

overexploitation and pollution on a large scale were the order of the day – To attribute the excess mortality to this would be quite natural.

After examining the evidence, the author comes to the conclusion that pollution is only one among the many factors that have contributed to decreasing life expectancy, and not the sole cause. The public health lesson from all this seems to be that just as spectacular health gains are possible through social intermediation, social change can also result in spectacular health collapse. There is no room for complacency in the face of health gains.

It is received wisdom that estrogen use in postmenopausal women is associated with a large spectrum of benefits. These include protection from heart disease as well as prevention of bone fragility leading to fractures. But all these come at a cost: the increased risk of breast cancer. In spite of this, postmenopausal estrogen is the most commonly prescribed drug in the United States. The paper by Barrett Conner and Grady weighs the risks and benefits of estrogen use in postmenopausal women by looking at published literature. The impetus for this is the realization that coronary heart disease has become the greatest threat to the health of postmenopausal women. Though breast cancer risk steadily increases with age, in absolute terms heart disease far outweighs this.

In such a situation, much depends on the strength of the evidence in either case. Most of the studies reporting the association between use of estrogen and reduction in heart disease rates have been observational studies. They are subject to a number of biases. Estrogen is supposed to act through lowering of LDL cholesterol, elevation of HDL cholesterol, effects on clotting factors and other actions. But most of these studies are not free from a bias which results in a spurious protective effect. For example there could be 'a healthy women effect', which means that the women taking estrogen are more likely to be educated, financially sound and more compliant. There could be an exaggeration of the protective effect because women taking estrogen may tend to use the health system more effectively.

Reviewing the effects of estrogen use on the risk of breast cancer, there is

about 32% higher risk for users compared to non-users. There is also an increase in the risk for endometrial cancer, thrombo embolism and gall bladder disease. The authors conclude that estrogen therapy could be beneficial if the risk for heart disease is reduced by at least 30%. This article brings out the essential dilemma of public health practice, i.e. making decisions with imperfect knowledge. (Hormone replacement therapy, heart disease, and other considerations, E. Barrett-Conner and D. Grady.)

Cancer is perhaps the most important public health problem of modern times. It is the second leading cause of death. Therefore prevention of cancer assumes great importance in health policy initiatives. Many cancers are not easily amenable to prevention, but an estimated 75 to 80% of all cancers can be prevented. Although avoidance of tobacco is perhaps the single most effective and well-known approach for cancer prevention, other behavioural modifications such as changes in diet are also important. Protection from sun exposure; it has been shown, can prevent over 80% of skin cancers. The attempt to modify behaviour in this regard is a major public health initiative in many Western countries. Success in this attempt is marred by two important factors: (1) the lack of awareness of the risks of sun exposure and (2) the social preference for a suntan.

Studies on the effectiveness of interventions to increase sun protection report a mixed response. Another approach is to increase surveillance, so that cancers are detected early. Screening facilities at health fairs, festivals have had some success. Such fairs need to be promoted on a larger scale if this important public health problem is to be effectively tackled. (Successful behavioural interventions to prevent cancer. The example of skin cancer. A. Baum and L. Cohen.)

An important contribution in the *Annual Review of Public Health* in 1998 is an autobiographical piece of '60 years in public health' by Lester Breslow. Scanning the development of public health over the last half century from a personal vantagepoint, Breslow provides powerful insights into the successes and failures of the discipline, and the possible reasons. He sketches out

the emergence of public health from a fragile, tentative relationship with the field of medicine to a profession in its own rate. The anecdotal nature of the article lends it a refreshing intimacy. There are two messages that emerge from the essay: (1) the importance of leadership and team work, and (2) the need for commitment. And, as the author says in the concluding paragraph, the possibility of having fun.

As always the *ARPH* chooses its essays with care, with an eye on relevance to practice as well as research content. Public Health, as a career option for medical graduates, loses out to clinical medicine because of its perceived lack of 'glamour' and lower earning potential. This review establishes emphatically that it does not take a back seat at least in intellectual appeal.

V. RAMAN KUTTY

*Health Action by People,*  
*'Krishnalaya',*  
*Opp. Mutharamman Kovil,*  
*Pettah, Trivandrum 695 024, India*

#### Software review

**Extend: Simulation Software.** Version 4 for Macintosh or Windows. Imagine That Inc., 6830 Via Del Oro, Suite 230, San Jose CA 95119-1353 USA. Email: extend@imaginethatinc.com. Web Site: <http://www.imaginethatinc.com>. Price: US \$695.

