SPECIAL ARTICLE

Primary Care Pediatrics in Italy: Eighteen Years of Clinical Care, Research, and Teaching Under a National Health Service System

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ABSTRACT. This article reviews how Italian National Health Service (NHS) pediatricians have tried to fulfill the obligations of modern primary care providers in a managed care environment, with special reference to the experience of the Veneto region in Italy and compares this situation with the present changes of the health system in the United States.

Italian NHS primary care pediatricians work independently in their offices, providing acute and chronic patients to all children 0 to 14 years old: NHS primary care physicians, including 7000 pediatricians, contract directly with the government for the care of patients through a capitated reimbursement system.

Twenty-nine independent associations of community pediatricians have been formed with the primary goal to pursue research and education in primary care pediatrics, in addition to traditional care. Several multicenter collaborative research studies at the national level have been organized and four university residency programs are training their residents in community-based pediatricians’ offices also, giving priority to activities specific to ambulatory care and follow the suggestion of an Italian work group on ambulatory pediatric training.

The NHS has allowed the Italian pediatrician to focus on patient care and education rather than business. Computerization has been applied to the practice of medicine through the development of electronic medical records, particularly in the Veneto region. This technology allows combining effective clinical care with outcome researches and facilitates continuing medical education and residents’ training programs.

Italian primary care NHS pediatricians have tried to identify and address patient’s needs as well as the needs of a primary care provider in a managed care system. Recent and possible future modifications in the health system in the United States and in Italy need to be examined to learn from similarities and differences. Pediatrics 1997;99(1). URL: http://www.pediatrics.org/cgi/content/full/99/1/88; primary care, network research, managed care, national health care, education.

ABBREVIATIONS. NHS, National Health Service; SIP, Società Italiana di Pediatria; FIMP, Federazione Italiana Medici Pediatri; ACP, Associazione Culturale Pediatri; APREF, Associazione per la Ricerca e Formazione in Pediatria.

BACKGROUND

Since 1978 the Italian National Health Service (NHS) has provided pediatric primary care to children through the use of community-based pediatricians (pediatra di base). This article describes this system, with special emphasis on the activities of the NHS pediatricians of the Veneto region, and compares the Italian system to the changing health care system in the United States.

The Italian NHS requires that all children have an identified primary care provider, either a pediatrician or a family practitioner, depending on the patient’s age. Italian NHS pediatricians work in their own private offices, providing primary care for patients from birth to 14 years of age and are compensated under a capitation system. The NHS pediatricians are usually the sole patient entrance to NHS secondary and tertiary care in the 0 to 6 age range, while parents can choose between a pediatrician or a general practitioner for their children’s care between 6 and 14 years of age.

Over 10 years ago Italian primary care pediatricians recognized the necessity of adapting their practice to the needs of a changing health care system as well as the new morbidity of childhood illnesses as described by Haggerty. In responding to these needs, 29 associations of practicing community pediatricians, mostly unaffiliated with academic institutions, were independently created with the mission of research, teaching, and continuing medical education. This was based on the concept that all these areas, in addition to traditional clinical care, should be included in the activities of a modern practicing pediatrician.

The following sections describe the main characteristics of clinical care, research, and education in the Italian pediatric primary care system. The “Comment” section will examine the integration of these different activities and address the relationship between the Italian NHS and the United States health system with regard to pediatric care.

CLINICAL CARE

In Italy there are almost 6000 NHS primary care pediatricians (1994 data) taking care of more than 4 million patients from birth to 14 years of age, the majority of these patients are less than 6 years old. The Veneto region in Northern Italy, where the Italian authors practice, has approximately 4.3 million inhabitants. Of these, 562 000 are less than 14 years old.
of primary care providers for their children after 6 years of age.

Acute, chronic, and preventive care, through both office and home visits, are provided by the pediatricians, who are reimbursed under a capitated system that pays about $8.50 a month per patient. The NHS pediatrician cares for an average of 700 up to a maximum of 1000 patients, is available for patients from 8 am to 8 pm, Monday to Friday and 8 am to 2 pm on Saturday and, performs 4000 to 4500 visits a year. In addition to acute ambulatory and home care, responsibilities include coordinating the care of chronically ill patients, consulting with subspecialists, performing well baby health checks and all certifications for school activities, parent’s absence from work, indemnities, and social welfare. Pediatricians, as well as general practitioners in the Italian NHS, are not allowed by law to take care of their patients during hospital admissions. Solo practices, mostly without nursing or secretarial staff, account for 95% of pediatric primary care practices and the pediatrician’s expenses are mostly limited to telephone and office overhead in addition to travel expenses for home visits. Immunizations are usually performed by a different NHS community service. The NHS provides night and weekend phone coverage as well as urgent home care to all patients, using moonlighting nonpediatrician physicians. Both these services are provided to all patients free of charge.

