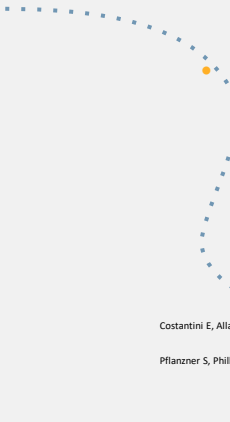
LITRETURE REVIEW

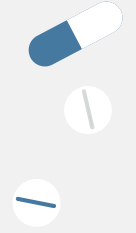
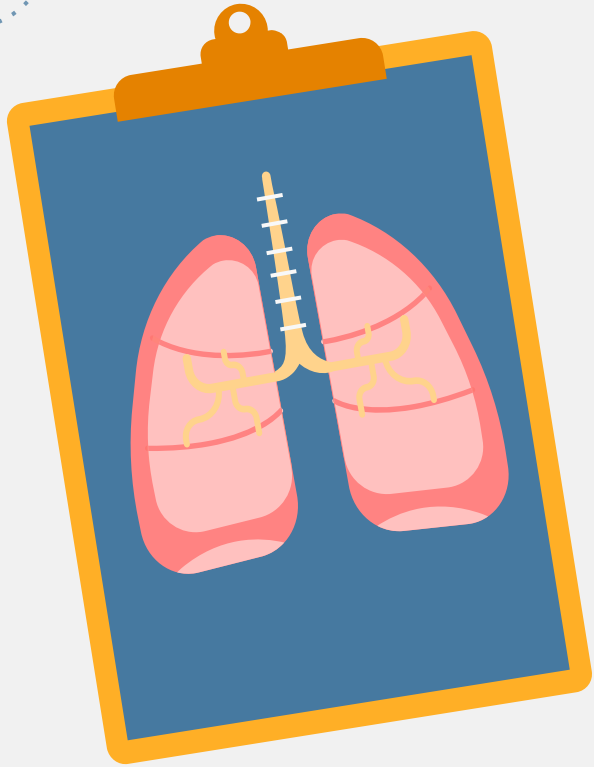




LITERATURE REVIEW



- Non-adherence to the evidence-based guidelines is a common issue among healthcare providers. Many studies showed high non-adherence rate globally
 - A study conducted by Costantini et al showed that the rate of non-adherence in a teaching hospital in Italy increased from 31.25 % (in 2005) to 43.3% (in 2012)
 - Another study conducted by Shelby Pflanzner et al showed that the noncompliance rates to CAP and HAP guidelines by health care practitioners in the Emergency Department were 55% and 41%, respectively
 - To the best of our knowledge, there is no existing data available regarding the rate of physician's adherence to the Infectious Diseases Society of America (IDSA) guidelines in the management of different types of pneumonia in Saudi Arabia
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OBJECTIVES



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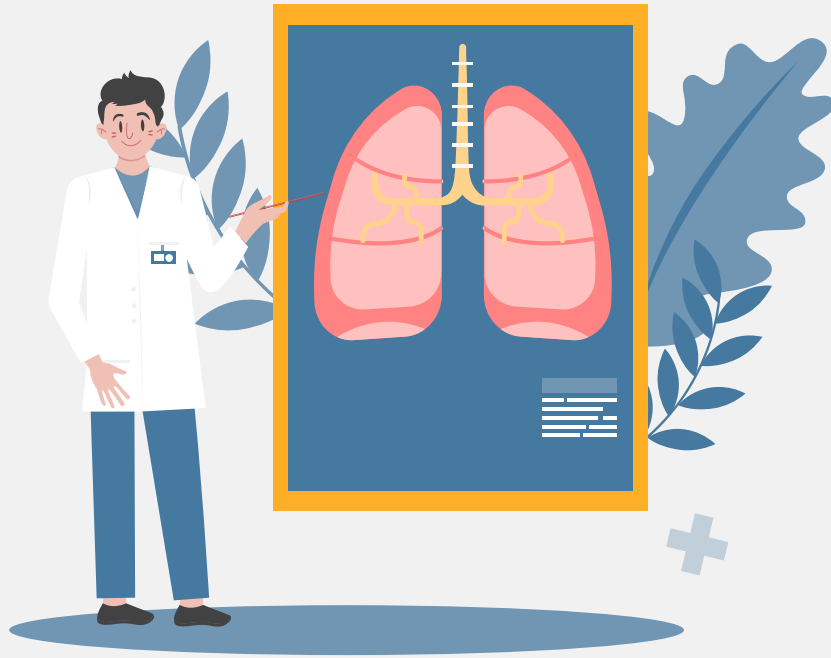
Primary

