

## REFERENCES

- American Social Health Association, 1975. Today's VD Control Problem.
- Anderson, R.M. and R.M. May, 1979. Population biology of infectious diseases I, *Nature* 280, 361-367.
- Anderson, R.M. and R.M. May, 1982. Directly transmitted infectious diseases: control by vaccination, *Science* 215, 1053-1060.
- Aronsson, G. and I. Mellander, 1980. A deterministic model in biomathematics: asymptotic behavior and threshold conditions, *Math. Biosci.* 49, 207-222.
- Bailey, N.T.J., 1975. *The Mathematical Theory of Infectious Diseases*, 2nd ed., Hafner Press, New York.
- Bailey, N.T.J., 1979. Introduction to the modeling of venereal disease, *J. Math. Biology* 8, 301-322.
- Blount, J.H., 1979. Private communication.
- Braun, M., 1975. *Differential Equations and Their Applications*, Springer-Verlag, New York.
- Bureau of the Census, 1977. U.S. Department of Commerce. Current population reports: Population estimates and projections. Projections of the population of the United States: 1977-2050. Series P25, No. 704.
- Centers for Disease Control, 1979a. Results of culture testing for gonorrhea - United States 1978, *Morbidity and Mortality Weekly Report* 28, 290-291.
- Centers for Disease Control, 1979b. Gonorrhea - United States, *Morbidity and Mortality Weekly Report* 28, 533-534.
- Centers for Disease Control, 1980a. Penicillinase-producing *Neisseria gonorrhoeae* - Los Angeles, California, *Morbidity and Mortality Weekly Report* 29, 541-543.
- Centers for Disease Control, 1980b. Pelvic inflammatory disease - United States, *Morbidity and Mortality Weekly Report* 28, 605-607.
- Centers for Disease Control, 1981a. Annual Summary 1980: reported morbidity and mortality in the United States, *Morbidity and Mortality Weekly Report* 29 (54).
- Centers for Disease Control, 1981b. Spectinomycin-resistant Penicillinase-producing *Neisseria gonorrhoeae* - Cal., *Morbidity and Mortality Weekly Report* 30, 221-222.
- Centers for Disease Control, 1982. Global distribution of Penicillinase-producing *Neisseria gonorrhoeae* (PPNG), *Morbidity and Mortality Weekly Report* 3, 1-3.
- Centers for Disease Control, 1983. Sexually Transmitted Disease Statistical Letter 1982.
- Conrad, G.L., G.S. Klevis, B. Rush, W.W. Darrow, 1981. Sexually transmitted diseases among prostitutes and other sexual offenders. *Sex. Trans. Dis.* 8, 241-244.

- Constable, G.M., 1975. The problem of V.D. modelling, Bull. Inst. Int. Statist. 106-2, 256-263.
- Cooke, K.L., 1976. An epidemic equation with immigration, Math. Biosci. 29, 135-138.
- Cooke, K.L., 1982. Models for endemic infections with asymptomatic cases. I One group, Math. Modelling 3, 1-15.
- Cooke, K.L., 1984. Infection models with asymptomatics, in proceedings of the second IMACS International Symposium on Biomedical Systems Modeling, Bethesda, Maryland, August 1984, C. DeLisi and J. Eisenfeld, eds., North Holland, Amsterdam.
- Cooke, K.L. and J.A. Yorke, 1973. Some equations modelling growth processes and gonorrhoea epidemics, Math. Biosci. 16, 75-101.
- Cornelius III, C.E., 1971. Seasonality of gonorrhoea in the United States. HSMHA Health Rep. 86, 157-160.
- Curran, J.W., 1980. Economic consequences of pelvic inflammatory disease in the United States. Am. J. Obstet. Gynecol. 138, 848-851.
- Darrow, W.W., D. Barrett, K. Jay et al., 1981. The gay report on sexually transmitted diseases, Am. J. Publ. Health 71, 1004-1011.
- Darrow, W.W., and M.L. Pauli, 1983. Prostitution and STD, in Sexually Transmitted Diseases, Weisner, Mardh, Holmes, Sparling, eds., McGraw-Hill, New York.
- Dietz, K., 1975. Transmission and control of arbovirus diseases, in Epidemiology, SIMS 1974 Utah Conference Proceedings, SIAM, Philadelphia, 104-121.
- Dietz, K., 1976. The incidence of infectious diseases under the influence of seasonal fluctuations, in Mathematical Models in Medicine, Lecture Notes in Biomathematics, No. 11, Springer-Verlag, New York, 1-15.
- Henderson, R.H., 1975a. National strategies to control gonorrhoea, Minutes of the Venereal Disease Control Advisory committee meeting of September 18-19.
- Henderson, R.H., 1975b. Dear Colleagues letter of October 1 from Director of Venereal Disease Control Division, Centers for Disease Control, Attachment #2, Commentary on national strategies to control gonorrhoea.
- Hethcote, H.W., 1973. Asymptotic behavior in a deterministic epidemic model, Bull. Math. Biology 35, 607-614.
- Hethcote, H.W., 1974. Asymptotic behavior and stability in epidemic models, in Mathematical Problems in Biology, P. van den Driessche, ed., Lecture Notes in Biomathematics, No. 2, Springer-Verlag, New York, 83-92.
- Hethcote, H.W., 1975. Mathematical models for the spread of infectious diseases, in Epidemiology, SIMS 1974 Utah Conference Proceedings, D. Ludwig and K.L. Cooke, eds., SIAM, Philadelphia, 122-131.

