



**NSW Health Survey Program:
An analysis of the costs and benefits
of different survey management options**

Final Report

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EXECUTIVE SUMMARY

Background

Despite the level of resources devoted to social and health surveys few agencies have tried to assess how their survey data are used, or to what effect.

The NSW Health Surveys have been conducted since 1997, to collect data about the health and other health-related behaviours and characteristics of people in NSW. There have been two surveys of adults (1997 and 1998), one of older people (1999), and a survey of children for which the data collection is completed and the Report is expected by December 2001.

This report considers the choices currently faced by NSW Health in relation to how the survey is managed: (a) as *discrete* surveys funded separately, versus a continuous survey program; and, (b) as surveys of adults and other age-groups separately versus a whole- population survey. We have drawn on recent work by other health economists who aimed to quantify the benefits of health services research, and – as much as possible – we have tried to apply established principles of economic evaluation.

A major methodological challenge is that in order to identify the marginal benefits of one course of action compared to another, both the costs and the benefits of the alternatives must be separable from other activities or programs.

Method

The report's findings are based on:

1. a mail/e-mail survey of the health survey data users (conducted by staff within the Epidemiology and Surveillance branch of NSW Health);
2. follow-up telephone interviews with respondents to the user survey who reported that their use of the NSW Health Survey data was to inform health planning and policy change, or to evaluate programs and policies; and,
3. five case studies of selected survey data users, to explore the variety of ways in which the surveys have or will create benefits, either directly or indirectly.

Results

The average annual cost of the proposed continuous survey program is \$680,000. This would provide an annual adult survey report, and age-specific reports every two years and is estimated to be \$547,000 cheaper per year than a discrete annual survey of adults combined with surveys of children and older people every two years (\$1,136,900).

The anticipated data quality benefits of this additional ongoing expenditure are: quarterly reporting of some variables, larger sample sizes (over equivalent periods of time), and reduced seasonal bias. Savings may also be generated by avoiding *discrete* surveys and studies, which might be commissioned by area health services or other agencies in the context of uncertainty about when the next state-run survey will be carried out.

The e-mail/mail survey of users showed that for over four-fifths (28 of 32) of users any benefits were 'marginal', in the sense that the findings would not have arisen without the existence of the NSW Health Surveys. They either used data on topics not available in other surveys (22 users), used data at the geographical level of area

health services (24 users) or used questions which had been developed specifically for their AHS (2 users).

The survey also showed that of the users who responded to the e-mail survey, almost three-quarters (24 of 32) said that they used it to generate *information to support planning, change policy or practice and strategy development*, and/or for *the evaluation of policies and programs*. The others stated that their use of the survey data was for state or national reporting requirements, monographs, reports, academic publications or conference presentations.

During the follow-up telephone interviews, respondents claimed the NSW Survey data had allowed them to: identify health needs; identify risk factor exposures; assess the feasibility of proposed services; assess the accessibility or effectiveness of existing services. More generally the health survey data was believed to provide a very useful focus for policy discussion and agreement, and engendered a population and needs-based approach to health service planning. The case studies reinforced many of these claims and showed more explicitly how such benefits can arise.

Conclusions

Specific instances of being able to attribute policy change to particular survey information have been rare. Nevertheless, there is a strong belief amongst data users that the survey data provides essential contextual information which influences health policy-makers and policies in a more general, indirect and long-term way. The survey information is invariably used in conjunction with information from other sources.

The majority of survey users state that they use it to inform health planning or policy change, or to evaluate programs and policies. Most also use data on topics, or at a geographical scale, that would be impossible to obtain elsewhere.

If, as other researchers have asserted (Davis and Howden-Chapman, 1996), public health research is more influential if topical, timely, well-funded, commissioned by health authorities and based upon the local collection of data, then the secure funding of a continuous survey program managed and conducted from within NSW Health, should at least maximise the chances of the survey information influencing policy.

It also sends out an important signal that NSW Health is committed to an evidence-based approach to policy-making, and monitoring service performance in terms of health outcomes. The indirect effects of such signals on general strategic direction and accepted norms concerning how policies are made is hard to assess.

1 General approach

Despite the level of resources devoted to social and health surveys, most national agencies for statistics have not tried to assess how their survey data are used, or to what effect. The Australian Bureau of National Statistics has conducted a review of their household survey program, including a series of “review consultations” with “key government [survey] users” (Australian Bureau of Statistics, 1999), and in the US, the Behavioural Risk Factor Surveillance System has extensively documented the use of their data at the State level (CDC, 2001). However, such examples are the exception rather than the rule, and have not measured survey use in any rigorous or quantitative way. In general, policy makers and other potential survey users have typically been consulted quite intensively in the initial design or ongoing development of surveys, but there have been very few attempts to measure the benefits or effects of the survey data produced.

Some studies have focused on valuing the benefits of single-question, primary research projects in the health care field. Even in this context the methodological difficulties are considerable, and any quantification of benefits unavoidably crude. Work by Buxton and Hanney (Buxton and Hanney, 1996) identifies the following major issues:

1. The benefits of research occur at many different levels (knowledge, benefits to future research, political and administrative benefits, health sector benefits, broader economic benefits)
2. Many of the benefits of research are complex and indirect (e.g. they arise as a result of further research based on these earlier studies/surveys; they may also arise from the research process itself rather than any identifiable information produced)
3. The time-scales over which benefits emerge are therefore considerable.

In the present context – of assessing the value of a general health survey – most of these difficulties are probably magnified. The data produced by general health surveys potentially shed light on very many questions, and may influence a wide range of policy and practice decisions. Furthermore, although in general the usefulness of research data is greater the more recently it has been collected, it could be argued that the potential uses of survey data are enhanced if repeat surveys are carried out. Thus, compared to single-question primary research studies, general survey data has both a wider range of potential uses and a potentially longer useful “shelf-life”.

We therefore initially propose a pragmatic appraisal of the direct use of the NSW Health Survey in the recent past. This may be supported by a basic estimation of likely future costs and usage (under the various options presented in section 2, below), and a few selected case-studies to illustrate the full range of benefits – both direct and indirect - which may accrue from health surveys of this kind.

1.1 The NSW Health Survey Program

The NSW Health Survey Program is a key component of NSW Health Department’s efforts to further develop population health information. The objectives of the program are:

1. to provide ongoing information on self-reported health status, health risk factors, health service use and satisfaction with health services **to inform and support planning, implementation, and evaluation of health services and programs in NSW**;
2. to collect **information that is not available from other sources**;
3. to quickly **respond to emerging data needs**; and
4. to ensure that the information collected is **high quality, timely and cost-effective**

To date the surveys have been conducted intermittently on an almost annual basis, with two surveys of adults (in 1997 and 1998), a survey of older people (in 1999) and a survey of children currently under way (July 2001). This pattern of surveys has been largely attributed to the need to secure funding for each separate survey (NSW Department of Health, 2001).

2 The options to be appraised:

The NSW Statewide Health Survey Program may be implemented at various levels:

- *Discrete*, funded separately (as at present), versus continuous;
- Adult survey only (of those aged 16 years and over) versus a survey of the whole population.

