An algorithm to identify patients with type 2 diabetes mellitus among undocumented migrants using data on drugs dispensation by charities: a pilot study.

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Background and objectives: The composition of the Italian population is rapidly changing due to the massive phenomenon of migration. Health data of natives and documented migrants are easily accessible, but this does not happen for the growing population of undocumented migrants. Since type 2 diabetes mellitus is one of the main causes of morbidity and mortality also in developing countries, we propose a method to identify the undocumented diabetics based on the only available data, i.e. the drugs dispensed to them by charities.

Methods: In this pilot study, we analysed the databases of two Italian non-governmental organisations (NGOs) containing the records of all drugs dispensed to 12,386 undocumented migrants from January 1st, 2013 to December 31st, 2016, with the aim to identify patients treated for type 2 diabetes (T2D) on the basis of demographic data and dispensed medicines. Medications were classified according to the Anatomical Chemical Therapeutic (ATC) classification. All the patients with at least one dispensation per year of any A10 (antidiabetic) drug were selected. An algorithm to match this observation with the diagnosis of T2D was developed.

Results: The algorithm identified 660 patients with T2D. An *ex-post* evaluation carried out on 400 of these patients demonstrated a full concordance with the diagnostic records. When our patients were grouped according to ethnicity, we found that all ethnic groups contributed a comparable percentage of patients with T2D. Also, no difference was seen between the group of EU citizens living in poverty cared for by the NGOs and any of the ethnic groups.

Conclusions: This algorithm can be tested in other situations to identify patients treated for T2D when no diagnostic codes are available; if its efficacy and reliability are confirmed, this method could become a useful tool for different aspects of public health.