To assess the adherence rate to IDSA guidelines for the management of CAP and HAP/VAP



Secondary

Compare the rate of clinical cure, length of stay and mortality rate among the patients that were treated according to the IDSA guidelines versus those who were treated regardless of the guidelines recommendations



METHODOLOGY



METHODOLOGY



Study design

Single-center, retrospective observational study was conducted at a tertiary-care hospital in Riyadh, Saudi Arabia



Study duration

12 months





METHODOLOGY



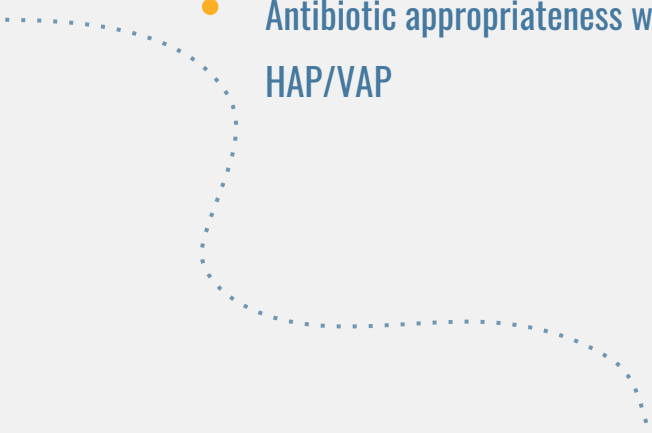
- Inclusion criteria:
 - All adult patients who were ≥ 18 years of age and have been diagnosed and treated in the hospital for CAP, HAP or VAP

- Exclusion criteria:
 - Children
 - Pregnant women
 - Immunocompromised patients (HIV, malignancy, on chemotherapy or systemic corticosteroids)
 - Patients with COVID-19 infections



METHODOLOGY



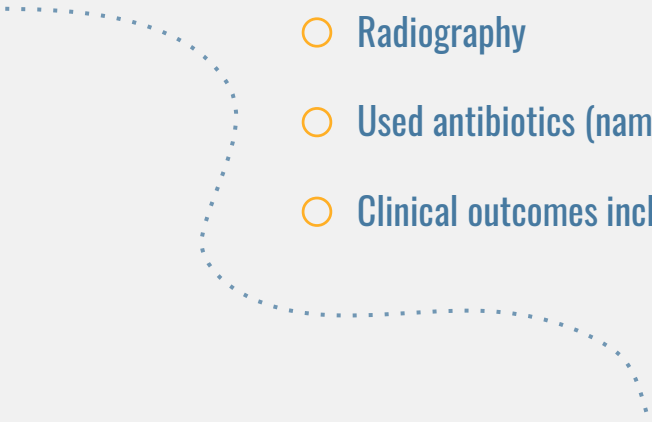
- Data were collected from hospital electronic information system which is known as “EsiHi”
 - A retrospective chart review has been conducted from November 2019 to November 2021
 - Antibiotic appropriateness was evaluated based on IDSA guidelines for the management of both CAP and HAP/VAP
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METHODOLOGY



