Blue green algae

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The most promising avenue for future epidemiological research would be school-based studies. Children living along the Darling swim frequently in the river. School nurses are in a unique position to monitor even minor illness among these children. The most appropriate option for future surveillance of this potential public health problem would be to monitor continuously trends in blue green algae-related illnesses reported to school nurses in areas regularly affected by riverine blooms of blue green algae. Increases in the incidence of blue green algae-associated illnesses during or following algal blooms would indicate the need for further epidemiological study.

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Mammographic screening

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The satisfaction of women with the service provided at the time of the first screen will be an important influence on their decision to have future screens. A survey of women attending the screening and assessment services in the Central and Hunter Area Health Services was begun in June 1992. The results of the survey will be taken into account in the planning of the new services to ensure that service provision meets the perceived needs of women.

Printed materials about mammographic screening have been written in consultation with consumer representatives, health providers and educators and will be distributed by the services.

Community education is a major issue in developing public knowledge and acceptance of the mammographic screening program and fostering recruitment of the target population. Strategies to involve health promotion personnel in the broadest sense will be developed through a series of seminars about breast cancer and mammographic screening. The seminars will be developed on a consultative basis by the State Planning and Co-ordination Unit.

Ellen Ryan, Manager, State Planning and Co-ordination Unit for Mammographic Screening, NSW Cancer Council

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PUBLIC HEALTH ABSTRACTS

The following abstracts were prepared for the NSW Public Health Network Conference in Sydney in November. The presenting author's name is underlined.

Behavioural/risk factor survey in a rural area

Three communities in the South West Region were surveyed using a telephone-based methodology. The aims of the survey were to pilot the use of telephone surveys in a rural area and to gather local behavioural/risk factor data. The survey employed random digit dialling and the random selection of household participants, over the age of 18 years, using Kish Grids. Questions were taken (or modified) from the National Health Survey and National Heart Foundation Risk Factor Survey or were developed locally following input from a community meeting. The survey included specific questions on injuries related to farm work as well as questions on the perceived major health problems in the communities surveyed.

Students from La Trobe University Albury/Wodonga campus were trained as interviewers. Interviews were conducted between 6.30pm and 8.30pm Monday to Friday for a period of three weeks with 480 interviews being completed. Despite intense and supportive local media coverage the response rate was 62 per cent. The cost per completed interview (not including data entry and analysis and questionnaire development) was approximately $12. Analysis of the data is being undertaken. A major issue when conducting these surveys in rural areas is the lack of experienced interviewers.

Tony Kolbe, Kim Gilchrist, Elaine Clark and Neil Stubbs

The Sydney air pollution and mortality study

There has been increasing community concern over visible air pollution in Sydney and its possible effect on health. This paper reports the results of an analysis of daily death counts and environmental variables in the Sydney area of NSW for the period 1986 to 1989. The study determines the association between daily air pollution (nitrogen dioxide, ozone and nephelometry, an indirect measure of particulates) and mortality.

All available air pollution data were obtained from the then State Pollution Control Commission from 1986 to 1989 for all sites in the Sydney area. Meteorological and mortality data were collected for the same time period and area. Multiple linear regression models were fitted to the dataset, with non-traumatic deaths as the outcome variable. Various techniques were used to account for autocorrelation. Separate models were fitted for seasons and additional analyses were performed using the alternative outcome variables of cardiovascular deaths and cancer deaths.

The base model found significant effects of temperature, nitrogen dioxide, day of week and seasons in predicting the number of non-traumatic deaths. The reduced model accounted for 38 per cent of the variability in daily non-traumatic deaths. An increase of one log unit of nitrogen dioxide is associated with an increase in daily deaths of two. An increase in nitrogen dioxide levels from 0.0 to 2.7 pphm would be associated with an extra two deaths on that day. If nitrogen dioxide levels increased by a further log unit, from 2.7 to 7.4 pphm, there would be a further two deaths.