It is noted that the current preferred option is that the survey should be conducted in-house. However, in theory it could be carried out by:

- Having all 17 Area Health Services conduct their own surveys;
- Contracting with a market research company;
- Persuading ABS to over-sample for NSW in the National Health Survey, and include additional questions.

The costs and benefits of the first set of options will be assessed, as much as possible adhering to the main principles of economic evaluation, and according to the strategic objectives of the NSW Health Department.

3 Method

3.1 Assessment of costs

The (in-house) cost of the surveys carried out to date are known, and can be used to estimate future survey options (different population groups, different sample sizes etc.), as well as estimates of contracting out the survey to other providers.

A comprehensive estimate of the cost of the NSW Health Survey should include the following:

1. Designing the survey and question generation.
2. Data collection, both operational and administration costs.
3. Data processing.
4. Ongoing data warehousing and retrieval.

It will be assumed that costs of survey design and post-survey data warehousing will be largely similar between the different survey options currently being considered.

Therefore the cost estimates concentrate largely on the processes of data collection and processing.

3.2 Assessment of benefits

We have already identified some of the problems of estimating the benefits from health research. With these in mind, and given the short time-frame for the proposed cost-benefit analysis, we conducted:

1. A sub-analysis of the survey of users of the NSW health surveys (Banks and Eyeson-Annan, 2001). This analysis will aim to summarise the “marginal benefits” of having the NSW Health Survey data. In other words it will focus on those uses of the data which would not have been possible with alternative data sources.
2. A follow-up telephone survey of respondents (to the user survey) who reported that their use of the survey data was to inform health planning and policy change, or to evaluate programs and policies.
3. A series of case studies in order to investigate the variety of ways in which the NSW Health Surveys create benefits, either directly or indirectly, .

Wherever possible we encouraged survey users to identify outputs within the following framework, which has been adapted from Buxton and Hanney’s work (Buxton and Hanney, 1996; Buxton et al., 1999):

<i>Type of benefit</i>	<i>Already realized</i>	<i>Anticipated</i>
Knowledge		
Health sector		
Political and administrative		
Broader economic benefits		
Benefits to future research		

See Appendix A for a fuller description of the categories

In other words the analysis of benefits will be mainly restricted to a pragmatic assessment of current and past use of the survey data, as reported by the “first-level” users and analysts of the survey data. It did not, therefore, include any interviews with key policy-makers, or detailed analysis of the content of policy documents.

4 Results

4.1 The cost of the NSW Health Surveys

A preliminary analysis of the average costs of running the past surveys, and an estimated average cost of the proposed continuous survey is shown below (Table 1).

Table 1. Preliminary cost estimates of the different surveys (\$)

	Adult Survey (1997)	Adult survey (1998)	Older people's survey (1999)	Children's survey (2001)	Continuous survey (cost per year)
Survey start-up & development costs** ^	207,760 [#]	159,000 ^{##}	86,140	73,000	186,000
Data collection costs:					
Interviewers	283,000	283,000	188,000	170,000*	228,000
Supervisors	33,000	45,000	51,000	46,000*	93,000
Telephone costs	78,000	78,000	101,000	114,000*	100,000
Overheads	20,000	20,000	20,000	20,000*	20,000
Total: data collection	414,000	426,000	360,000	350,000	466,000
Analysis and reporting costs [®]	108,000	67,500	45,750	54,000	53,000
Total	≈729,760	≈ 652,500	≈ 491,890	≈ 477,000*	≈ 680,000
No. of interviews	17,000	17,000	8,900	9,300	24,000
Cost per interview	\$43	\$39	\$55	\$51	\$29

Source: Report on the NSW Health Survey Program, NSW Health, April 2000.

These costs have not been inflated or discounted to any year but are the actual amounts spent (or projected*). The continuous survey estimate of \$680,000 excludes input from the Epidemiology and Surveillance Branch

^Excludes any value of time spent by LJ and MW securing funding for the program(s)

development costs for 1997 survey estimated from 1180 hours (minimum \$32 per hour) in steering and working group time (includes NSW Health Staff, Area Health Service Staff and other topic area experts outside NSW Health); 11/12 (\$70,000 per annum) 1 full time equivalent (FTE); PHO (\$45,000 per annum) 1 FTE; 9/10 (\$55,000 per annum) 1 FTE for sampling methodology and preparation of sample.

development costs for 1998 survey estimated from 200 hours (minimum \$32 per hour) of steering group time; 11/12 (\$70,000 per annum) 1 FTE; 9/10 (\$55,000 per annum) 1.5 FTE.

development costs for 1999 Older Peoples survey estimated from \$40,000 contract for questionnaire development; 180 hours (minimum \$32 per hour) in working group time (includes NSW Health Staff, Area Health Service Staff and other topic area experts outside NSW Health); 11/12 (\$75,000 per annum) 0.5 FTE.

development costs for 1997 Children's Health survey estimated from 180 hours (minimum \$32 per hour) in working group time (includes NSW Health Staff, Area Health Service Staff and other topic area experts outside NSW Health) 9/10 (\$59,000 per annum) 0.5 FTE; 11/12 (\$75,000 per annum) 0.5 FTE.

** development cost does not include the cost of establishing the CATI facility at the NSW Health Department.

+ Analysis and reporting costs for 1997 Report was PHO (\$45,000 per annum) 1 FTE; 11/12 (\$70,000 per annum) half time; 9/10 (\$55,000 per annum) half time which included an analysis of the Area health questions process.

++ Analysis and reporting costs for 1998 Report was PHO (\$50,000 per annum) 1 FTE; 11/12 (\$70,000 per annum) 0.25 FTE. +++ Analysis and reporting costs for 1999 Older Persons Report was 11/12 with Medical Loading (\$100,000 per annum) 0.25 FTE; 9/10 (\$63,000 per annum) 0.2 FTE; hard copy report publication costs (\$7,000).

++++ Estimated analysis and reporting costs for 2001 Children's Survey Report 7/8 (\$53,000 per annum) 0.5 FTE; hard copy report publication costs (\$7,000); \$20,000 contract for data cleaning product.

®Does not include input from other members of the Epidemiology and Surveillance Branch.

The staff costs of the continuous survey program comprise the salary of: a Survey Development Officer, a Reporting and Dissemination Officer, two Survey Supervisors, an Administrative Assistant and ten full-time-equivalent interviewers (employed on permanent part-time contracts). The costs of the Adult and Older People's survey have been estimated using actual expenditure data from the Epidemiology and Surveillance Branch.

The main decisions being currently considered by NSW Health concern: (a) whether to have *discrete* surveys when funding is available versus continuous surveys, and (b) whether to restrict the survey to adults only (with occasional separate surveys for other age-groups), versus having surveys of all age-groups. In Table 2 and Table 4 below we identify some of the *marginal costs* or savings which might arise with these changes.