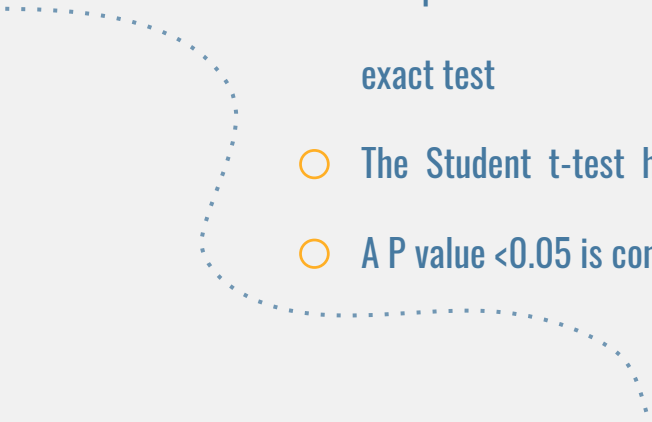
- **Study variables:**

- Demographics
 - Type of infection
 - Microbiology cultures
 - Radiography
 - Used antibiotics (name, dose, route of administration, dosage form, frequency and duration)
 - Clinical outcomes including clinical cure, in-hospital mortality and length of hospital stay
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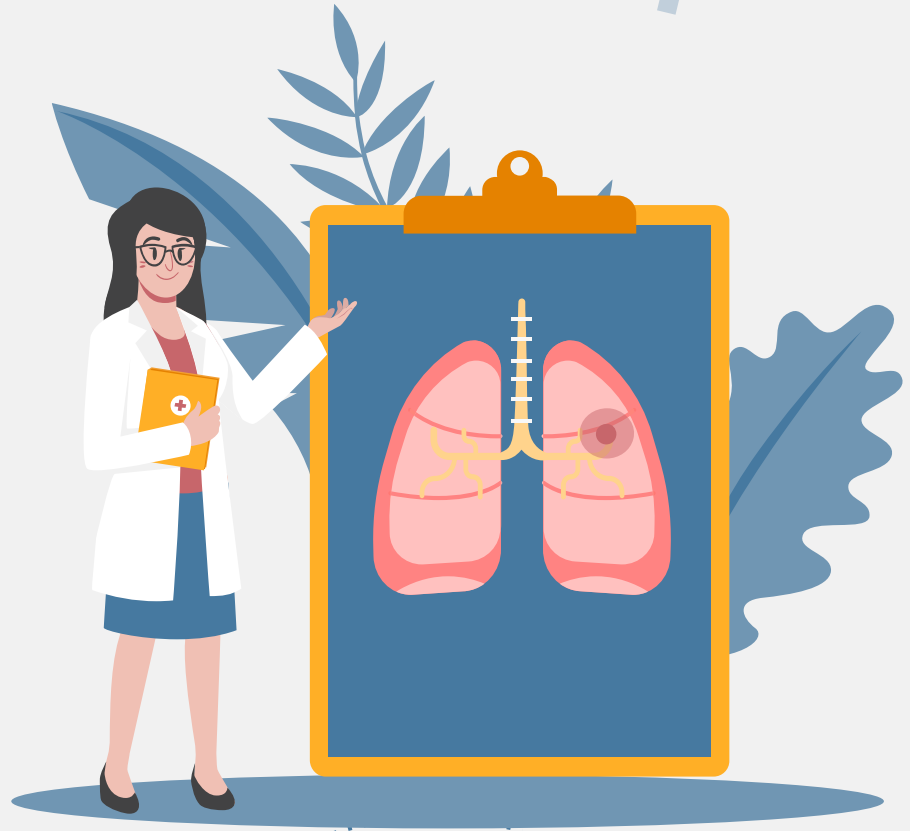