The major advantage of this system for the community is that health care is available to all children without any out-of-pocket expenses: health care costs are paid by tax money with a levy on gross income from 5% to 10%, paid principally by the employer with some employee contribution. Functionally, because all health care is funded through the government, the Italian NHS is a single payor system. This allows patients to choose their primary care physician/pediatrician, in contrast to the United States, where the employer may direct that choice. However, there is some restriction on the parents’ choice of primary care providers for their children, due to the NHS limitation, by law, of a maximum of 1000 patients per pediatrician and a relative shortage of community-based pediatricians. Over the years, this system has been instrumental in building a trusting therapeutic relationship between parents, children, and their pediatrician. In the first patient satisfaction survey performed in Italy in the Veneto region, pediatricians in the system scored highest among all other NHS services.

The Italian NHS, which accounts for approximately 8.5% of the gross domestic product (1994 data), is trying to control the increasing costs of health care by limiting physicians’ reimbursements and applying copayments to laboratory tests and NHS subspecialty consultations. This has been done without offering incentives for cost saving to physicians, which may negatively affect the patient-physician relationship. As in the United States, it is anticipated that in the future the NHS will also implement quality assurance standards using outcome assessments in primary care. As it currently functions, however, the Italian health care system has resulted in a perinatal mortality of 9.5/1000 births, a neonatal mortality of 5.9/1000 live births, and an infant mortality of 8.1/1000 births.

**RESEARCH**

The following national pediatric associations are involved in research in Italy: the Italian Society of Pediatrics (SIP–Società Italiana di Pediatria) is the predominantly academic society; the Italian Federation of Pediatricians (FIMP–Federazione Italiana Medici Pediatri) is the trade organization of community-based practicing pediatricians, responsible for the development and evaluation of continuing medical education programs for its members; and the Pediatric Cultural Association (ACP–Associazione Culturale Pediatri), formed by community primary care pediatricians and hospital and academic pediatricians, who focus on research and education in general pediatrics.

To address issues that face primary care child health providers in Italy, the previously mentioned 29 local associations of primary care pediatricians (affiliated with the ACP) have undertaken multicenter collaborative studies and developed practice guidelines through generalist/subspecialist discussions. These studies have focused on common pediatric problems not usually addressed by research based in academic centers. For example, projects independently organized by Veneto’s community pediatricians, include organizational issues of the pediatric practice, quality assurance, pharmacoeconomics of antibiotic therapy, practitioner education concerning counseling and structured paper medical records. All of these studies have been funded by the primary care pediatricians’ associations, either at the regional or national level, with one exception that was partially funded by Veneto’s Department of Health.

Because all pediatric primary care in Italy functions under a capitated system with a single payor, Italian community pediatricians have neither had the need for sophisticated accounting and billing systems, nor, due to reduced needs for office staff, high overhead costs and administrative commitments found in the United States. In the Veneto region this situation has allowed information systems experts, community pediatricians, and members of the Association per la Ricerca e Formazione in Pediatria (APREF) the ability to collaboratively focus on the development of an electronic medical record system for pediatric primary care, that serves as a powerful data collecting instrument. To assess the impact that NHS-imposed demands has had on practicing pediatricians, this electronic system will link affiliated
practices in the near future. Using statistical analysis modules developed by the same research group, data will eventually be gathered to measure and analyze the quality of services provided. It is anticipated that similar systems will be implemented elsewhere in Italy.

EDUCATION AND TEACHING

The process of becoming a pediatrician and selecting a career path in Italy begins with a university-based residency program in pediatrics (currently 4 years long, and as of next year, 5 years long) following common national requirements published by the Italian Department of Education. Residents must take yearly examinations and develop a research project that is presented at the end of the residency to become fully certified. This university certification (Diploma di Specialita) is valid nationwide. There is no national board examination. When fully certified as a pediatritian, one can apply for a job in a hospital (NHS), at a university, or as a primary care pediatrician (NHS). This process involves presenting a curriculum vitae, certifications of postgraduate training, and proof of working experience (locums, etc). Hospital and university positions, which require a copy of all publications as part of the application, are filled by a vote of committees from the respective institution. With regard to NHS primary care positions, there is a list of available pediatricians published yearly by the Health Department of the Region and a list of possible (theoretical) vacancies published twice yearly. These possible vacancies are calculated considering the number of children living in the area. A pediatrician can apply for each vacant position and the local health authorities must call the pediatricians who have applied according to their rank in the regional list. They cannot select, but only ask if the next pediatrician is available to take the job.

