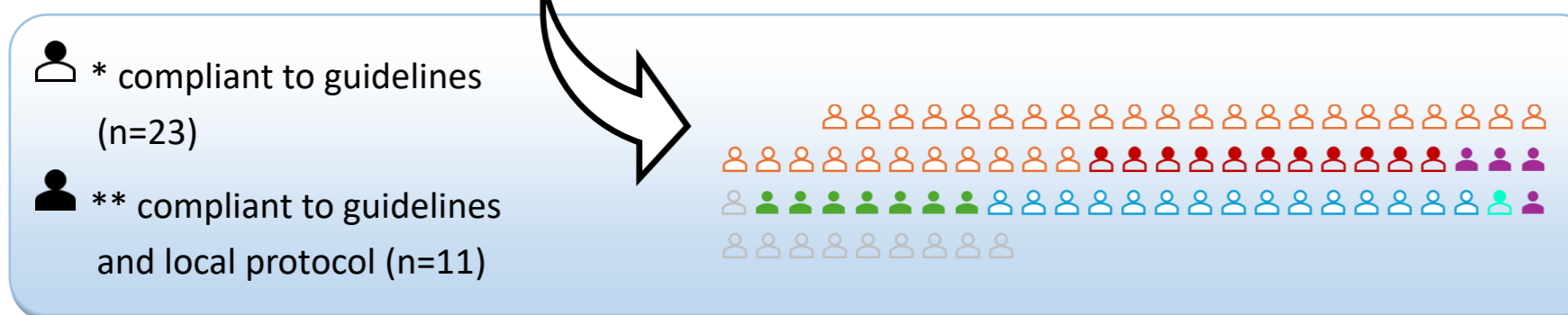
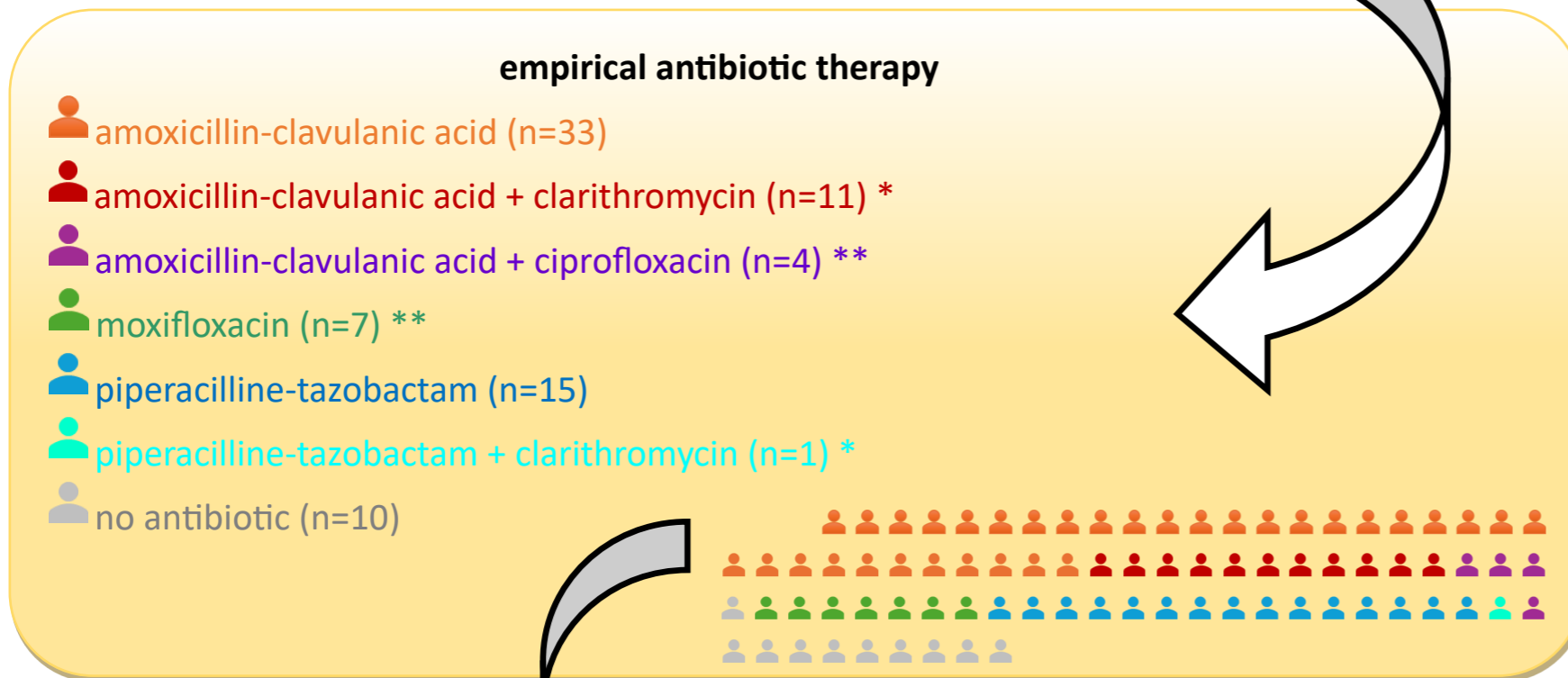
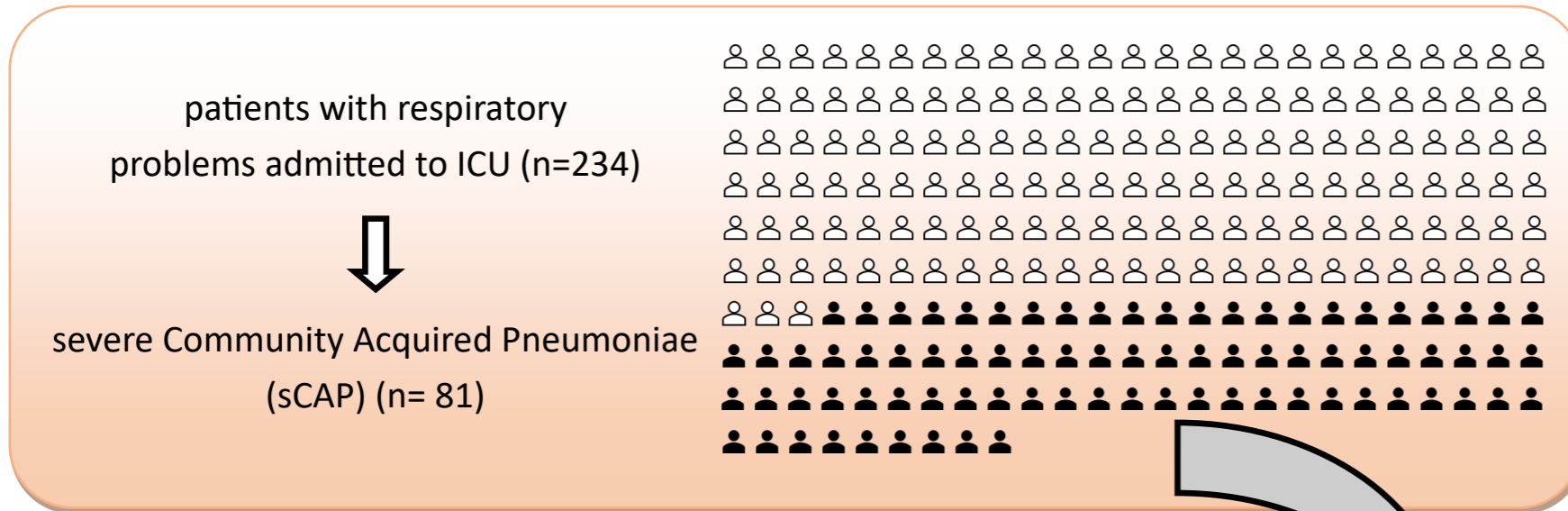