Table 2. Marginal costs/savings of moving from discrete surveys when funding is available to continuous surveys

<i>Additional costs?</i>	<i>Savings/benefits?</i>
<ul style="list-style-type: none"> Some survey costs (e.g. data processing costs) may increase if the number of people surveyed increases (i.e. the enhanced capacity of the survey program). Increased complexity of survey design and operation which is dynamic (e.g. all ages, and multiple modules, changing over time) 	<ul style="list-style-type: none"> Reduce need to find funds for each individual survey by senior Epidemiology and Surveillance Branch Staff Reduced need for periodic recruitment and training of survey staff (i.e. if using continuously employed CATI interviewers) Continuous (i.e. efficient) use of CATI telephone survey equipment (including quick availability for emergency outbreak investigations) Permanent part-time staff may not need to be paid as much (per hour) as casual staff. Increased frequency of reporting (e.g. access and satisfaction data) Increased certainty of data becoming available. Quality of data (e.g. due to more stable interviewer workforce)

Additional survey costs due to the enhanced capacity (volume of people interviewed) of the survey program.

The survey program is switching from irregular surveys of 17,000 adults with occasional surveys of children or older people (sample sizes 8,000 to 9,000) to a continuous survey of approximately 24,000 people per year. To estimate the additional costs due to surveying more people under a continuous survey program it is necessary to make some assumptions about how often the discrete surveys would have been carried out in future years.

Table 3. Frequency of the different *discrete* surveys when funding is available and resulting annual costs

	Adult survey	Older people's survey	Children's survey	Average annual cost of program
Scenario A*	Annually	Every 2 years	Every 2 years	\$1,136,900
Scenario B	Annually	Every 3 years	Every 3 years	\$975,500
Scenario C	Every 2 years	Every 3 years	Every 3 years	\$649,200
Scenario D	Every 2 years	Every 5 years	Every 5 years	\$520,000
Continuous	N/A	N/A	N/A	\$680,000

Survey cost estimates based on totals less overheads, as shown in Table 1.

Costs shown have not been discounted to present values and no time-frame is assumed.

* Scenario A is intended to directly represent the discrete equivalent of the continuous survey.

Looking at Scenario A, it can be seen that the proposed continuous survey program is estimated to be \$457,000 cheaper (per year) than an annual survey of adults combined with surveys of children and older people every two years. If the frequency of the older people's and children's surveys is decreased to every three years (discrete surveys, scenario B), then the continuous survey is still cheaper (by \$295,000 per year). Only compared to discrete survey scenarios C and D, will the continuous survey program be more expensive. Given how difficult it would be to place a monetary value on the difference between having survey data every year, compared to every two years, or every three years compared to every five years it is difficult to objectively judge whether the extra investment is worth it. At \$680,000 per year the continuous health survey would therefore comprise less than 0.4% of current annual core public health expenditure (NPHEP report, 1998-99).

These cost data take no account of the possible benefits of quarterly reporting of some variables, regular annual reporting of all data about adults, larger sample sizes (over equivalent periods of time), reduced seasonal bias, and – perhaps most importantly – the likelihood of greater use of the survey data due to potential users being able to anticipate and rely on the data becoming available. In other words, if public health specialists and health planners know that up-to-date and accurate information is going to be available on a regular basis, the use of the data can be better integrated into planning cycles, and the commissioning of numerous ad hoc surveys can be avoided.

Additional survey costs due to increased complexity of survey (re-)design and operation.

We have not attempted to estimate what these costs, if any, might be. However, it has been stated that as many as five of the CATI stations might be used (at least initially) for the development and field testing of questions: this implies that a considerable amount of additional work (and therefore resources) may be needed to adapt the continuous survey on a rolling basis (eg. choosing and testing non-core questions and area-specific questions).

Reduced need for periodic recruitment and training of survey staff (i.e. if using continuously employed CATI interviewers)

The reduction in recruitment and training costs is estimated at \$30,000 per year used (Personal communication from Eyeson-Annan M, April 2001)

More intensive use of CATI telephone survey equipment

It is difficult to attach an opportunity cost to the unused or “down-time” of CATI work-stations. However, assuming that 5 CATI stations will continue to be used for special surveys or emergency/disease outbreak investigations, the non-emergency capacity of the Program Unit is 14 CATI stations. Under the continuous program it is anticipated that 14 of these will be used year-round (14 stations × 46 weeks × 5 days = 3,220 workstation-days), compared to 19 stations being used for 18 six-day weeks (20 × 18 × 6 = 2,052 workstation-days). Then, even assuming a modest daily opportunity cost for an unused CATI station – say \$50 per day – gives notional “efficiency savings” of \$58,000.

Permanent part-time staff will not need to be paid as much as casual staff.

The switch from casual to permanent part-time staff is estimated to save \$52,000 per year (NSW Department of Health, 2001: p26). However, these savings may be at the expense of some productivity because permanent staff can also take paid holidays and sick leave etc.

Increased frequency of reporting and other improvements in the quality of data (due to continuous surveying)

Continuous surveying of the NSW population will allow quarterly reporting of some information, such as access to and satisfaction with services, and the prevalence of diseases and risk factors. It will also avoid any seasonal bias which might arise with surveys carried out during particular months of the year. (For example, the incidence of some conditions such as asthma, are known to vary considerably depending on the prevailing humidity or electrical storm activity, and questions about other topics such as sun protection may be more relevant if asked at certain times of the year).

However, a benefit of a continuous survey program with a potentially major impact is the creation of certainty that particular information will be known on an ongoing, regular basis. This may deter potential survey users from commissioning their own mini-surveys, or perhaps sends out more general signals that any lack of progress towards certain health indicators will be observed. Attaching monetary values to these anticipated improvements in data quality is beyond the scope of the present study.

Table 4. Marginal costs/savings of moving from separate surveys for adults, children and older people to having a single survey covering all age-groups

<i>Additional costs?</i>	<i>Savings/benefits?</i>
<ul style="list-style-type: none">Some survey costs (e.g. telephone costs) may increase if the number of people surveyed increases (i.e. the enhanced capacity of the survey program).	<ul style="list-style-type: none">Reduced costs of telephoning households which do not contain a respondent of the target age-range.Reduced staff turnover due to greater variety of questions/responder type.

A reduction in calls to non-targeted households creates two elements of cost reduction: reduced call costs and reduced interviewer time making 'non-productive calls'. Assuming a modest shift in the research interview 'hit-rate' from 1 in 12 (if conducted as a separate survey) to 1 in 8 calls reaching a targeted individual within a continuous survey program of all age-groups reduces call costs by \$62,000 and generates savings of interviewer time worth \$19,000. A further shift from 1 in 8 to 1 in 5 calls reaching targeted individuals would increase these savings by an additional \$46,000 (in call costs) and \$14,000 (in interviewer time). Since the reduction in staff turnover due to greater job satisfaction is anticipated rather than proven, we have not attempted to attach a monetary value to this component.

4.2 Results: the benefits of the NSW Health Surveys

Two methods were used to assess the benefits of the three NSW Health Surveys conducted to date: a survey of all current and past survey users, and selected case studies of a smaller number of users.

