

seldom-used procedures are presented, such as correcting the response parameter counts for radioactive decay. Methods of characterizing binders are detailed, from Scatchard analysis to the less well-known Hill-Sips and Cornish-Bowden plots.

Volume 2 explores random and systematic error, the use and types of quality control samples, and gives advice on the choice of an automated data reduction system. The scope of the book moves from elementary (calculating a mean and standard deviation) to more advanced statistical methods (establishing confidence limits, imprecision profiles, assessing systematic error). The explanation of imprecision profiles (called precision profiles by Roger Ekins) and their role in defining assay sensitivity is noteworthy, since readers in the United States are only now becoming familiar with this approach. The author's treatment of between-run precision and the knotty problem of how many spot quality control samples to use, along with their placement in an assay, are informative and straightforward.

These two volumes are packed with information on the fine points of analyzing ligand assays. Their programmed format makes these points easy to find, should one wish to clear up a doubt or refresh his memory. They will make a useful, practical addition to the library of anyone involved with ligand assays.

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CRITICAL DIAGNOSTIC PATHWAYS IN RADIOLOGY: AN ALGORITHMIC APPROACH. R. L. Eisenberg, J. R. Amberg. Philadelphia, J. B. Lippincott Company, 1981, 488 pp, \$52.00

In the recent past, we have seen a proliferation of numerous, novel diagnostic imaging modalities, which have been superimposed upon time-honored diagnostic methods. In applying this vast diagnostic armamentaria in a rational manner, one hopes to achieve maximum accuracy. It should be accomplished in the least invasive manner possible, while still trying to keep the cost in dollars and cents at a "reasonable" level. The aim of this multi-authored text is to provide a diagnostic "roadmap" or algorithm.

Although the book is by no means comprehensive, it does provide a rational, organized approach to twenty-eight different common diagnostic problems, ranging from the solitary pulmonary nodule to the acute abdomen, and encompassing such selected areas as hypertension, renal masses, and headache. The algorithms or flow charts for each diagnostic problem are listed at the end of each of the twenty-eight chapters. The chapters themselves provide the discussion and rationale behind the flow charts. The text is extensively illustrated and while many of the illustrations are excellent, the findings are obscure on more than a few.

From an editorial point of view, there are a few other problems. Some of the figures are reversed and mislabeled. For example, a figure of a digital subtraction study illustrated in the first chapter has interposed labeling of the subtracted and unsubtracted view. In one of the algorithms describing the work-up of renal injury, the normal and abnormal categories are reversed and until this is appreciated, the chart is quite confusing. An additional problem that this text suffers from is the minimal reference to the newest diagnostic modalities. Digital angiography is only briefly alluded to and nuclear magnetic resonance is mentioned only in the introduction. This type of deficit, while quite understandable, may limit the future usefulness of this text.

Any particular diagnostic pathway is going to have an institutional bias. An institution with a strong computed tomography (CT) service tends to use that procedure when ultrasound might

be more appropriate. Of course, the opposite might also be true. Similarly, in the evaluation of possible acute cholecystitis, ultrasound is mentioned as the procedure of choice. Although it may, in fact, be the case, in many institutions cholescintigraphy with technetium-99m labeled iminodiacetic derivatives has proven to be the most accurate means of detecting cystic duct obstruction and making a specific diagnosis of acute cholecystitis. The text only briefly mentioned this possibility. In addition, the use of Tc-99m labeled red cells or sulfur colloid in acute lower gastrointestinal bleeding is not mentioned in the appropriate pathway.

In spite of all the problems listed above, we find this work to be beneficial in at least providing a framework. While individual algorithms may have to be modified in many cases to reflect institutional bias, it appears that the text would be useful as an introductory guide to radiology residents, medical students, and non-radiologists.