Continuing Medical Education (CME) is required by the NHS contract for primary care pediatricians. Each regional Health Department is responsible for the creation its own CME programs and must collaborate with the FIMP. This process usually includes the regional academic institutions. For the first time in Italy, the Regione Veneto Department of Health has designated the organization CESPER (Centro Studi per Ricerca e Formazione in pediatria territoriale), that represents both the Veneto-based community primary care pediatricians’ associations and FIMP, as the only entity for accrediting CME activity for community primary care pediatricians.

Italian pediatricians read the Rivista Italiana di Pediatria (Italian Journal of Pediatrics [SIP]), which focuses on subspeciality pediatrics; Medico e Bambino (Doctor and Child, ACP), which is mostly practice-oriented and subscribed to by pediatricians and family physicians; the Italian translation of Pediatrics (which is a condensation of two issues into one through a selection of articles made by two scientific supervisors); and Pediatrics in Review, which is fully translated. In addition, most pediatricians also read many of the foreign journals, such as Lancet, the New England Journal of Medicine, Archives of Pediatrics and Adolescent Medicine, and the British Medical Journal in their untranslated form.

Although primary care is clearly the critical base of any health care system, relatively few studies have addressed the information needs and concerns facing the practicing pediatrician with regard to the changing health care systems. These issues ultimately require incorporation into the education of pediatric residents and practitioners. In Italy there is not a formal regulatory organization corresponding to the Residency Review Committee in the United States; a committee of academic physicians provides general guidelines for postgraduate training to be approved by the Italian Department of Education. The requirements for pediatric training in Italy recently published by the Department of Education do not include community-based primary care experiences and unlike the Residency Review Committee guidelines, encourage only in-hospital training experiences. Because of its intrinsic structure, the medical education system in Italy, based in hospitals and universities, may encounter some difficulty in effectively training residents for their future careers as competent, community-based, general pediatricians.

Presentations given by community-based primary care pediatricians to pediatric residents at the University of Padova created an impetus for an educational pilot study involving primary care pediatricians and residents of the Universities of Padova, Verona, Trieste, and Milano-Monza. In these institutions, residents have been placed in primary care pediatricians’ offices for a month long rotation. A formal faculty development program to enhance the teaching abilities of the practitioners has also been organized.

After these initial activities, a work group in pediatric primary care education produced a proposal for future primary care training in pediatric residency programs in Italy. This training document suggests that in Italy:

1. The resident should attend the primary care pediatricians’ offices once a week beginning in the second and/or third year of the 5 years of postgraduate training;
2. Clinical problems that have a unique primary care dimension should be discussed in seminars scheduled throughout the program and require the participation of all residents and primary care preceptors;
3. A teaching/learning plan and educational methodology should be developed through a process of evaluation and feedback, that could provide structure for the community experience and serve as a powerful method of ongoing improvement for the resident, the preceptor, and the residency program itself.

This proposal was approved by both the SIP and FIMP Veneto sections, and obtained support from the ACP National Council. Formal acceptance also by the national executive boards of SIP and of FIMP is anticipated. This acceptance would lead to ambu-
latory pediatrics preceptorship in the primary care pediatrician’s office being officially introduced into most pediatric residency programs.

COMMENT

The challenge of managed care, which is producing major anxiety and debate among United States' health providers, has already been faced by Italian pediatricians, who have taken the risk in providing a service with a prepaid fee and almost unpredictable costs, contracting directly with the payer.

For the Italian primary care pediatrician, the NHS capitated system has allowed for a focus on patient care, research, and education rather than on cost and profit. The Italian pediatrician has a relatively stable income, independent of patients visits, but does depend on the number of patients enrolled in their panels. With health care consuming a significant percentage of the gross domestic product, as it does in the United States, there is concern about the ability to fund the NHS at current levels. There is a general feeling of being underpaid due to the significant patient overuse of the services and some uncertainty about the role of the government in financing health care in the future. There is also limited autonomy and decreased incentives for entrepreneurship and quality of care as many pediatricians have reached the maximum number of possible patients and competition is limited by the restricted ability to increase patient numbers. However, as in most systems, patients can pay privately for any medical service, primary care or subspecialty, as long as it is not performed by the patient’s identified NHS primary care provider.