METHODOLOGY

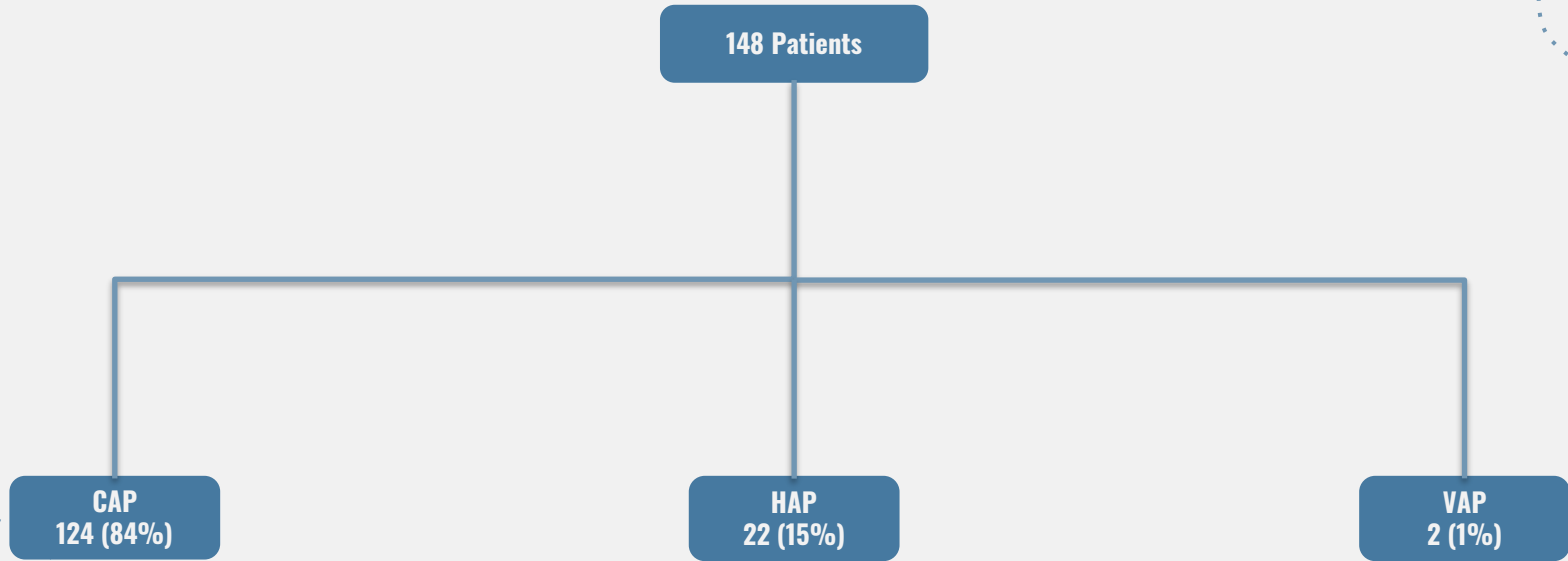


- **Statistical analysis:**
 - STATA 15.1 (StataCorp LP, College Station, Texas, USA) software has been used for data analysis
 - Descriptive statistics using mean, standard deviation, frequencies, and percentages have been performed
 - Comparisons between groups were made for categorical variables with the use of the chi-square test or Fisher exact test
 - The Student t-test has been used to compare means between groups of continuous variables
 - A P value <0.05 is considered significant
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RESULTS



RESULTS



A total of 148 patients diagnosed with different types of Pneumonia were included in the study

RESULTS

Table 1
Demographic Data

Characteristic	n= 148
Age _± SD	65 _± 20 (range: 18-104)
Male, n (%)	86 (58.1)
Female, n (%)	62 (41.9)
Active smoker, n (%)	17 (11.5)
Admitted to ICU, n (%)	24 (16.2)
Mechanical ventilation use, n (%)	21 (14.2)

RESULTS

Table 2
Charlson Comorbidity Index

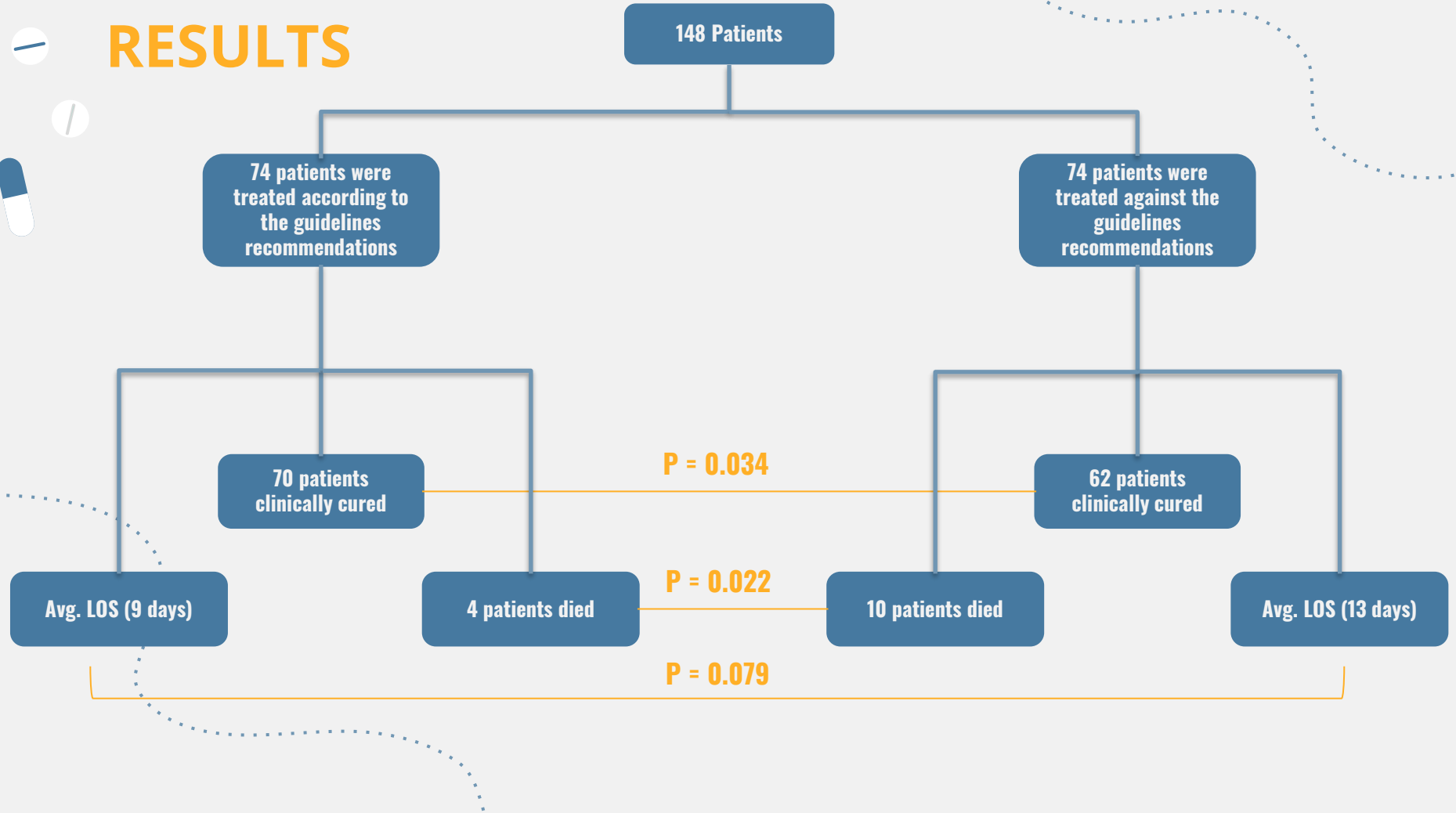
	CAP	HAP	VAP	Total
Prior myocardial infarction	12	8	0	20
Congestive Heart Failure	31	10	0	41
Peripheral Vascular Disease	6	0	0	6
Cerebrovascular disease	16	5	1	22
Dementia	9	2	0	11
Chronic pulmonary diseases	8	3	0	11
Rheumatologic disease	7	1	0	8
Peptic Ulcer Disease	4	1	0	5
Mild liver disease	2	1	0	3
Diabetes mellitus (DM)	64	12	0	76
Cerebrovascular (hemiplegia) event	1	0	0	1
moderate to severe renal disease	18	7	0	25
DM with chronic complications	19	5	0	24
Moderate to severe liver disease	0	0	0	0
Average Calculated Charlson Comorbidity Index	3.78	5.23	0.5	