- Hethcote, H.W., 1976. Qualitative analyses for communicable disease models, *Math. Biosci.*, 28, 335-356.
- Hethcote, H.W., 1978. An immunization model for a heterogeneous population, *Theor. Pop. Biol.* 14, 338-349.
- Hethcote, H.W., 1983. Measles and rubella in the United States, *Am. J. Epid.* 117, 2-13.
- Hethcote, H.W., H.W. Stech and P. van den Driessche, 1981a. Nonlinear oscillations in epidemic models, *SIAM J. Applied Math.* 40, 1-9.
- Hethcote, H.W., H.W. Stech and P. van den Driessche, 1981b. Stability analysis for models of diseases without immunity, *J. Math. Biol.* 13, 185-198.
- Hethcote, H.W., H.W. Stech and P. van den Driessche, 1981c. Periodicity and stability in epidemic models: a survey, in *Differential Equations and Applications in Ecology, Epidemics and Population Problems*. S. Busenberg and K.L. Cooke, eds. Academic Press, New York, 65-82.
- Hethcote, H.W. and D.W. Tudor, 1980. Integral equation models for endemic infectious diseases, *J. Math. Biol.* 9, 37-47.
- Hethcote, H.W. and P. Waltman, 1973. Optimal vaccination schedules in a deterministic epidemic model, *Math. Biosci.* 18, 365-382.
- Hethcote, H.W., J.A. Yorke and A. Nold, 1982. Gonorrhea modeling: a comparison of control methods, *Math. Biosci.* 58, 93-109.
- Hirsch, M. W., 1984. The differential equations approach to dynamical systems. *Bull. Amer. Math. Soc.*, 11, 1-64.
- Jones, O.G., 1976. Private communication.
- Judson, F.N., K.A. Penley, M.E. Robinson et al., 1980. Comparative prevalence rates of sexually transmitted diseases in heterosexual and homosexual men. *Am. J. Epidemiol.* 112, 836-843.
- Kemper, J.T., 1978. The effects of asymptomatic attacks on the spread of infectious diseases: A deterministic model, *Bull. Math. Biology* 40, 707-718.
- Kemper, J.T., 1980. On the identification of superspreaders for infectious diseases. *Math. Biosci.* 48, 111-127.
- Kramer, M.A. and G.H. Reynolds, 1981. Evaluation of a gonorrhea vaccine and other gonorrhea control strategies based on computer simulation modeling, in *Differential Equations and Applications in Ecology, Epidemics and Population Problems*. S. Busenberg and K.L. Cooke, eds. Academic Press, New York, 97-114.
- Lajmanovich, A. and J.A. Yorke, 1976. A deterministic model for gonorrhea in a nonhomogeneous population, *Math. Biosci.* 28, 221-236.
- London, W.P. and J.A. Yorke, 1973. Recurrent outbreaks of measles, chickenpox and mumps: I Seasonal variation in contact rates. *Am. J. Epidemiol.*, 98, 453-468.

