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Viral advantage cont'd

of predictability, a modest effort toward surveillance and rapid response capability seems both feasible and rational."

Unfortunately, new diseases occur most frequently in crowded, poverty-stricken, tropical lands — the areas where people are least prepared to identify and analyze viral trends, says epidemiologist Donald A. Henderson, dean of the Johns Hopkins University School of Hygiene and Public Health in Baltimore.

Moreover, says Robert E. Shope, a viral epidemiologist at the Yale University School of Medicine, tropical-disease programs and specialists are dwindling in number worldwide. In 1973, citing budgetary constraints, the National Institutes of Health closed the last of its laboratories for tropical virology. More recently, an important tropical-virus laboratory in Hawaii shut down. Now, Shope says, the U.S. military plans to close its tropical-disease lab in Kuala Lumpur, Malaysia, even though it has served

as an "excellent listening post for new diseases."

Given current social and ecological trends, virologists say, this hardly seems the time to cut back on such programs. Rather, Shope and others recommend constructing sophisticated, on-site laboratories in key tropical areas and creating a global "red alert" reporting system among hospitals in high-risk areas. Shope suggests supplementing local labs with mobile units staffed by microbiologists, epidemiologists and entomologists who could investigate diseases on call.

Such a network could be surprisingly economical, says Henderson. For as little as \$150 million a year, he calculates, a global consortium could finance 15 tropical medical centers and 10 U.S. research facilities, leaving \$25 million for selected projects in epidemic areas.

There's little time to lose, warns historian McNeill. An expanding human population subject to urban overcrowding now provides an unprecedented opportunity for aspiring

viruses. "If you look at the world from the point of view of a vigorous virus, or even a bacterium today, there's a magnificent feeding ground out there, with billions and billions of human bodies where 25 or 27 years ago there was half that."

He recalls what happened in the 1950s when a virus newly introduced to control the rabbit population went out of control in Australia. Ultimately, the rabbits evolved an ability to coexist with the virus, but not before 80 percent of them had fallen to the epidemic. "This seems to me a very exact model of what might happen to human populations exposed to a new and very lethal virus in the world today," McNeill says.

Moreover, "the idea that the medical profession could stand as an effective obstacle to the propagation of such an infection seems to me optimistic, to say the least." If our experience with previous outbreaks is any indication, McNeill says, "the doctors would be the first to go."

1989 Halmstad Prize and AERF Practitioners' Award announced

The Actuarial Education and Research Fund selected two papers to share the annual Halmstad Prize for the best English-language paper on actuarial research published in 1987. The first paper, "Assessing the Solvency and Financial Strength of a General Insurance Company," was written by the Working Party on Solvency of the General Insurance Study Group of the Institute of Actuaries. The article appeared in Volume 114 of the *Journal of the Institute of Actuaries*.

The second paper to share in the Halmstad Prize was "Classical Risk Theory in an Economic Environment" by F. Delbaen and J. Haezendonck. The article appeared in the publication *Insurance: Mathematics and Economics*. The exact reference for this and other papers nominated for the Halmstad appear at the end of this article.

The winner of the 1989 AERF Practitioners' Award is Alfred O. Weller, FCAS, for his paper on "Generalized Bondy Development." The purpose of this award is to

acknowledge the considerable research done by actuaries in a nonacademic setting and to encourage the publication of research performed in the working environment. Weller's paper will be printed in the first 1989 edition of the *Actuarial Research Clearing House (ARCH)*.

The following seven papers were selected as finalists for the Halmstad Prize. The two winners are included:

- Daykin, C.D., et al, "Assessing the Solvency and Financial Strength of a Great Insurance Company," *Journal of the Institute of Actuaries*, V. 114, Part 2, 1987.
- Daykin, C. D., et al, "The Solvency of a General Insurance Company in Terms of Emerging Costs," *ASTIN Bulletin*, V. 17, #1, 1987.
- Delbaen, F. and J. Haezendonck, "Classical Risk Theory in an Economic Environment," *Insurance & Mathematics*, V. 6, #2, 1987.
- Klugman, Stuart, "Credibility for Classification Ratemaking via the Hierarchical Normal Linear Model,"

Proceedings of the Casualty Actuarial Society, V. 74, 1987.

- Promislow, S. David, "Measurement of Equity," *Transactions of the Society of Actuaries*, V. 39, 1987.
- Wilkie, A. D., "An Option Pricing Approach to Bonus Policy," *Journal of the Institute of Actuaries*, V. 114, Part 1, 1987.
- Wilmot, G. E., and H. H. Panjer, "Difference Equation Approaches in Evaluation of Compound Distributions," *Insurance: Mathematics & Economics*, V. 6, #1, 1987.

In memoriam

- James A. Attwood F.S.A. 1952
- Henry E. Blagden F.S.A. 1930
- Clarence R. Goodrich F.S.A. 1926
- J. Rae Jamieson F.S.A. 1955
- Sham S. Kataria *A.S.A. 1976
- Loren G. Logan F.S.A. 1951
- Julian M. Miller F.S.A. 1932
- Stuart D. Nevermann A.S.A. 1988
- Thomas E. Reinhardt A.S.A. 1964
- R. Arthur Saunders F.S.A. 1937