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THE CONTROL OF EXPOSURE OF THE PUBLIC TO IONIZING RADIATION IN THE EVENT OF ACCIDENT OR ATTACK—Proceedings of a Symposium Sponsored by the National Council on Radiation Protection and Measurements. Bethesda, Maryland; NCRP Publications, 1982, 277 pp, \$20.00

This publication is fascinating and disturbing in that it deals with American preparedness, or lack of it, in the event of nuclear accident or attack. It is disturbing on several levels. First and foremost, the subject matter and the details of a hypothetical nuclear attack are stupefying as is the realization that it is necessary to contemplate such events. Secondly, it is disconcerting to realize what a shambles our civil defense system is in when it comes to nuclear incidents, although I confess to having some hope for a humanity that can possess nuclear weapons and not live in constant fear of their use. Finally, it is disturbing, though perhaps understandable, that the National Commission on Radiation Protection (NCRP) is considering nuclear power accidents and nuclear attack in the same context. This last concern was discussed at some length in the meeting. The reader can determine whether the advantages of pooling the nation's radiation expertise and equipment is worth the risk of further confusing the public, the press, and perhaps our potential adversaries about the reasons for future preparedness and the relative risks of these two very different eventualities.

This symposium is an outgrowth of the earlier work by the NCRP on the effects of krypton-85 release following the incident at Three Mile Island in March, 1979. It is part of a general attempt to improve on the confused response to that incident by the public, the scientific community, and the government. The symposium also serves as an introduction to the newly chartered committee SC-63 of the NCRP and as such was designed to generate ideas and questions for the committee. In attendance were representatives of the various civilian and government agencies who would be involved in such emergencies and representatives of many of the scientific and professional societies that have expertise in matters of emergency response, radiation effects, instrumentation, and medicine. Notably absent from the speakers list were current members of the press, particularly those of the electronic press, who have proven to be a crucial link in the chain of emergency response, both in positive and negative ways.

The underlying hypothesis of this project is that we can protect some significant segment of the population from the consequences of large-scale nuclear war, even though the "broad destructive" nature of such a war is recognized. Quixotic or not, the NCRP believes an informed public and elementary precautions are worth pursuing (the probability of nuclear attack is listed at 0.1 per

decade). To this end some 38 papers were presented, the first giving rather detailed effects of nuclear war and the priorities of survivors. Various estimates indicate that from 20 to 80% of us will "survive" a massive nuclear strike "though we do not envy their plight." There is an extensive discussion of decision guides about categorizing various survivor "classes", depending on their purported exposure. Of course, under such circumstances, one is referring to 5 to 100 R/day levels rather than 5 R/year, a jolting change in perspective. It is recognized that the effects other than radiologic will be the major concern following such an attack. This section of the document does contain a useful summary of current thinking on the likely scenarios of nuclear war.

The second section is devoted to the addresses of speakers from various government agencies and contains primarily descriptions of chain of command with very little indication of actions to be taken. The point is made that many federal agency functions overlap each other and state and local functions and that some central focus and coordination are necessary. Without a quick and simple response network, all of the knowledge about what to do will be useless.

A third section deals with the wealth of radiation expertise within many of the professional societies. Though totally unor-

ganized for emergency response, hospital nuclear medicine departments, for example, have thousands of operating survey meters and trained personnel who are less likely than most to "lose their heads" in an emergency. It is pointed out that the membership data banks of these societies could provide a very effective response network with only minor effort.

Some interesting tidbits from the meeting: Chester Weinberg advanced the theory that nuclear power plants serve as a deterrent to nuclear war (lack of oil dependence); Surveys show that a considerable majority of Americans favor nuclear power and that those living near such plants are even stronger supporters; One paper describes a radiation detector that you can make from items around your home (a Leyden jar in a coffee can); One analyst suggests that if a nuclear disaster is large enough in scope, the news media will actually help provide responsible information to the public!

Readers in the radiation sciences will find this book interesting from many perspectives.

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American Board of Science in Nuclear Medicine

June 6, 1983

St. Louis, Missouri

The next examination of the American Board of Science in Nuclear Medicine will be held June 6, 1983, in conjunction with the 30th Annual Meeting of the Society of Nuclear Medicine.

Specialty areas which may be chosen for examination include:

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- Radiation Protection
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Completed applications must be received by May 1, 1983.