The survey of users included some ‘economic questions’, which intended to elicit the marginal benefits of using the survey data. Essentially this involved identifying any use of the data, or reports generated directly from it, which would not have been possible from alternative data sources. In the context of the NSW Health Surveys this meant:

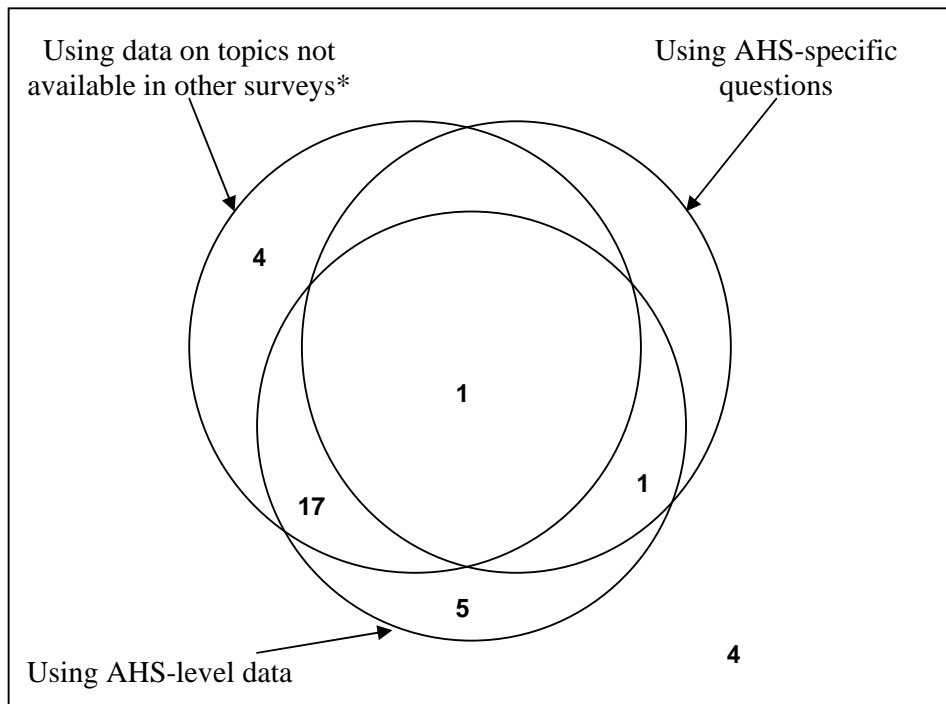
- any use of Area Health Service level data (including, by definition, use of AHS-specific questions)
- any use of data on topics/questions not available in other national or state surveys (primarily, the ABS National Health Survey)

4.2.1 Responses to the ‘economic’ questions

There were 34 respondents to the survey of survey data users. Despite this small number of responders the organisational affiliation of the survey users who responded was very wide. The user survey included responders working in State-level (4) and Commonwealth agencies (3), as well as many within the Area Health Services (17 responders, from 11 of the 17 Area Health Services). Area Health Service data users usually worked in the service’s Public/Population Health Unit or the Health Promotion Unit.

The other users were: ACT Dept. of Health Housing and Community Care, university or hospital-based research centres such as National Drug & Alcohol Research Centre (NDARC), Centre for Health Economics Research and Evaluation (CHERE), Institute of Respiratory Medicine (IRM), Men’s Health Research Centre at UWS, the Children’s Hospital at Westmead. Users outside the university or hospital sector included a health consultancy, a family planning agency and the National Breast Cancer Council. Although this seems to represent a broad selection of all probable users of the survey data, it is still a small sample, and any of the quantitative results reported below should be viewed with caution.

Figure 1. Numbers of users of data not available from other sources



* or data on topics only available in much less detail in other surveys.

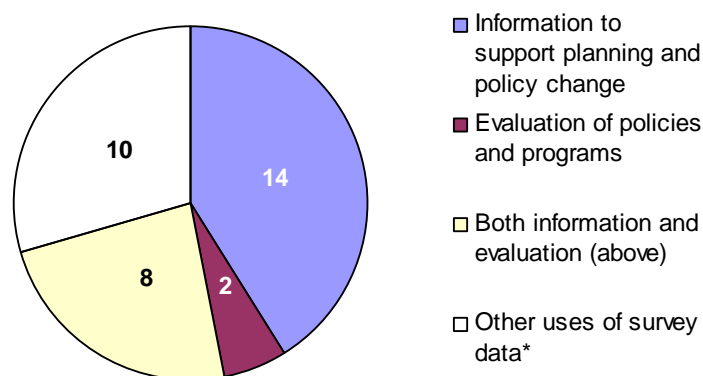
2 respondents had missing data for the relevant questions.

“AHS-specific questions” were devised by individual Areas and only asked of residents in those areas.

Figure 1 shows that the majority of current users of the NSW Health Surveys would not be able to create the information with alternative data sources: they either use data on topics which are unique to the NSW Health Surveys, use data at the geographical level of area health services, or use questions which were specifically included for their Area Health Service. It could therefore be stated that for over four fifths (28 of 32) of users, any identifiable benefits created would be “marginal benefits” - in the sense that they would not have arisen without the existence of the NSW Health Surveys.

Figure 2 (on the following page) shows that almost three-quarters (24 of 34 users) of the survey users who responded thought that their use of the survey was to generate *information to support planning, change policy or practice and strategy development*, or for *the evaluation of policies and programs*. Users who reported this were followed up by telephone and asked to elaborate on how the survey data was or would be used in these ways.

Figure 2. The use of NSW Health Survey data to inform policy change or evaluate policies or programs.



* The other uses included: State/national reporting requirements, monographs and reports, publications in peer-reviewed journals, and conference presentations.

Of the 24 users who said that their use of the data was to support planning, change policy, or to evaluate policies and programs, 18 responded to the follow-up survey (15 by telephone, 3 by e-mail). The following paragraphs summarise some of the points made

Benefits reported

In general interviewees found it difficult to say, and hard to imagine what evidence could “prove” that the survey data had a direct impact on policies or practice. However, users felt the survey data was important for:

Identifying health needs

- There were some examples where interviewees quoted specific “staggering statistics”, which were believed to have given impetus to particular policy drives at and Area Health Service level. They were perceived as surprising and/or shocking to planning committees/executive officers (4). (Of course whether such reactions will lead to any policy or practice changes in the short or long-term is almost impossible to know). For example, problems identified at a local level were:
 - Men not seeking hospital care when in need (2)
 - High rates of smoking among women (2, 27) or pregnant women (4)
 - Low proportions of smoke-free homes (6,27)
 (either relative to NSW as a whole or other similar area health services)
- Survey data was regarded as essential for health needs assessment or identifying priority policy areas based on other criteria, based on information of the prevalence of conditions, and access to and satisfaction with services

(i.e. the area profiles)(17). However, survey information was not usually used in isolation from other information.

