

CREATION AND VALIDATION OF AN ALGORITHM FOR CATEGORIZING EMERGENCY ROOM VISITS AS JUSTIFIED OR UNJUSTIFIED: A SPECIALIZED TOOL FOR THE ISRAELI HEALTHCARE SYSTEM

Roman Leshinski, R.N., PhD, Kreitman School of Advanced Graduate Studies, Ben-Gurion University of the Negev, Israel.

Ygal Plakht, R.N., PhD, Professor, Director, Recanati School for Community Health Professions, Ben-Gurion University of the Negev, Israel.

Abdulhadi Farroujha, MD, The Urgent Care and Trauma Center (ER), Assuta Ashdod Hospital, Israel.

INTRODUCTION

Unjustified Emergency Department (ED) visits are a significant global issue, leading to overcrowding, decreased patient satisfaction, reduced quality of care, and higher healthcare costs. In Israel, despite alternative healthcare settings, ED visits reached 1.9 million in 2022, yet only 24% led to hospitalization.

OBJECTIVES

To develop and validate a structured algorithm tailored specifically for the Israeli healthcare system, aiming to:

- Classify ED visits as justified or unjustified.
- Improve community-based physician referral decisions.
- Optimize healthcare resource utilization.

METHODOLOGY

- **Stage 1:** 577 physicians and nurses completed a structured survey classifying 31 common ED visit reasons.
- **Stage 2:** Development of a four-step classification algorithm refined by expert consensus using the Delphi method.

PRACTICAL APPLICATION

- Algorithm assists real-time decision-making by healthcare providers in ED referrals.
- Reduces unnecessary ED visits by clarifying criteria for justified visits.
- Supports the efficient allocation of healthcare resources.

RESULTS

- Significant professional agreement on 29 of 31 ED visit categories ($p < 0.001$).
- Expert panel clarified disputed cases, emphasizing the clinical significance of specific treatments and diagnostic tests.
- Developed and validated a four-step algorithm:
 - a. Administrative criteria
 - b. Diagnostic tests
 - c. Treatments provided
 - d. Discharge diagnoses

CONCLUSION

The validated algorithm provides a rigorous, context-sensitive tool, significantly enhancing decision-making quality, improving patient outcomes, and optimizing healthcare resources within Israel's healthcare system.



Keywords: Emergency Medicine, Algorithm, Justified Visits, Healthcare Optimization, Israel

Contact Information:

Roman Leshinski
romanl@post.bgu.ac.il

*List of discharge diagnoses that considered justified for an ED visits

Figure 1. The algorithm for classifying ED visits, which consists of four steps. The algorithm determines whether a visit is justified or unjustified by following the outlined steps. In the first step, the patient's condition is evaluated against the criteria listed in Blocks 1, 2, and 3. If none of these criteria are met, the next step, as described in Block 4, directs the user to consult the list of diagnoses.

