

# The inappropriate use of the Emergency Room service in Reggio Emilia: risk factors among immigrants and italians

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## RATIONALE

In Reggio Emilia province (Northern Italy) the immigrant population is rapidly increasing: from 2,8% in 1998 to 10,3% in 2008. Immigrants come from more than 130 different countries and both the rapid rise and the increasing diversity of population pose new challenges to health system.

For that reason a periodical monitoring of relevant health issues has been undertaken by the Epidemiology Unit, aimed to offer to Local Health Authority useful information to plan and assess health services.

One of the most pressing issue is the Emergency Room (ER), which is facing a growing inappropriate use, due to immigrants and italians, but immigrants inappropriate access is nearly 12 percent points higher than italians.

For either long-term planning and health policy reasons, understanding the main reasons of inappropriateness is important.

## OBJECTIVE

To investigate the reasons of inappropriate use of Emergency Room (ER) service, analysing the ER access certificates. The study was aimed to find out which factors, among demographic data and those related to the access, could have the greatest influence on the risk of inappropriateness.

## MATERIALS AND METHODS

Data of accesses to Reggio Emilia's ER from 2005 to 2007 were analysed considering only resident population (N=479,564).

Descriptive univariate analyses were performed by means of Standardised Emergency Room Ratio (SERR) and its 95% CI, in order to compare immigrants vs italians.

ER access appropriateness was assessed on the basis of the codes assigned according to the severity of symptoms complained.

The outcome variable: *inappropriate ER use* was defined as "white code access" (not urgent).

Demographic variables of the patient (*age, sex, nationality*) and access variables (*cause, day of the week, hour*) were examined as explanatory factors.

Multivariate Logistic Regressions (Odds Ratio - OR, 95% CI) were performed to relate independent variables to the presence of an inappropriate access; stratifying by age and citizenship.

Immigrants were identified as people with a foreign nationality with exclusion of the More Developed Country (MDC).

## RESULTS

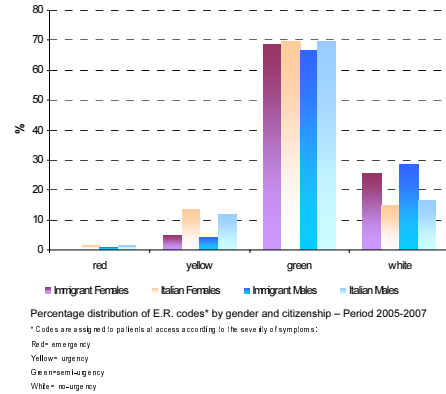
In an overview of the overall ER access, taking into account the reference populations and adjusting for age, the standardised ratios (see table below) point out that immigrant males and females access to the ER more frequently than italians (SERR: 1,71; 95% CI: 1,69-1,72 for males and SERR: 1,27; 95% CI: 1,26-1,29 for females).

The analysis by nationality shows some differences: among males, chinese have a ER access less than italians; among females, chinese, indian, pakistan, ukrainian and moldavian women have a lower rate in ER access.

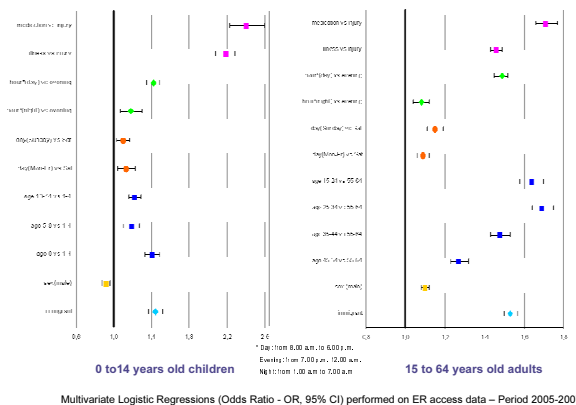
First descriptive data about inappropriateness in ER access show that, both for men and women, the percentage of not urgent ER access (white codes) among immigrants is higher than among italians (28,6 vs 16,5 and 25,7 vs 15,14 respectively) (see figure).

0 to 64 Years	MALES			FEMALES		
	N.	SERR	95% CI	N.	SERR	95% CI
ITALIANS	155.779	1,00	- - -	138.443	1	- - -
IMMIGRANTS	37.667	1,71	1,69 - 1,72	23.695	1,27	1,26 - 1,29
MOROCCO	29.418	1,82	1,80 - 1,84	18.527	1,27	1,25 - 1,29
ALBANIA	4.970	1,72	1,67 - 1,77	2.795	1,41	1,36 - 1,47
CINA	1.519	0,79	0,75 - 0,83	1.184	0,76	0,72 - 0,81
INDIA	2.523	1,15	1,11 - 1,20	1.208	0,78	0,73 - 0,82
PAKISTAN	2.353	1,30	1,25 - 1,35	813	0,84	0,78 - 0,90
GHANA	1.770	1,64	1,57 - 1,72	1.353	1,68	1,60 - 1,78
NIGERIA	851	2,02	1,89 - 2,16	1.005	2,02	1,89 - 2,15
ROMANIA	1.018	1,24	1,17 - 1,32	1.123	1,14	1,08 - 1,21
UKRAINE-MOLDAVIA	855	1,34	1,25 - 1,43	1.795	0,92	0,88 - 0,96

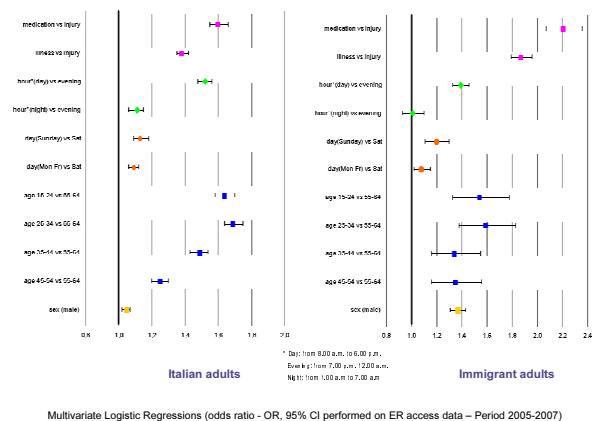
Number of ER accesses (N), Standardised ER Ratio (SERR) and 95% Confidence Interval (CI), by gender and nationality - Period 2005-2007



In multivariate analysis, adjusting for the other explanatory factors, such as access cause, day of the week and hour, the over frequency of white codes for immigrants still persists, both for children and for adults (OR 1.46, 95% C.I. 1.37-1.52 and OR 1.57, 95% C.I. 1.53-1.60 respectively).



Among adults, stratifying by citizenship, both italians and immigrants show an inverse relation between age and inappropriateness: men are more frequently inappropriate users. A similar pattern is shown for hour and day of the week. The main difference can be found among the causes of inappropriate ER access: immigrants causes are mainly diseases and medications, which could be usefully treated by their GPs.



## CONCLUSIONS

Better understanding the factors associated with inappropriate access to the ER service, health services, mainly primary care, will promote improvements according to the risk factors identified.