- Potential to link information about risk factor exposures (e.g. smoking rates) to health outcomes (e.g. lung cancer incidence). Even where these relationships have been widely confirmed by larger epidemiological studies elsewhere, if the same associations are evident at a local level it may provide more compelling evidence for local policy change.
- To support broad policy directions, rather than specific policy decisions (e.g. strategy for carers developed in NSW: *NSW Carers' Statement*, following on from the Expression Of Interest *carers' demonstration projects* document. (23),
- Supports an overall effort to base service planning on population health needs (24). It underpins a population-based and needs-based approach to health service planning, as opposed to approaches dominated by the provision of treatment services.

Assessing the feasibility of new/proposed services

- Use in service/project feasibility studies (22) In this feasibility study GP utilisation rates and Pap smear take-up rates provided important supporting information for appraising service planning options.

Assessing the implementation of new/proposed services

- The survey data can provide a baseline or comparison group (25) for the longer term evaluation of the effect of policy or practice changes. (e.g. falls prevention project – across different area health services). Area health services rarely have the resources to conduct their own survey of particular patient groups (17), or their own pilot work. For example, in one AHS, the impact of a new family planning service was evaluated for its effects on health (22).
- Spin-off projects: For example, an audit of services for carers led to the creation of a database of these services which could then itself become an service for carers (25).

As a focus for policy discussion and agreement

- As a focus for local consultation about priorities (17), The survey data may facilitate agreement about issues at a “higher level” than would otherwise be expected. This is particularly important if multi-agency approaches are to be agreed upon (here, to reduce alcohol-related harm). For example, in one AHS the NSW Health Survey data was used in conjunction with information from other sources for a concerted campaign to put alcohol on the local health agenda. This included the production of ‘fact sheets’ for all agencies who might play a role in a multi-agency program.
- Facilitates programs which cross area health service boundaries to be adapted to local differences, but evaluated in the same way. (For example, the Rural Health Services Falls Prevention Project which spanned several AHSs.) (17)

- Adding to and validating information obtained from other sources (e.g. from the records of cancer screening agencies) “We really just use it as a reference point in our thinking”

Other reported benefits

- Forms the basis of key reports and oral advice for planners, State ministers
- Academic papers published or given externally to other audiences

Stated limitations or difficulties of using NSW Health Surveys:

- Limited resources/training of some agencies to analyse the data themselves.
- Some AHS users would still prefer data at an even smaller area (e.g. possible linkage to LGA areas)
- Some post-coding errors and other mis-codings have been identified
- One user thought the results were “over-rounded” (to nearest 500)
- Currently those with access to the unit record data (i.e. via the HOIST system) are mainly public health/health promotion, population health staff. At present policy and planning staff generally have not taken up the opportunity to access the data by applying for HOIST access or through individual requests for unit record data.

Stated advantages of using NSW Health Surveys (as opposed to other surveys):

- It is the only source of population data on particular health topics, for example on the use of or satisfaction with health services, or on the quality of life. For example, the data on alcohol consumption describes not just how often people drink alcohol (i.e. on how many days in an average week) but how many standard drinks are drunk on those days. This type of data was regarded as unique and very useful (7).
- It is the only source of data at the level of health service areas (7). This facilitates comparisons between AHSs, and between individual AHSs and NSW as a whole. Such data are regarded as especially crucial given the geographical and demographic extremes contained within NSW.
- NSW Health Survey data are free to use (cf. ABS NHS data has to be paid for).

Stated advantages of a continuous survey program:

- Activities or health problems which are likely to be seasonal (e.g. asthma, physical exercise) would be more accurately monitored throughout the year. (7)
- Assuming continuity in core epidemiological and demographic questions allows the health effects to be evaluated in the long-term.

Suggested improvements:

- Carry out on a regular basis, so that time trends can be monitored. (4)
- Record respondents’ Local Government Area of residence. (4)
- Make access to the unit record data easier. (5)

- Present the results with: information regarding actual counts/base numbers, response rates, and more interpretation and discussion of findings. (8)

4.2.2 Limitations of the user survey results for estimating survey benefits

One respondent stated that “our use of the data doesn’t quite fit the boxes” [in the questionnaire]. This partly vindicates the decision to adopt a more qualitative approach to evaluating the range of benefits of the health surveys. In any case, the quantitative results would relate to such a small sub-sample that they would not be convincingly representative of all users.

Even with a qualitative approach some respondents did not feel able to elaborate very much on the use of their project’s results for a number of reasons. In some cases the survey data had only been available for a relatively short length of time (the Older People’s Survey in particular). For other users the relevant project had only just started, or the respondent had only recently joined the project or department. This meant that for many projects most of the reported benefits of the NSW Health data were yet to be realized.

Lastly it should be kept in mind that those who responded were nearly all effectively “first-level” users – people whose main job is to analyse or interpret the data. This was despite the initial survey going out to policy makers, such as the CEOs of area health services. Had the survey yielded more responses from policy-makers (i.e. “higher level” survey users), then it may have revealed a different view of the policy-informing influence of survey data.

4.3 Case studies to illustrate the range of benefits of the NSW Health Surveys

Case Study 1: Smoking reduction and smoke-free homes

General

Surveys used: 1997 and 1998 Adult Health Surveys.

Topics and questions: self-reported smoking behaviour and related demographic and household factors.

User: Health Promotion Unit of Central Sydney Area Health Service.

The 1998 data from the Adult Health Survey also allowed an analysis of the distribution of smoke-free homes. Central Sydney was found to have one of the lowest proportions of smoke-free homes in New South Wales. The NSW Health Survey enabled an exploration of the factors associated with living in a smoke-free home. Many households where people smoked indoors were those where families with young children lived. As a result of these analyses an intervention based on social marketing techniques was targeted in one LGA area and at these types of household. This was a major advertising and education campaign including the availability of materials in Arabic as well as English. It is hoped that the next round of NSW Health Surveys will allow the effectiveness of these interventions to be evaluated at a population level.

Benefits to future research and research use

The project did not directly lead to any increases in research capacity (e.g. any qualifications of research staff). However, some of the people who analysed the data did so as part of their Public Health Officer training. For at least one of these PHO trainees the project enabled them to publish in academic journals. Such academic research credentials are increasingly regarded as essential experience for a Public Health Officer.

The analysis of the area-specific questions on sexual health directly supported a successful grant application to the NHMRC (the *National Sexual Health and Attitudes Survey*). This grant has brought three-quarters of a million dollars of research funding to study a locally and nationally important problem. It will also be the largest study of sexual health behaviours conducted in Australia. This is regarded by the local research team as a “huge spin-off”. They plan to include other strategically important questions in future NSW health surveys.

Political and administrative benefits

To date, none reported.

Health sector benefits

The availability of the NSW Health Surveys “greatly enhanced” an existing initiative funded by the area health service to reduce tobacco-related health problems. The survey allowed the identification of areas of greatest need in relation to smoking. In particular, the survey data revealed that the prevalence of smoking amongst young women was very high relative to the State as a whole. The area health service therefore devised plans to target smoking reduction interventions at this group. The

effect of the social marketing campaign to reduce smoking and encourage smoke-free homes will be evaluated using the next survey round.

Broader economic benefits

To date, none reported.