Peter Lewis, John Wiodarczyk, Stephen Corbett and Tim Churches

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Public Health Abstracts

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Practical aspects of risk communication with Hib

Haemophilus influenzae type b (Hib) is a common cause of serious and potentially fatal infection in young children, but until recently there appeared to be a lack of community awareness of the disease. When a case occurs in a community, the rapid and overwhelming nature of the infection can cause a high level of anxiety. As well as being responsible for the practical aspects of risk management, the Public Health Unit has an important role in risk communication.

The death of a child from Hib infection and subsequent community concern focused the attention of Northern Sydney Area PHU on the practical aspects of risk communication. When liaison with the child's school and the provision of information to the parents did not allay community anxiety, two members of the PHU went to the school to talk to parents and teachers. While the overwhelming nature of the disease had caused fear and anxiety in the community, it became apparent that conflicting advice about Hib and the need for antibiotic prophylaxis given to some parents by local doctors had helped to maintain rather than allay their fears.

As a result of this incident, we have instituted a number of measures to assist in accurate and consistent risk communication. These include: the notification of general practitioners when a case of Hib occurs in their locality; the preparation of draft media releases on the infection and its incidence in our Area; the review of information sheets for parents and schools; and the geographic mapping of all cases in our Area.

Provision of consistent, thorough and factual advice not only to the community but to primary care providers is essential. This should be coupled with willingness by PHU staff to talk to individual members of the community and to have adequate mechanisms in place to detect any related cases of the infection.

Helen Longbottom, Donald Holt, Gay Rixon and John Skinner

Teenage pregnancy in the Shoalhaven

Teenage pregnancy is associated with increased morbidity and mortality for mothers and their babies. The Illawarra Public Health Unit was requested by the Medical Superintendent of Shoalhaven Hospital to investigate the problem and develop strategies to reduce the morbidity from teenage pregnancy in the Shoalhaven. The magnitude of the problem was investigated using routinely collected data from several sources. A working party of interested health and education professionals was formed to identify areas that required further investigation. As a result, personal development and health education in Shoalhaven schools was reviewed, as well as availability of contraceptive facilities and pre- and post-natal programs for pregnant teenagers.

This information was used to construct goals and strategies that were adopted by a larger group of health and education professionals. Efforts to implement these throughout the region include a survey of adolescents' attitudes towards sex education, a number of smaller working parties looking at the issues of parental involvement and general practitioners' involvement in sex education. The group is also liaising with HIV/AIDS workers to help implement strategies that will increase the availability of contraception to adolescents.

Cait Lonie and David Jeffs

Illawarra general practice sentinel surveillance of asthma

General practice sentinel surveillance networks provide listening posts for timely reporting of conditions not normally notifiable. They do not provide complete prevalence data but they can give an indication of changing patterns of disease and they do provide a valuable early warning system for health professionals.

The Illawarra Sentinel General Practice Network has been monitoring specified conditions on a weekly basis since June 1990. The network consists of 14 doctors between Helensburgh in the north to Gerringong in the south. During 1992 the sentinel network reported on presentations of influenza, upper respiratory tract infection, lower respiratory tract infection, asthma, influenza immunisation and measles.

Asthma has been one of the conditions under continual surveillance since the sentinel network was established in 1990. The asthma data collected from the sentinel network has been very useful to the Public Health Unit. It enables the unit to make yearly comparisons of the seasonal trends in presentations of asthma to general practitioners. It also allows for age and sex breakdowns of presentations. The sentinel data have been combined with asthma data collected from A&E departments and local pollution data. This allows for a better estimation of asthma in the community and shows if any increase in asthma occurs with high pollution levels. Sentinel surveillance of non-notifiable conditions has the potential to provide public health units with valuable information on public health and changing patterns of disease in their area.

Desolie Lovegrove

The KJ method

Much public health work is problem solving. How to do this and overcome a particular problem is often difficult. The typical response is to collect a great deal of numerical information. Professionals have received a great deal of training dealing with quantitative material, e.g. the use of tables and numerous regression techniques. There is less training and means of dealing with qualitative information. A typical practice is to develop scales and apply sophisticated multivariate techniques such as factor analysis or cluster analysis to bring together association. Alternative, less mathematical techniques are often called brainstorming sessions. However the importance of, and relationships between, suggested ideas is not clear and a possible solution to a problem not obvious from the many suggestions found in brainstorming sessions.