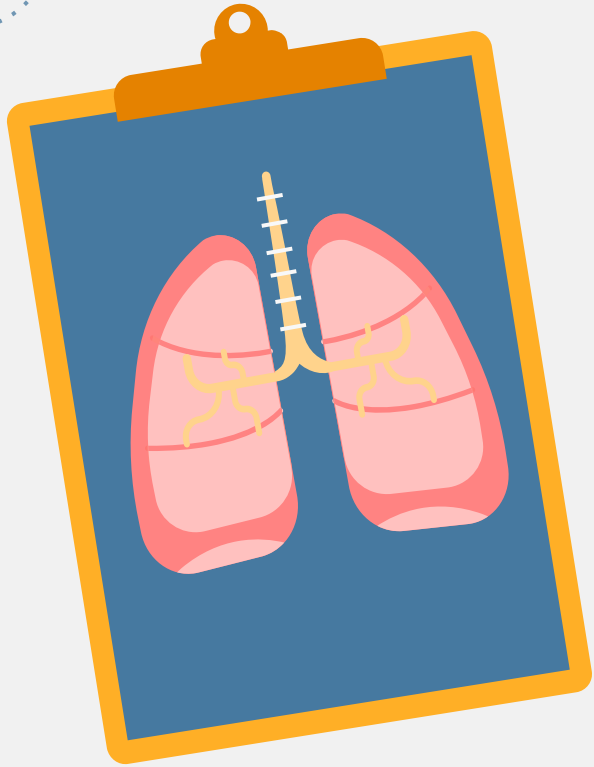
RESULTS

Table 3
Isolated pathogens

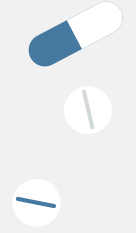
Pathogen	N (%)
None	115 (77.7)
Escherichia coli	11 (7.43)
Staphylococcus species	9 (6.08)
Klebsiella pneumoniae	5 (3.38)
MRSA	3 (2.03)
Yeast	3 (2.03)
Acinetobacter baumannii	2 (1.35)
Pseudomonas aeruginosa	2 (1.35)
Enterococcus faecalis	1 (0.68)

RESULTS





CONCLUSION





CONCLUSION

Non-adherence to the evidence-based guidelines has been observed in 50% of patients treated for pneumonia. In addition, higher clinically cure rate, shorter length of stay and lower mortality rate have been observed in patients who were treated based on the evidence-based guidelines. Therefore, we recommend to improve the adherence rate among physicians in order to have better outcomes

THANKS!

Any questions ?

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