Other anticipated benefits? One of the things which has proved very useful is that by asking area-specific questions the AHS has been able to collect what is effectively “pilot data” for larger prospective studies. It also demonstrated the feasibility of using computer-assisted interviewing techniques for particular topics (e.g. sexual health).

Also, in the opinion of the respondent: “... the health survey methodology has set the standard for community-based survey work, and we’re using that method as much as possible now for other related work”.

Other points

Although the project was not planned in the knowledge that the survey data would become available “the availability of the health survey data meant that our whole planning approach was much more evidence-based than it would have been otherwise”. Also: “it certainly makes the evaluation of the programme a lot easier – there’s regular data coming in about smoking rates”.

The research team were able to include area-specific questions in the 1998 survey on the stages of change model in relation to smoking cessation (also extra local questions on sexual health, urinary incontinence, caring for older people, and membership of community groups: these will lead to 3 or 4 publications).

Note that since this project was concerned mainly with people’s health behaviours, the research and related interventions were not expected to lead to any changes in clinical practice.

Case Study 2: Child Death Review Team and injury prevention

General

Surveys used: 1997 and 1998 Adult Health Surveys.

Topics and questions: questions on injuries, vaccination status, sun protection, and well-being indicators

User: Commission for children and young people

The availability of the NSW Health Surveys helps support the work of the Child Death Review Team, who produce an annual report each year for the State Parliament. The role is currently “more one of monitoring than influencing policy”.

They use their own data on child deaths and analyse these in conjunction with the NSW Health Survey data on injuries.

Benefits to future research and research use

It was mentioned that trends in injury data may help in looking for patterns in death data. Conceivably then, a detailed understanding of the aetiology of injuries may inform future research strategies for studying deaths in childhood. The interviewee considered that the Commission had not been in existence for a sufficiently long

period of time for it to have generated significant enhancements in research capacity (e.g. staff with new qualifications or specific new skills).

Political and administrative benefits

The Child Death Review Team makes policy recommendations directly to Parliament. This involves a system for regularly reporting which recommendations have or have not been implemented.

Health sector benefits

Some recommendations (as above) made by the Child Death Review Team may be to alter health service responses to injury.

Broader economic benefits

To date none reported. However, the recommendations that the Commission makes are to all parts of government, and are not restricted to the agencies responsible for health. It is worth noting that if reductions in the number of child fatalities or reductions in the numbers of injuries to children can even be partially attributed to the Commission's work, then the estimated economic benefits could be considerable. This is because most health economic approaches – and public opinion - attach much greater value to saving the lives of those who have more years to live (i.e. children) and who are healthy (i.e. most children).

Other anticipated benefits?

Another major function of the Commission is to monitor the wellbeing of children in NSW. The interviewee anticipated that the NSW Children's Health Survey will be a significant contribution to this.

Other points

The work of the commission has no reported or intended impact on clinical practice; the main aim is to influence policy through direct advice, training for policy-makers, and legislation.

(Many of the responses above were hypothetical, in the sense that the Commission will really know how useful the NSW Health Survey data is when the 2001 Children's Health Survey data becomes available).

Case Study 3: Use of asthma “preventer” medications and asthma management plans

General

Surveys used: 1997 Adult Health Survey.

Topics and questions: questions relating to asthma medication and self-care.

User: the NSW Health Department Asthma Data Working Group (a multi-disciplinary team drawn from universities, area health services and NSW Health).

The NSW Health Department convened a group of people (the Asthma Data Working Group) to analyse the results of the NSW Health Survey questions relating to asthma. In particular, one of the three areas that the working group investigated was the appropriateness and prevalence of different approaches to disease management.

Benefits to future research and research use

The main outcome of the project was data describing of the use of “preventer” medications and use of written asthma management plans: this analysis has been published as an article in the Medical Journal of Australia. The main findings of the paper were:

- Despite the growing use of preventer medication and written asthma management plans, they were still significantly under-used amongst those who might benefit.
- Although the factors associated with adherence to medication appeared to be complex, particular groups could be identified as less likely to adhere to treatment recommendations (e.g. younger people, people who had never smoked).
- The paper concluded by calling for the development and implementation of new strategies to encourage adherence to medication.

However, the interviewee stated that “the point is that the data that can be collected in a survey can be more specifically targeted to answer questions than data aggregated from routine sources”.

The project did not directly lead to any identifiable increase in research capacity (e.g. any qualifications or special experience gained by the research staff).

Other anticipated benefits?

It was difficult to know whether the published results of the research had or would have any attributable effects on policy. The interviewer believed that the research had policy implications but more by the way it “forms part of an overall picture about what should be done; I think it tells us that there is still scope for improving the adherence to current guidelines. It doesn’t tell us about how we should go about doing that”

Case Study 4: AIHW work on issues for Older Australians

General

Surveys used: 1999 NSW Older People’s Survey.

Topics and questions: questions on vaccination status and falls

User: AIHW, Population Health Unit.

The role of this data user is to support other units’ work programs. The NSW Older People’s Survey data was used to generate information to be included in the Aged Care Unit’s annual publication “Older Australians at a glance”.

Benefits to future research and research use

The analysis of the NSW Older People’s Survey enabled a more population health focus within the “Older Australians at a glance” report. Although three topics have been identified for study, work so far has concentrated on analysing influenza immunisation rates. At present the outputs of the project have only been disseminated internally, and used largely “as an educational tool”.

The NSW Survey data on the immunisation rates has stimulated a search for other national level data on the same topic.

Other anticipated benefits?

It is hoped that some of the results might be publishable as academic articles. It was noted that the role of the AIHW is primarily to provide a series of descriptions, and data analysis to support policy-makers, rather than to directly comment on policy. The main intended recipients of their reports are federal government departments, particularly the Department of Health and Aged Care.

Other points

On the uniqueness of NSW Health Data: the interviewee stated that the NSW Health Survey data was usually the first data source which they turned to on any given health subject. They said that this was due to their confidence in the quality of the data.

Case Study 5: Monitoring the NSW cervical screening program

General

Surveys used: 1997 and 1998 Adult Health Surveys.

Topics and questions: usual cervical screening frequency, time since last cervical smear and hysterectomy status

User: Specialist in cancer surveillance within NSW Health.

NSW Health Surveys 1998 data was similar to ABS NHS data; in 1997 the NSW survey collected data on hysterectomy rates in NSW. “The main advantage of the NSW Health Survey is the numbers and the accuracy of the estimates. The numbers in the National Health Survey were just not sufficient - even with the supplement Women’s Health Survey – to generate estimates at the Area Health Service level in NSW.”

Also, the other major source of data on cervical screening - the Pap test register (run by the NSW Cancer Council) – use the NSW Health Survey data to adjust their estimates of the number of women in the at risk target group for screening

The only alternative source of data on age-specific hysterectomy prevalence is the inpatient statistics on the number of hysterectomy procedures being carried out. There are several limitations of this data: (i) it only provides annual *incidence* data, from which population prevalence data must be estimated by looking at historical incidence rates; (ii) it includes partial hysterectomies, i.e. women who still have cervixes despite having had a hysterectomy. It has since become apparent that these estimations were substantially lower than the actual self-reported hysterectomy prevalence rates provided by the NSW Health Survey. (nb. Recall or knowledge of hysterectomy status is thought to be reliable, relative to the recall of other health events).