The Japanese quality management movement has invested extensively in devising methods to deal with problems where there is only qualitative material available. One such method is the KJ. It was developed by Jiro Kawakita, a Japanese anthropologist, as a means of summarising and characterising large quantities of anthropological data gathered during his expeditions. It has been found useful in situations where problems appear large and complex, information appears unorganised, unreal thoughts and ideas are needed, team consensus is essential for successful problem solving and the data are non-numeric or statistical techniques do not apply.

Robert Reznik

Trends in leukaemia and lymphoma, NSW, 1972-1989

The percentage of total cancers attributable to environmental factors has been estimated to be between 80 and 90 per cent worldwide. The term "environmental" includes factors associated with human behaviour, lifestyle and external factors. These estimates are based on observed variations in cancer incidence geographically and over time, as well as the demonstration of causal links between particular cancers and environmental agents. Haematopoietic cancers show geographic and temporal variations and have been associated with exposure to radiation, medicines, industrial chemicals and infectious agents.

In NSW the Central Cancer Registry has collected data on haematopoietic cancers since 1972. The data from 1985-89 have only recently been published. This paper will describe the patterns of leukaemias and lymphomas in NSW between 1972 and 1989. This will include variations in incidence and mortality rates by age, gender and LGA over time. The increasing incidence, particularly in lymphomas in males, will be discussed.

Helen Moore and Stephen Corbett

Disinfection of biomedical waste by microwave process

This paper will briefly describe the history of the disposal of biomedical wastes within the Hunter and the recent trial of a microwave unit at the John Hunter Hospital. The unit was imported from Germany by Cleanaway and a trial monitoring group was set up representing the Environment Protection Authority, specialist staff at the John Hunter Hospital, Cleanaway and the Newcastle City Council. The legislative requirements were identified and appropriate approvals were given by the council for the trial, together with the disposal of treated waste in a special landfill.

A particular advantage of this technology is the approximately 80 per cent reduction in waste volume and the avoidance of transport of biomedical waste on public highways from the Hunter to Sydney as currently occurs. The disinfection process will be described as well as the use of test organisms supervised by the Hunter Area Health Service Pathology Department. The trial has been successful in terms of the disinfection of waste and waste streaming within the hospital.

Occupational health issues are examined in relation to the management of contaminated waste by staff and issues such as the monitoring for microwave leakage for operators of the unit. It is expected that this technology may be more widely used in Australia. A copy of the report will be forwarded to the Standards Association and may lead to the development of an Australian standard.

John Stephenson

Is living near Burns Creek a health hazard?

Residents near Burns Creek in the Fairfield/Villawood area of Sydney were concerned that there were high rates of cancer in their community. They feared that over many years industrial waste discharged into the creek and regular flooding of their backyards had created an unhealthy environment. South West Sydney PHU worked with the community, collected information on cases of cancer from residents and reported back to residents at a public meeting.

We recognised that community reporting alone would miss many of the cancer cases. Permission was granted from the NSW Central Cancer Registry for us to have access to data for the small area around Burns Creek. The study area was made up of four census "collection districts". New cases of cancer diagnosed in the study area from 1981-90 were examined. Ninety-six cases were recorded for the 10-year period compared to 112 expected cases (based on NSW age-specific incidence rates for 1986). The most common cancers were lung and breast. These are the most common cancers in NSW. The relative risk of cancer in the study area compared to the rest of Fairfield/Villawood was 1.14 (95% CI 0.93 to 1.39).

The key conclusion was that residents of the study area experience much the same rate and types of cancer as people in the rest of NSW. A report was written for the community and a public meeting planned to discuss the results.

Isla Tooth

Public health education and training

As the health system changes its focus to achieve improved health outcomes it will require increasingly sophisticated practitioners with sufficient skills to incorporate population health principles into their everyday practice.