Starting from opposite ends of the health care system spectrum, pediatricians in Italy as well as in the United States are experiencing pressures to change dramatically the practice of primary care pediatrics. Italian pediatricians will have to start pursuing other funding sources, such as private insurance, and solo practices, which account for 95% of pediatric primary care practices, might have to be aggregated into group practices. This evolution may be necessary to allow pediatricians to offer services which, in the future, may not be covered any longer by the Italian NHS. In contrast, the pediatrician in the United States, who has traditionally received payment from private insurance in a noncapitated system, is learning to practice in an increasingly capitated environment, where providers rather than insurance companies bear the risk. Similar to the Italian situation, solo practitioners in the United States are moving toward groups. In both systems physicians need to learn how to assume a leading role in direct negotiations with purchasers.

From a research and education perspective, community-based Italian pediatricians, in analyzing practical issues of actual concern to themselves and their patients, realized that the majority of academic institutions as well as the Italian Society of Pediatrics, mostly representing university and hospital staff, were unable to address these issues. In Italy there is no national research network, such as Pediatric Research in Office Settings, sponsored and staffed by the American Academy of Pediatrics nor an academic generalist organization such as the Ambulatory Pediatric Association. Instead, independent groups of practicing pediatricians have developed in most regions to pursue research and teaching in ambulatory settings. These groups’ enthusiasm in research and education in primary care settings has allowed several research projects to flourish and multicenter studies have been coordinated by the ACP research committee.

In the Veneto region the above mentioned changes in health care have stimulated APERF practicing pediatricians to focus on the use of electronic medical records to monitor effective preventive care as well as to manage information about outcomes and health care costs. The importance of applying computerization not only to the business of medicine but to the practice of medicine itself has also been acknowledged in the United States. Recent reports have shown how clinicians could use computerized clinical data more efficiently, reducing medication errors, therefore decreasing malpractice risks and hopefully liability costs. Future research projects using electronic medical records could be focused on population studies to assess pediatricians’ ability to provide high quality care at a level that avoids high costs and poor outcomes. Regardless of the health system, these data could determine how changes in responsibilities and activities could be linked to reimbursement adjustments.

Following trends developed in the United States regarding the structure of postgraduate medical education, there are ongoing efforts to modify future training in pediatrics in Italy to include more community-based education. Such experiences could be a way to help define the appropriate interface between primary and consultant care, a delineation that is a major requirement in managed care environments where primary care providers serve as gatekeepers for subspecialty services. As in the United States, Italian pediatric residency programs need to include practical experience in the context of a community pediatric practice, particularly focusing on primary care activities, such as relational skills and counseling and on the relatively new concepts of quality outcomes and measuring patient satisfaction in the outpatient setting. Italian community preceptors should undergo one or more preparatory training seminars within a formal community faculty development program taught by experts with graduate training and/or experience in adult and medical education. These innovative programs not only enhance the education of future and present practitioners, but could serve to return practitioners to the mainstream of the educational process in Italian pediatrics.

In the Italian managed care environment it is unlikely that financial remuneration for precepting will occur, although the NHS may accredit precepting residents as an activity, which may fulfill part of the continuing medical education requirement. Ideally, teaching should become a highly rewarding experience in and of itself, where preceptors are challenged by the presence of younger doctors, who stimulate...
them to rethink about current diagnosis and treatment of pediatric problems.

**SUMMARY**

For the last 18 years Italian primary care pediatricians have been working under the NHS in a capitated managed care environment. They have CME requirements and are facing the potential of formal evaluations of their activity. However, as have many pediatricians in other countries with different socioeconomic conditions and health care systems, many Italian pediatricians have demonstrated a willingness to participate in, and possibly stimulate, research and teaching.

As elsewhere, it continues to be necessary in Italian pediatrics to evaluate new information, to measure new health outcomes, and to address new issues in the educational process. This should be done in part by trying to examine, compare, and share experiences from different health systems in different countries.

The goal of primary care pediatricians all over the world has been to provide preventive care, to treat everyday and chronic illness, and to serve as advocates for their patients without regard to cultural or social status. Dimensions of this common goal have been achieved in various ways in a variety of national health care systems. Analysis about failures and successes of these different systems in a collaborative, informed, and international manner should help to meet the needs of our world’s future, the children.

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