# Protocol compliance for empirical antibiotic therapy in patients with severe Community Acquired Pneumonia (sCAP) admitted to the ICU of a tertiary hospital

Dries Knaeps<sup>1</sup>, Liesbeth Heremans<sup>1</sup>, Jeroen Vandenbrande<sup>1</sup>, Anneleen Neuts<sup>1</sup>, Kristof Nijs<sup>1,2</sup>, Bjorn Stessel<sup>1,2</sup>, Jasperina Dubois<sup>1</sup>



**Introduction:** The term sCAP is used for patients with CAP admitted to the ICU as they require vital organ support, primarily because of respiratory failure or shock. Despite improvements of ICU care in latest decades, mortality of sCAP remains high. Empirical antibiotic guidelines have been published for patients with sCAP advising a combination of a beta-lactam antibiotic plus a macrolide or quinolone. In Jessa, guidelines proposed by an internal antimicrobial stewardship program, advice a combination of amoxicillin-clavulanic acid and ciprofloxacin, or moxifloxacin alone in patients with a known IgE mediated allergy to penicillin. If risk factors for Multi-Drug Resistant Organisms or Pseudomonas are present, a combination of piperacillin-tazobactam and ciprofloxacin is advised.

**Methods:** In this retrospective study, we included all patients admitted to the ICU at Jessa Hospital, Hasselt with an admission diagnosis of 'sCAP' from 01/01/2022 until 31/12/2022. We investigated whether recommendations for empirical antibiotic treatment were correctly applied.

**Results:** Of the 234 patients admitted to our ICU in 2022 with 'respiratory problems', 81 patients were classified as sCAP (34,62%). The empirical antibiotic therapy that was mainly given, is listed in the figure. Additional macrolides or fluoroquinolones were administered in only 22,54% of patients. In contrast with our own Jessa guidelines, when a combination of antibiotics was given, macrolides appeared a first choice over fluoroquinolones, which were only given to 5,46% of patients. Moxifloxacin was given only to patients with a known allergy to penicillin.

**Conclusion:** Although guidelines suggest combining a beta-lactam antibiotic with a macrolide or quinolone to treat sCAP, the latter was only given to about 20% of patients admitted to our ICU. Clinical evaluation of patients can deviate antibiotic practices. Education about current guidelines is mandatory to improve adherence to existing worldwide and local guidelines.

<sup>1</sup> Department of Anesthesiology and Intensive Care Medicine, Jessa, Hasselt.  
<sup>2</sup> UHasselt, Faculty of Medicine and Life Sciences.