



**Service Priorities and Programmes**  
**Electronic Presentations**

**Convention ID:** 1264

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**Evaluating the validity & reliability of the triage scale in geriatric patients of a regional emergency department of Hong Kong**

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**Keywords:**

Emergency Department

Triage

Validity

Reliability

Geriatric

**Introduction**

Geriatric patients have multiple comorbidities, limited physiological reserves & atypical clinical presentations, which present a unique challenge in Emergency Department (ED) triage.

In Hong Kong, the Hospital Authority adopts a 5-level triage system in the ED. Patients are triaged by trained nurses, which is based on their presenting conditions & the criteria suggested in the triage scale. Special considerations to geriatric patients are not taken into accounts.

**Objectives**

This study evaluated the validity & inter-rater reliability of this triage scale in geriatric population (age  $\geq$  65) in a regional ED.

**Methodology**

This study consisted of 2 phases. The objective in phase 1 was to evaluate validity. 295 cases, stratified for their triage category, were randomly selected for review during 01/11/2016-31/01/2017. The exclusion criteria included scheduled follow-up, discharge against medical advice, left without being seen or death before arrival. Validity was established by comparing the actual triage category against 1.) an expert panel, which had 1 ED Associate Consultant & Nursing Officer with extensive quality assurance experiences in ED triage and 2.) the need to receive life-saving interventions. Triage note of these records were extracted to make case scenario for phase 2. The objective of phase 2 was to evaluate inter-rater reliability. 8 ED nurses were randomly selected & grouped into

**Result**

The correct triage rate against expert panel was 68.5%, with 16.3% and 15.3% over-triage and under-triage rate. Quadratic weighting kappa for agreement was 0.72 (95% CI 0.53, 0.91) reflecting a substantial agreement (Landis & Kochs criteria). The sensitivity, specificity and positive likelihood ratio against the need to receive LSIs

were 75% (95% CI 50%, 90%), 97% (95% CI 94%, 99%) and 26 (95% CI 13, 55) respectively. Fleiss kappa for inter-rater reliability was 0.50 (95% CI 0.47, 0.54) for both nursing groups, reflecting a moderate agreement and was independent to their ED experiences. Results suggested that our triage scale has substantial agreement for validity & is sensitive to identify geriatric patients who need LSIs. However, it is consistently lower than previously local findings. Modifications in application may be required in geriatric patients. Future study should focus on exploring areas with low validity & variability in application.