- Mahoney, J.F. et al., 1942. Culture studies in chronic gonorrhea of women, *Amer. J. Symp., Gon., and V.D.* 26, 38-47.
- Marx, J.L., 1980. Vaccinating with bacterial pili, *Science* 209, 1103-1106.
- May, R.M., 1981. The transmission and control of gonorrhea, *Nature* 291, 376-377.
- Miles, J.R., 1978. Gonorrhea control: rescreening, Attachment #4 in Dear Colleagues letter of October 18 from P.J. Wiesner, Director of Venereal Disease Control Division, Centers for Disease Control.
- Miller, R.K. and A.N. Michel, 1982. *Ordinary Differential Equations*, Academic Press, New York.
- Nallaswamy, R. and J.B. Shukla, 1982. Effects of dispersal on the stability of a gonorrhea endemic model. *Math. Biosci.* 61, 63-72.
- National Institute of Allergy and Infectious Diseases, 1980. Sexually transmitted diseases: 1980 status report, NIH Publication No. 81-2213.
- Nold, A., 1979. The infectee number for communicable diseases, *Math. Biosci.* 46, 131-139.
- Nold, A., 1980. Heterogeneity in disease transmission modeling. *Math. Biosci.* 52, 227-240.
- Phillips, L., J.J. Potterat, R.B. Rothenberg et al., 1980. Focused interviewing in gonorrhea control, *Amer. J. Publ. Hlth.* 70, 705-708.
- Potterat, J.J., R.B. Rothenberg and D.C. Bross, 1979. Gonorrhea in street prostitutes: Epidemiologic and legal implications. *Sex. Trans. Dis.* 6, 58-63.
- Potterat, J.J., L. Phillips, R.B. Rothenberg, W.W. Darrow, 1980. Gonococcal pelvic inflammatory disease: case-finding observations, *Am. J. Obstet. Gyn.* 137, 1101-1104.
- Potterat, J.J., R.B. Rothenberg, D. Woodhouse et al., 1983. Gonorrhea as a social disease. Presented at the Fifth Meeting of the International Society for STD Research, Seattle, Washington, August 1-3, 1983.
- Rein, M.F., 1977. Epidemiology of gonococcal infections, in *Gonococcus*, R.B. Roberts, ed., Wiley, New York, 1-47.
- Rendtorff, R.C. et al., 1974. Economic consequences of gonorrhea in women, *J. Amer. VD Assoc.* 1, 40-47.
- Reynolds, G.H. and Y.K. Chan, 1974. A control model for gonorrhea, *Bull. Inst. Int. Statist.* 106-2, 264-279.
- Rothenberg, R.B., 1982. High risk groups: Identification and intervention. Presented at the WHO/PAHO Scientific Working Group on the Control of Sexually Transmitted Diseases, Washington, D.C., April 26-30, 1982.

- Rothenberg, R.B., 1983. The geography of gonorrhea: Empirical demonstration of core group transmission. *Am. J. Epidemiol.* 117, 688-694.
- St. John, R.K. and J.W. Curran, 1978. Epidemiology of gonorrhea, *Sexually Transmitted Diseases* 5, 81-82.
- Scientific American, 1976. Gonorrhea Resurgent, Vol. 234, No. 6, June, p. 50.
- Shearer, L., 1983. VD Vaccine, *Parade Magazine* of April 24, 10.
- Strauss, A. and J. A. Yorke, 1967. On asymptotically autonomous differential equations, *Math. Systems Th.* 1, 175-182.
- Strauss, A. and J. A. Yorke, 1969. Perturbing uniform asymptotically stable nonlinear systems, *J. Diff. Equ.* 6, 452-483.
- Thieme, H. R., 1982. Global asymptotic stability in epidemic models, *Equadiff* 1982.
- Wichmann, H.E., 1979. Asymptotic behavior and stability in four models of venereal disease, *J. Math. Biology* 8, 301-322.
- Wiesner, P.J., 1979. Dear Colleagues letter of April 27 from Director of Venereal Disease Control Division, Centers for Disease Control, Attachment #7, Identifying high risk patients by census tract.
- Wiesner, P.J., 1980a. Dear Colleagues letter of March 10 from Director of Venereal Disease Control Division, Centers for Disease Control.
- Wiesner, P.J., 1980b. Dear Colleagues letter of December 15 from Director of Venereal Disease Control Division, Centers for Disease Control.
- Wiesner, P.J. and S.E. Thompson III, 1980. Gonococcal diseases, *Disease-a-Month* 27, No. 5, 1-44.
- World Health Organization, 1978. *Neisseria Gonorrhoeae and Gonococcal Infections*, Technical Report Series 616, Geneva.
- Yorke, J.A., H.W. Hethcote, and A. Nold, 1978. Dynamics and control of the transmission of gonorrhea, *Sexually Transmitted Diseases* 5, 51-56.
- Yorke, J.A. and W.P. London, 1973. Recurrent outbreaks of measles, chickenpox and mumps: II Systematic differences in contact rates and stochastic effects. *Am. J. Epidemiol.* 98, 469-482.
- Yorke, J.A., N. Nathanson, G. Pianigiani, and J. Martin, 1979. Seasonality and the requirements for perpetuation and eradication of viruses in populations, *Amer. J. Epidemiol.* 109, 103-123.
- Zaidi, A.A., S.O. Aral, G.H. Reynolds et. al., 1983. Gonorrhea in the U.S.: 1967-1979. *Sex. Trans. Dis.* 10, 72-76.