As far as estimates of the numbers of women having Pap tests is concerned, the registry collects data about the total number of tests carried out. This is the source of the most reliable estimates on numbers of women screened. However, certain “key demographic data” are not collected by the registry, including a woman’s country of birth and their indigenous status. The NSW Survey data is therefore needed to monitor the effectiveness of the programs which aim to increase screening in high risk

groups: older women, women in remote areas, women from non-English-speaking backgrounds, and Aboriginal or Torres Strait islander (A&TSI) women. In other words the survey data allows impact assessments of the targeted interventions. Although it is known that self-reports of Pap screening overstate the screening rates (by 10 to 14%), the survey still provides reliable information on the *relative* differences in screening rates between groups. (Nb as well as recall bias, there is the possibility of the questions on Pap screening being “loaded” – i.e. the question itself implies that the woman should have had a smear.) As long as successive surveys use the same questions and methods they can also measure relative change over time.

Benefits to future research and research use

Comparison of rates (Mamood and Taylor)

NSW annual reports of the cervical screening program.

“The problem is I’m not a direct user of those data, except in producing a surveillance report”; therefore, we do not conduct the major analyses ourselves, and our use of the data is unlikely to lead to new research skills or qualifications. The “cervical screening coordinators” at a local level area probably perform the impact assessments (of their programs).

Political and administrative benefits

AIHW National screening reports.

Health sector benefits

One of the interesting discoveries within the NSW survey data was the substantially lower hysterectomy rate amongst women of non-English-speaking background (NESB). We have “an absolute need” for the hysterectomy rate data, in order to accurately measure the take-up of screening amongst eligible women.

One of the key strengths of the NSW survey data is the ability to examine the A&TSI and NESB groups separately. This has already revealed surprising variations in some health-related variables in these groups (see below on hysterectomy rates), and is a far better proxy of people’s socio-economic and ethnic status than country of birth (the only “ethnicity” variable recorded as part of most inpatient records). The NSW data also for the first time allowed a comparison of screening rates amongst those from different NESB groups and has revealed substantial differences. (Previous estimates had to be imputed from known concentrations of people with different ethnic backgrounds in different communities). Moreover with the NSW Health Survey these variables are known at the level of the individual, not for small areas, or whole hospitals etc.

Broader economic benefits

To date none reported.

5 Discussion

With some previous examples of studies which have successfully documented the impact of health services research on health services policy and practice (Buxton and Hanney, 1996; Buxton et al., 1999) this evaluation started with an optimistic view of the possibility of at least partially attributing some policy changes or health service benefits to the use NSW Health Survey data. However, initial hopes of being able to quantify the effects of the survey data on health policy and practice proved to be unrealistic and the main results presented are primarily qualitative. This is partly due to the short time-frame in which the study had to be carried out. It also reflects that any theoretical chain of causation between survey data and policy decisions is long and fragile. Essentially, health policies are the outcome of many factors, of which survey data are only one.

The attribution of particular health or economic benefits to the existence of health survey data would require strong evidence about a number of intervening relationships. These are: the association between health benefits and economic benefits; the association between preventive or health service interventions and health benefits; the association between health policies and strategies and health interventions (as implemented); and lastly, the association between health survey data and health policy. In any given context the evidence on any one of these relationships is usually partial and ambiguous. Even where good evidence exists, the level of association may be weak. Also, showing that a piece of survey information influenced policy requires some way of establishing or estimating what would have happened in the absence of the survey, adding another layer of methodological complexity.

Thus, one of the interviewees stated:

I cannot think of a specific example of the data influencing policy or services. ... generally, of course, the data from the survey complements data from other sources and that all builds up to influence policy and services rather than data from one source having a singular effect [...] It isn't obvious to me that you can identify such clear cause and effect relationships for something like a state-wide health survey.

This statement echoes the accounts of others who have attempted to investigate the influence of research on policy in the health field, for example Elliott and Popay (Elliott and Popay, 2000):

Research evidence, especially from the social world, is unlikely to be sufficiently clear cut and unambiguous to be translated directly into policy; [and], the direct influence of research evidence on decision making was tempered by factors such as financial constraints, shifting timescales and decision makers' own experiential knowledge. Research was more likely to impact on policy in indirect ways, including shaping policy debate and mediating dialogue between service providers and users.

For economists, with a focus on the *marginal* benefits of health survey data, one has to consider *how decisions would have been made differently* (and hence have yielded different benefits) *in the absence of the survey data/information*. This essentially means how decisions would have been made differently if the next best available survey data source had been used (e.g older data, or data from a different population or larger area). Such questions present major methodological challenges.

There is also the issue of which informants are the most reliable observers of the factors which influence the policy process. The basic choice is between first-level

users - the data analysts and descriptive report writers, and the higher-level users who are closer to the points (or people) where decisions are made, policies drafted and budgets approved. Here we have sampled the first-level users of the NSW Health Survey and asked them about the actual or potential impact of their work on health policies and practice.

An alternative approach is to analyse the accounts and views of policy-makers in relation to particular policy changes, decisions or policy documents. For example, Hodge's analysis of use of the 1994 NSW Health Promotion Survey (Hodge, 1997), analysed the views of key actors in an Area Health Service in relation to particular policy documents. She arrived at the gloomy conclusion that:

Research is used to legitimise policy directions which are made for many other complex reasons. Research data which does not fit a feasible policy direction may be used in a ritualistic way to decorate a report, but will be ignored and hence have no impact on guiding practice, [and therefore that] NSW Health should be cautious about future investments in this kind of research [i.e. health surveys].

The interviews conducted for this study do not present such a pessimistic picture. Whilst examples of the direct impact of the survey data on policy or practice were rare, most interviewees felt that their use of the data had a more general, long-term influence on policies and policy-makers. Moreover, as one interviewee stated:

It is the best source of data for working with health improvement; the only source of AHS information on many things.

Prompting such general comments on the usefulness or otherwise of the survey data, from actual and potential data users, is undoubtedly subject to bias, but may ultimately be the best way of monitoring the benefits derived from survey expenditure. Importantly, relatively simple questions about survey data use can give valuable insights into barriers to using the survey data to inform policy or practice. In-depth case studies of the use of survey data use are generally prohibitively expensive, and "benefit scores" derived from simple questionnaire surveys of users have limited validity. For example, Hanney et al.'s comparison of questionnaire-based and case study-based assessment of research benefits revealed more differences for those projects which formed "part of a longer and wider research stream" (Hanney et al., 1999). However, even if the use of scores is distrusted, the information produced by simple questionnaires and the process of routinely reporting on the use of survey data may itself be very worthwhile.

