Trends in pediatric radiology in the United States

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Abstract Long-term trends in pediatric radiology in the United States – in the radiologic care of children, in research, in education and career development, in the Society for Pediatric Radiology, and in the field as a whole – were listed in 1995. The present article attempts to bring those trends up to date for the year 2000 and also describes trends not identified in the earlier report.

Introduction

Part of the 1995 celebration of the centennial of Roentgen’s discovery was the publication of a three-volume history of radiology. The chapter on pediatric radiology in North America [1] ended with a series of 38 generalizations, more applicable to the United States than to the rest of the continent, on recent and long-term trends in our field.

Five tumultuous years have now passed. What are the trends in pediatric radiology from the perspective of the year 2000? What 1995 trends turn out to have been ephemeral or non-existent? What new trends have developed?

The writers of this new overview of the changes in our profession are a pediatric radiologist (now in his 38th year in the field) with an interest in radiologic history (N. T. G.), and a younger but well-established pediatric radiologist and radiologic historian from another part of the country (T. A. F.). The 1995 statements [1] are quoted first, followed by our revisions for the year 2000. Many of the trends are impressions, largely or wholly unsupported by hard data.¹ Many are obvious to all of us. Some would have been a surprise to those in practice 25 years ago. Others will be surprising to the pediatric radiologists of 2025.

¹ Since verifiable facts are sparse in this article, letters to the editor with contrary opinions are particularly welcome.
In the radiologic care of children

1. 1995: “An increasing amount of radiologic activity per ill child.”

   Revision in 2000: Although the slope of the increase may be less, this trend has continued, especially for in-patients and especially where care of major pediatric illness is most thoroughly centralized. The increasing radiologic activity per child has led to a larger workload and longer hours for radiologists. The era of working only daytime hours, without evening, night, or weekend duty, is long gone [2]. The demand for night and weekend coverage by senior radiologists has increased staffing requirements considerably, as has the tendency to longer vacations, mandated by radiologists’ fatigue. The large caseload has led to more and more rapid interpretation, and the risk of error has increased correspondingly.


   2000: This trend has continued, especially for interventional techniques and when sedation is needed.


   2000: This trend has continued. The change has recently been less by the arrival of a totally new modality than because of further innovations within an established modality. Developments in magnetic resonance imaging, computed tomography, and ultrasonography are the best examples.

4. 1995: “An increasing number of pediatric radiologists who limit their activities to a small part of the field.”

   2000: This tendency seems to have weakened. To some department chairmen, impressed that subspecialization improves expertise but at the expense of availability of service, this tendency has already gone too far. They feel that smooth operation of a department of pediatric radiology, especially a small department, requires that all of its members be skilled in all techniques. Others feel that subspecialization is inevitable, particularly in the larger departments, and is also necessary to keep us on an intellectual par with the medical and surgical subspecialists with whom we work.

5. 1995: “An increasing technical quality of images, now levelling off for conventional radiographs.”

   2000: This trend has continued. MRI and CT radiologists from 1995 would be impressed by the high information content provided by the techniques available in 2000. However, a radiologist dealing with conventional radiographs would see no change in his or her films or would feel that radiographers have lost a little of their skill.


   2000: The trend has continued. This is the glory of pediatric radiology. This is how we contribute to the health of children. As evidence of this trend, think how uncommon purely exploratory operations are now and how routine such surgery used to be. Most of the recent increase in our accuracy is attributable to the three major cross-sectional modalities: ultrasonography, computed tomography, and magnetic resonance imaging.

7. 1995: “A slowly diminishing expertise in conventional radiographs, at least among radiology residents and the younger post-residency radiologists.”

   2000: The trend has continued and has become more distinct. Radiologists in training spend much of their time learning the newer modalities, and the time thus spent has been subtracted in part from the study of the older techniques. The generation affected by this is now well beyond the training stage and includes many radiologists several years into practice.

8. 1995: “A tendency, especially among younger radiologists and younger referring physicians, to trust plain film findings only when confirmed by a technically more complicated examination.”

   2000: The tendency, quite understandable in an age that reverses high-tech procedures and new approaches, has extended to many physicians and surgeons in practice. We have not yet taught our colleagues, nor have we decided ourselves, when a diagnostic sufficiency has been reached. Another factor in this trend is radiologists’ increasingly detailed knowledge of cross-sectional anatomy and their slowly waning familiarity with the anatomy shown by radiographic projections.

9. 1995: “Less reliance by referring physicians on the history and physical examination, one result being that radiologic examination is sometimes requested on vague, trivial, or unstated indications.”

   2000: Another unintended consequence of our success, this trend has persisted or increased. Imaging has become so informative that referring physicians sometimes use it indiscriminately, avoiding the time and trouble of a careful preliminary analysis of the patient’s problem. They know we can often answer questions faster and eliminate diagnostic possibilities more definitively than they can themselves.


   2000: Still true. However, magnetic resonance imaging of the heart may cause yet another shift in emphasis among diagnostic modalities. In the