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Out-of-hours primary care services: Demands and patient referral patterns in a Veneto region (Italy) Local Health Authority

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ABSTRACT

Purpose: The aim of this study was to describe the characteristics of patients admitted to an out-of-hours (OOH) service and to analyze the related outputs.
Setting: A retrospective population-based cohort study was conducted by analyzing an electronic database recording 23,980 OOH service contacts in 2011 at a Local Health Authority in the Veneto Region (North-East Italy).
Method: A multinomial logistic regression was used to compare the characteristics of contacts handled by the OOH physicians with cases referred to other services.
Results: OOH service contact rates were higher for the oldest and youngest age groups and for females rather than males. More than half of the contacts concerned patients who were seen by a OOH physician. More than one in three contacts related problems managed over the phone; only ≈10% of the patients were referred to other services. Many factors, including demographic variables, process-logistic variables and clinical characteristics of the contact, were associated with the decision to visit the patient's home (rather than provide telephone advice alone), or to refer patients to an ED or to a specialist. Our study demonstrated, even after adjusting, certain OOH physicians were more likely than their colleagues to refer a patient to an ED.
Conclusion: Our study shows that OOH services meet composite and variously expressed demands. The determining factors associated with cases referred to other health care services should be considered when designing clinical pathways in order to ensure a continuity of care. The unwarranted variability in OOH physicians' performance needs to be addressed.

1. Introduction

There is robust evidence of the ability of primary-care-oriented health systems to provide better, more equitable health care at a lower cost [1,2]. Out-of-hours (OOH) primary care services are a fundamental part of primary

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health care services as a whole, providing support in situations where patients' clinical conditions are such that they cannot wait until the next working day to see a doctor. Appropriate OOH services are important for a well-functioning h24/7/365 primary health care system, and any efforts to redesign a country's primary health care organizations in order to improve their quality of care must necessarily discuss how OOH care is organized too [3,4]. OOH services are organized differently in different countries [3–8], but are frequently based on family doctors operating in small- or large-scale organizations. In their review of the literature, Van Uden et al. [9] found at least seven common models for providing primary care to patients out of hours, while a more recent analysis by Linda Huibers et al. [10] identified nine organizational models currently in use in various parts of Europe. The literature also describes some relatively new models, such as OOH primary care integrated in hospitals, deputizing services, minor injury centers, and walk-in centers [11].

To better organize OOH services, customizing them to the users' needs, it is important to characterize the demand for these services. To incorporate this service as part of a network – along with other primary care services and with second-level health care – it is also essential to know what part of this demand is handled directly by the OOH service and what proportion is referred to other services.

To our knowledge, this is the first population-based study to analyze the demand for OOH services in a given territory, characterizing the patients using OOH facilities and analyzing the OOH services they receive, focusing on the features of the demand that is met directly by the OOH service as opposed to the those of the demand forwarded by the OOH physicians to other health care services, such as emergency departments (ED) or specialist visits.

2. Materials and methods

2.1. Context

The INHS (Italian National Health System) was established in 1978 and was modeled along the lines of the British NHS. It is a mainly public system financed by general taxation. From an organizational viewpoint, the INHS divides the Italian territory into 140 Local Health Authorities (LHAs), each responsible for providing health services to its local population. General practitioners (GPs) are primary care physicians working for LHAs as independent contractors, and they act as gatekeepers for higher levels of care. Italian GPs traditionally ran their practices alone, without any auxiliary staff, and with no formal links with other GPs [12]. The first national contract mentioning that organizational formats involving some form of cooperation among GPs could be negotiated at a local level was signed in 1996, and it was only when the contract was renewed in 2000 that the rules governing GP networks were laid out. According to the national contract in place at the time of this study, GPs willing to engage in some form of cooperation in providing health services to their patients can choose one of three formats, i.e. an association ("medicina in associazione"), a network ("medicina in rete"), or a group ("medicina di gruppo"), each of which implies a different level of cooperation between the GPs involved. In all three formats, GPs have to coordinate their office hours (remaining open until 7 pm on weekdays), and they commit to sharing guidelines and to meeting to discuss and improve their service. In the case of networks (or nets), which involve an intermediate level of cooperation), GPs also have to share an electronic database of their patients. While GPs in associations and nets can continue to work at their own offices, the group format (with the highest level of cooperation) requires that GPs share the same clinic, so they can also jointly invest in medical equipment and employ nursing or administrative staff. In the LHA analyzed in this study, some GPs form part of a more advanced, integrated primary care unit called a UTAP, which is like a House of Health [13], which works with structured practices, protocols and procedures and with specialists which supply outpatient treatments.

A deputized service has been in use ever since the inception of the NHS in 1978. The organization of this service later acquired regional differences when responsibilities for the NHS were decentralized, but there is still a nationally shared agreement [14] defining the tasks, activities and salaries of OOH physicians, and the infrastructure and resources to be allocated to OOH services by the LHA. In Italy, OOH services are now provided by about 12,000 physicians working under an agreement with the LHA at 2952 OOH service delivery points [15] that operate every day of the week from 8 pm to 8 am, and at weekends from 10 am on Saturdays to 8 am on Mondays, plus bank holidays, and also from 8 am to 8 pm on days when GPs are attending continuing education courses. The OOH services receive telephone requests from patients and deliver the service by providing advice over the phone, visiting a patient at home (or in a rest home), or examining them as walk-in patients (at premises provided by the LHA).

2.2. Setting

The LHA "ULSS 4 – Alto Vicentino" serves the northwestern part of the Veneto region, a mainly hilly and mountainous area with a population of about 190,000. In 2011, foreign residents accounted for approximately 10.3% of the population (a proportion about 2% higher than the national average of foreign residents) [16]. The LHA 4 has three OOH service delivery points, each of which also has an OOH clinic for walk-in patients.

In 2006, the LHA 4 implemented computer technologies to connect the OOH service physicians with both GPs and hospital emergency departments (EDs), consistently with the recommendations in the recent international literature concerning the development of coordinated systems for the exchange of information [1,4] to support a valid integration – particularly at local level – of all services related to emergency and after-hours health care. The aim of this approach is to assure a better, more patient-centered care around the clock. Thanks to the implementation of this system, this is one of the first LHAs in Italy to provide an accountable OOH service.