6 Conclusions

- In broad terms the NSW Health Surveys is meeting the needs of a very wide range of users who are in a position to influence health policy at the level of Area Health Services, State and Commonwealth departments.
- Over two-thirds (24 of 34) of users of NSW Health Survey data say they use it to inform health planning or policy change, or to evaluate programs and policies. For the reasons already discussed it is not possible to quantify the benefits of the NSW Health Surveys. This is largely due to the very many other influences on policy-makers and decision-making.
- The availability of data at the level of Area Health Services, on certain topics, and with sufficient sample sizes, means that the types and quality of

information produced could not be produced from alternative surveys (e.g. the ABS National Health Survey). Only four of the surveyed users had made use of information that probably could have been obtained from other sources.

- A survey of the main types of survey data users and selected case-studies reveal that:
 - specific instances of being able to attribute policy change to particular survey information have been rare.
 - there is a strong belief amongst data users that the survey data nevertheless provides essential contextual information which influences health policy-makers and policies in a more general, indirect and long-term way.
 - The survey information is invariably used in conjunction with information from other sources.
- Examples of the direct impact of the NSW survey data on policy or practice were:
 - Some “staggering statistics” about the low proportion of smoke-free homes, and high rates of smoking among women, which led to targeted health promotion campaigns.
 - Background information from the surveys about carers and their needs informed the NSW Carer’s statement, and led to demonstration projects (of services to support carers).
 - The NSW Health Survey information has facilitated the development of programs which span a number of area health services.
- Survey data users believe that, in the long term or in some instances, their work:
 - enhances the effectiveness of existing programs,
 - enables the development and funding of new programs
 - engenders a population and public health approach to policy and planning
- According to the users these benefits were achieved through:
 - identifying groups of people, geographic areas or conditions which represent those in the greatest health need.
 - evaluating the effectiveness of interventions on the local prevalence of different conditions or health-related activities. (e.g. uptake of preventer medication and use of written asthma management plans by asthma sufferers).
 - providing a common focus of discussion in relation to priority-setting, and hence greater agreement amongst stakeholders.
- The introduction of a continuous health survey program should enhance most of the benefits described, but it is impossible to say by how much.

- Other benefits, less directly related to policy and practice are:
 - the enhancement of future research capacity by enabling people to gain qualifications or specific skills through use of the survey data.
 - setting high standards for community based survey work, particularly through telephone interview methods.
- The main limitations of the NSW survey data, as reported by data users were:
 - The survey data informs broad strategic directions but rarely helps choose the most effective or cost-effective programs.
 - Its present availability via HOIST is not user-friendly, and there is insufficient support to help potential users who are less experienced at research and data analysis.
- Because the NSW Health Department incorporates both key policy-makers *and* the producers and main analysts of the survey data there should, in theory, be more scope for survey findings to feed directly into the policy process than in many other situations. However such optimism may be misplaced. Preliminary evidence regarding the early use of the AHS-specific questions (Quaine et al., 2001) suggests that even the closest proximity of question developers and potential data users cannot guarantee the analysis and use of survey data.
- Within a limited time-frame it is impossible to quantify the benefits of health survey data. Even with more time and other resources, it is difficult to see how health economists or others can ever convincingly “measure” the effect of research or survey data on health policies and practice. At present, any formal cost-benefit analysis or cost-effectiveness study of different survey options is probably impossible.
- One possible way forward is through Willingness-To-Pay (WTP) studies. WTP techniques would derive how much health organizations value health survey data by asking them (or key policy-makers within them) how much they would be willing to pay for it. Related “revealed preference” techniques could analyse how much had been paid for similar health survey data in the past: many area health services, until fairly recently, have made contributions of \$25,000 towards the funding of the original NSW Health Surveys. Area health services or other organizations – perhaps due to pessimism about the likelihood of another State-wide health survey - have also been known to commission health surveys from commercial survey organizations. How much they have paid on these occasions might also be used as a proxy of the value of the health survey data that is now collected.
- On another less pessimistic note, other analyses of the relationship between research and health policy have concluded that “public health is more influential if topical, timely, well-funded and carried out by a collaborative team that includes academics”; and also that “evaluations are more influential if, in addition, they are commissioned by health authorities but based on local collection of data, and instruments and incentives to implement policy are available.” (Davis and Howden-Chapman, 1996)

- Accordingly, the secure funding of a continuous survey program, managed and conducted within NSW Health, should at least maximise the chances of the survey information influencing policy. It also sends out an important signal that NSW Health is committed to creating an evidence-based policy environment.

References

- Australian Bureau of Statistics (1999): Review of the ABS Household Survey Program (internal report). pp67.
- Banks, C. and Eyeson-Annan, M. (2001): Uses of NSW health survey program data - a survey of users. NSW Public Health Bulletin **In press**,
- Buxton, M. and Hanney, S. (1996): How can payback from health services research be assessed? Journal of Health Services Research and Policy **1**, 35-43.
- Buxton, M., Hanney, S., Packwood, T., Roberts, S. and Youll, P. (1999): Assessing the benefits from North Thames research and development. pp197.
- CDC (2001): Behavioural Risk Factor Surveillance System: How the BRFSS Data are used. 2001, URL <http://www.cdc.gov/nccdphp/brfss/dataused.htm>> accessed 24th August 2001.
- Davis, P. and Howden-Chapman, P. (1996): Translating research findings into health policy. Social Science and Medicine **43**, 865-872.
- Elliott, H. and Popay, J. (2000): How are policy makers using evidence? Models of research utilisation and local NHS policy making. Journal of Epidemiology and Community Health **54**, 461-468.
- Hanney, S., Davies, A. and Buxton, M. (1999): Assessing benefits from health research projects: can we use questionnaires instead of case studies? Research Evaluation **8**, 189-199.
- Hodge, W. (1997): The use of survey data in health promotion planning: a qualitative study of practitioners (MPH treatise). Department of Public Health and Community Medicine. pp89.
- Quaine, J., Sainsbury, P. and Williamson, M. (2001): Getting population health research to influence health service practice: use of area health service questions in the NSW Health Survey. (Unpublished paper)

Appendix A

Buxton & Hanneys' (1996) typology of the benefits from health services research:

<i>Type of research benefit</i>	<i>Description</i>
Knowledge	“Knowledge may be entirely new, confirmatory or even simply provide local evidence of a fact long established in the world literature”. Note that knowledge which has been peer-reviewed and/or published is accorded higher validity than that which has not.
Benefits to future research and research use	i) the better targeting of future research. ii) the development of research skills, personnel and overall research capacity. iii) a critical capability to utilise appropriately existing research including that from overseas.
Political and administrative benefits	i) improved information bases on which to take political and executive decisions (including evidence “that decisions were influenced by the improved information base”). ii) other political benefits from undertaking research (e.g. “the use of research to: deflect criticism by showing the problem is being investigated; delay immediate decision making; and justify decisions taken for other reasons”).
Health sector benefits	i) cost reduction in the delivery of existing services. ii) qualitative improvements in the process of service delivery. iii) increased effectiveness of services eg. increased health. iv) equity eg. Improved allocation of resources between areas, between population groups, or improved accessibility.
Broader economic benefits	i) wider economic benefits from commercial exploitation of innovations arising from health R & D. ii) economic benefits from having a healthy workforce and reduction in working days lost.