There have been a number of important training and industrial initiatives which should inform the development of a strategy for public health training in NSW. Issues include a review of public health tertiary programs currently available and planned, the development of training programs for health staff in NSW and the implementation of the structural efficiency principle in health services. Organisations involved or interested include the Public Health Association, the Department of Employment, Education and Training, the Australian Insitute of Training and Development, the Commonwealth Department of Health and Community Services, professional bodies, unions and various State Government bodies, including the NSW Health Department.

This paper considers which of the various issues might be most significant for the Public Health Division of the Health Department. It will suggest some important further steps in the development of a coordinated strategy for public health training and education in NSW.

Lyn Stoker and Marion Haas

Application of the median polish technique to demonstrate a birth cohort effect

Peptic ulcer disease is the cause of substantial morbidity and mortality in a number of countries including Australia. Despite diagnostic and treatment advances, peptic ulcer mortality in women is increasing. To understand this problem a birth cohort analysis using the Median Polish Technique (MPT) was performed on 36 years, 1953-1989, of female peptic ulcer (PU) mortality data from NSW. The MPT allows cohort effects to be quantified, yet has rarely been applied to mortality data. Birth cohort effects detected using graphical presentation of mortality data for duodenal (DU) and gastric ulcers (GU), were supported by the results obtained using the MPT.

DU mortality rates for females increased significantly over the 36-year period. This increase can be explained by the presence of a birth cohort effect, with women born between 1898 and 1913 having a greater risk of dying from DU than preceding or subsequent generations. Cohort effects in GU

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TABLE 8

VACCINE PREVENTABLE DISEASE NOTIFICATIONS BY HEALTH AREA AND REGION CUMULATIVE 1993

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	Total
Measles	13	2	–	21	9	10	1	1	2	3	13	–	18	–	–	–	93
Pertussis	–	1	1	2	–	9	22	1	1	3	2	1	2	7	–	–	52
Rubella	2	7	3	–	8	2	14	2	–	3	8	1	–	1	–	3	54
Tetanus	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	2

TABLE 9

RARELY NOTIFIED INFECTIOUS DISEASES BY HEALTH AREA AND REGION CUMULATIVE 1993

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	Total
Leptospirosis	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Listeriosis	2	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	4

Abbreviations used in this Bulletin:
CSA Central Sydney Health Area, SSA Southern Sydney Health Area, ESA Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NCR North Coast Health Region, NER New England Health Region, OFR Orana and Far West Health Region, CWR Central West Health Region, SWR South West Health Region, SER South East Health Region, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.

Public health abstracts

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were also present. The results support the findings from other studies of birth cohort effects in peptic ulcer mortality data from England, Europe and Japan, and provide support for the existence of environmental factors operating internationally which resulted in increased peptic ulcer mortality among specific birth cohorts.

Hypotheses regarding the causes of these cohort effects are presented. Birth cohort analysis provides a useful approach to examine trends in mortality, permits predictions about future mortality patterns to be made, highlights cohorts who may be at risk and provides some insight into the aetiology of diseases.

Johanna Westbrook and Louise Rushworth

HANDLING DATA DEFICIENCY IN ECONOMIC EVALUATION

There is increasing pressure to justify health care budget allocations by economic appraisal. Of concern to those seeking to evaluate the efficiency of programs is the deficiency of data in key areas, such as the measurement of final outcomes (changes in health state), attributing changes in final outcome to particular programs and the identification of program costs.

The importance of data deficiency to the use of economic evaluation is addressed in this paper, with respect to road safety education (RSE). The approach to the problem of evaluating such a preventative program has been to make gross assumptions where the absence of data would otherwise prevent any rational consideration of its economic merits. The advantage of this approach is to make explicit, and therefore subject to examination, the value judgments which would otherwise influence decision making. Should they become available, better data can easily be substituted for assumptions which are rendered invalid.

The results represent a crude attempt to evaluate the cost utility of RSE. The results are sensitive to the method used to value health states and to the assumptions used to overcome deficiencies of data. The first of these is not of immediate concern, as cost utility analysis is still in its infancy and there is a considerable research agenda to complete before utility values will become operational. The second will be overcome in time as better data become available. The results suggest that one need not be paralysed by the difficulty of evaluating health-promoting activities.

Richard D Smith