Predicting the Risk of Hospital Admission in Older Persons – Validation of a Brief Self-Administered Questionnaire in three European Countries [§][*]

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OBJECTIVES: To validate the P_{ra} (probability of repeated admission) questionnaire, a widely used self-administered tool for predicting future health care use in older persons, in three different European health care systems.

DESIGN: Prospective study with 1-year follow-up in Germany, the United Kingdom, and Switzerland.

PARTICIPANTS: 9,713 independently living community-dwelling people aged 65 years and over.

MEASUREMENTS: Self-administered 8-item P_{ra} questionnaire at baseline. Self-reported number of hospital admissions and physician visits during one year of follow-up.

RESULTS: In the combined sample, areas under the receiver operating characteristic curves (AUROCs) were 0.64 (95% confidence interval (CI) = 0.62-0.66) for the prediction of ≥1 hospital admission and 0.68 (95% CI = 0.66-0.69) for the prediction of >6 physician visits during the following year. AUROCs were similar between sites. In comparison, prediction models based on persons' age and gender alone exhibited a poor predictive validity (AUROC ≤0.57). Compared to low-risk persons (P_{ra} score <0.5), high-risk individuals had a 2.3fold (95% CI = 2.1-2.6) increased risk of hospital admission, and a 2.1fold (95% CI = 2.0-2.2) increased risk of having >6 physician visits.

CONCLUSION: The P_{ra} instrument exhibits relatively good validity for predicting future health service use on a population level in different health care settings. Administrative data have shown similar predictive validity, but in practice, such data are often not available. The P_{ra} is likely of high interest for governments and health insurance companies worldwide as a basis for programs aimed at health risk management in older persons.