*Extend* from Imagine That Inc. is simulation software which the company advertises as software for the next millennium. I had not seen this software before, and therefore, was not sure of what to expect from it. But I was pleasantly surprised with its abilities after working with it for a few days. *Extend* is supplied on a CD, accompanied by a Users Manual which covers various topics such as building a model, enhancing the model and running the model with the blocks provided with the model. It also has extensive discussion on the programming language ModL with which new blocks can be created. Software can run on both Windows as well as Macintosh platforms. The requirements for Windows version are: 486, Pentium or Pentium Pro computer, 8

## BOOK REVIEWS

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MB RAM (16 MB recommended), 20 MB hard disk space and Windows 3.1, Windows 95 or above, or Windows NT 3.5+. The requirements for Macintosh are 68020+ or Power Macintosh, 8 MB RAM, 25 MB hard disk space. The installation itself is extremely simple, straightforward and fast. I tried it out on a Pentium MMX 200 MHz/32 Mb with Windows 95, and it took less than 5 minutes.

One of the best features of the design of *Extend* is the ease of building the model and running them. With *Extend* you can create a block diagram of a process where each block describes one part of the process. *Extend* comes with a wide variety of blocks (in excess of 400) which are stored in different libraries. The libraries provided with *Extend* are Generic, Discrete Event and Plotter. Other libraries include animation, electronic engineering, utility and sample libraries. Apart from these libraries that come with basic package, the blocks available in these libraries are sufficient to meet the requirements of most of the simulations in a variety of fields such as business, science and engineering. Some of the examples provided along with the software, such as car wash line, lake pollution, drug absorption in blood, predator-prey model, PID control of the process convinced me about the wide range of the applicability of the software. These blocks come with different types of connectors with which blocks can be assembled in the desired manner for building the model. The connections can be made by using the graphical interface (GUI) with the click of the mouse. For more complex models, a concept of hierarchy blocks can be used. A hierarchy blocks concept represents the subsystems of the model and these can be easily interfaced. It is possible to extend the applicability by creating the custom-made blocks as per your requirement. This can be done in ModL language which is similar to C language. The package also includes extensive plotting software to view the

results of the simulation. Some of the other features of the software are: sensitivity analysis to investigate how a parameter change impacts the pattern of behaviour for the entire model, cross platform compatibility between Windows & Macintosh, interfacing with C and Fortran language, I/O links with other software, etc.

I tried several demonstration programs supplied with the package and found running them very easy. What interested me most was the ease with which one could understand the process by looking at the model on the screen. This, I believe, is the result of block representation and connections, what you see on the screen is the translation of your conceptual idea of the model (flow diagram) into a computer model. The large number of equations which are characteristic of the typical model written in any programming language are invisible. This makes understanding of the model much easier not only for the developer of the model but also for the subsequent users. This, I found, is one of the appealing features of this software. I have not seen such a type of software before. I feel that the software can form an excellent tool as a teaching aid to demonstrate various ideas. I also tried developing a model for chemical reactor using the blocks provided with the package and I found it relatively easy. I did not try building my own blocks using ModL language but I suspect it will require considerable familiarity with the language and efforts will be similar to writing any C language program. I did not find some of the functions such as solving nonlinear algebraic equations (which I use very often) as a part of this package. Perhaps one will have to develop custom blocks to do so. I also found options in some of the blocks limited. For example, integrate block has the option of only using Euler's forward or backward method or trapezoidal rule. These may be enough for most applications but some stiff differential equations may require dif-

ferent methods. The manual which accompanies the software gives extensive guidelines for simulations and on-line help is also available. However, the help is given according to block name and function which presumes you know these names. I missed the standard Contents/Index/Find format of Windows applications.

*Extend* has a presence on the World Wide Web (<http://www.imaginethatinc.com>). The company's home page contains a lot of useful information and also lists several companies who are offering model development support, training and consultancy based on this software. With site licenses and volume discounts, it is likely that they would be less expensive. Apart from basic package, the company offers two add-ons, business processes reengineering (BPR) and Manufacturing Engineering packages, of course at extra cost. The site also announces free demonstration copies. Once you see the facilities of *Extend*, there is a very good chance that you would be justifiably tempted to buy it. Not having seen the comparable versions of the other competing products, it is not possible for me to give any authoritative opinion on cost-effectiveness of the package. However, to have all these facilities in a single, powerful, easy-to-use, continuously improving, and internet-supported package is something which is strongly in favour of *Extend*. There is no doubt whosoever needs to carry out model building and simulation would find that use of *Extend* leads to a substantial enhancement in productivity in research, development and teaching. It may even motivate some to undertake innovative and ambitious modelling exercises.

JAYANT M. MODAK

*Department of Chemical Engineering,  
Indian Institute of Science,  
Bangalore 560 012, India.*