5. DEVELOPMENT OF SURVEY INSTRUMENT

Figure 1 outlines the process used to develop the survey instrument.

Development of Content Areas

Development of criteria for selection of content areas

A comprehensive list of all possible content areas for the survey was developed, based on a review of current child health policy documents at both state and national levels. The CHSTEG developed criteria to select content areas for the *New South Wales Child Health Survey* as follows:

- a priority for child health as documented in a state or national child health policy;
- meets the information needs of the NSW Department of Health, the 17 area health services, or other organisations dealing with child health;
- information is not readily available from other sources;
- estimated sample size in the *New South Wales Child Health Survey* is large enough to provide data that can be used to generalise responses to the NSW population aged 0–12 years;
- the information is not highly sensitive or likely to cause failure to complete the survey.

To be included in the survey, the proposed content areas needed to meet all of the listed criteria, except for the demographic section, which was already considered high priority. The content area of social capital was added to the survey further along the process, so it was also not considered against the criteria.

Application of criteria to content areas

Criterion 1: A priority for child health as documented in a state or national child health policy

To identify potential content areas to include in the *New South Wales Child Health Survey*, existing state and national policies and child and family health reports were reviewed. These documents included:

- *The Health of Young Australians: A national health policy for children and young people*; [2]
- *Health Goals and Targets for Australian Children and Youth*;[6]
- *The* National *Health Plan for Young Australians*;[7]
- *Caring for health: Caring for children. A discussion paper towards the development of a child health policy for NSW*;[8]
- *The start of good health: Improving the health of children in NSW* [9]
- A survey of experts in child population health conducted by the Division of Population Health, Central Sydney Area Health Service, regarding important indicators to monitor for child health.[10]

Using these documents, a list of proposed content areas for the *New South Wales Child Health Survey* was prepared for consideration by the CHSTEG. The proposed content areas were grouped into three sections: risk factors and behaviours; health status; and health service use. The proposed content areas included: injury, sun exposure, immunisation, nutrition, physical activity, maternal factors, sudden infant death syndrome (SIDS), drug use (smoking, alcohol and other drugs), parent–child interaction, general health, disability, mental health, asthma, oral health, low birthweight, bowel problems, weight, early childhood centres, emergency departments, hospitals, general practitioners, access to health services, parental involvement in health care decision-making, and access to parental support services. Table 1 outlines whether the content area was considered to be a priority, based on this documentation. Some content areas were state priorities for adult health but have their origins in childhood.

Criterion 2: Meets the information needs of the NSW Department of Health, the 17 area health services, and other organisations dealing with child health

The proposed content areas were assessed by the CHSTEG and the area health service contacts according to their information needs. The CHSTEG were asked to rank content areas as: 3=high; 2=medium; 1=low; or 0=not applicable for infants (0<1 years), children aged 1–4 years and children aged 5–12 years. Area health service contacts were asked to rank content areas in the same way for children aged 0–12 years overall. The result of the prioritisation exercise was a CHSTEG score by age group and an overall area health service score for children aged 0–12 years for each proposed content area. The CHSTEG and area health service scores were expressed as an average overall ranking for each content area (Table 1).

Criterion 3: Information not readily available from other sources

The degree to which including the content area in the *New South Wales Child Health Survey* would help to bridge information gaps and provide useful information that could not be sourced elsewhere in NSW or Australia was determined. Three recent documents outlining aspects of child and youth health and wellbeing were reviewed to assist this process: *Australia's Children: their health and wellbeing;*[1] *The Health of the People of NSW: Report of the NSW Chief Health Officer 1997;*[11] and *Children, Australia: a social report.*[12] In addition, work of the Australian Institute of Health and Welfare on developing a national child health information framework was considered.[13] Available information on the proposed content areas was documented so as to determine potential information gaps (Table 1). No information at a population level was available for contact sport injuries and use of

FIGURE 1

FLOW CHART OF STEPWISE PROCESS OF SURVEY INSTRUMENT DEVELOPMENT

Step 1: Development of content areas

Develop criteria for selection of content areas
- Documented in state or national policy
- Meets information needs
- Content not available elsewhere
- Estimated sample size in Child Health Survey large enough
- Information not highly sensitive

↓

Application of criteria to content areas

↓

Final content areas and proposed measurement elements

Step 2: Development of questions

↓

Develop question inclusion criteria:
- Question provides most useful and important information on the content area
- Question is suitable for phone administration
- Question is reliable when reported by proxy

↓

Identification and review of existing surveys for possible questions

↓

Use of existing questions

Modification of questions for:
- Phone administration
- Proxy response

Development of new questions
- Indicator determined
- Consultation
- Draft question proposed

↓

Application of question inclusion criteria to proposed questions

↓

Step 3: review of all questions and pilot of survey instrument

NSW Health Survey Program Staff review questions for:
- Simple Australian English
- Single concept
- Clear meaning

↓

Pilot draft survey instrument (Pilots 1&2)
- Review question responses
- Test methods

↓

Survey instrument finalised

preventative measures for these, infant feeding difficulties, maternal use of folate in pregnancy, attendance at early childhood centers, access to healthcare when needed, health related parental decision making, access to parental support services; and minimal information was available on physical activity levels in children.

Criterion 4: Estimated sample size in the survey large enough to provide data that can be used to generalise responses to the NSW child population

The following documents: *Australia's Children: their health and wellbeing*;[1] *The health of the people of New South Wales—Report of the NSW Chief Health Officer 1997*;[11] and *Children, Australia: A social report,*[12] were reviewed for prevalence and incidence data, in order to estimate the approximate sample size for each proposed content area. The information needs of different age groups (Criteria 2), and the potential for sub-setting of information (Table 1) was also considered when estimating sample sizes that might be achieved. Any proposed content areas with small estimated sample sizes were excluded from the final survey. The sample estimate was less than 50 for injury information on lead exposure, burns and scalds, drowning, and motor vehicle accidents. Sample estimates could not be calculated where information was not available to give prevalence or incidence estimates.

Criterion 5: The information is not highly sensitive or likely to cause failure to complete the survey

NSW Health Survey Program staff subjectively reviewed all the proposed content areas for their sensitivity. Content areas were ranked highly sensitive (HS), mildly sensitive (MS) or not sensitive (NS) in terms of their administration by telephone (Table 1). No content areas were rated as highly sensitive, and while some content areas—such as maternal factors, environmental tobacco smoke exposure, parental knowledge of sleeping positions and risk of sudden infant death syndrome (SIDS), parental drug and alcohol use and attitude to drug and alcohol use by children, parent–child interaction, general health status, mental health status and bowel problems—were considered mildly sensitive, none were considered to be too sensitive to include in the survey.

Continued on page 21

TABLE 1

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs CHSTEG score * 0–1 years	 1–4 years	 5–12 years	 AHS Score**	CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
(1) Risk factors–behaviours									
INJURY–Preventable measures, care, severity	National–state priority Important cause of hospitalisation. Falls are most common category of injury of all injuries and those requiring hospitalisation	NA	NA	NA	NA	Deaths (AIHW–*Australia's children their health and wellbeing* 1998)[1] Hospital admissions data (Inpatient's Statistics Collection, HOIST)[14]; Injury in last 2 weeks and long term condition caused by injury and some details on injury place, type, cause (ABS–National Health Survey 1995) [15]	1643 admissions to hospital for injury/100,000 NSW pop aged 0–14 (ISC) (sample est=139) 7534 injuries/100,000 Aust population 0–14 1995 (National Health Survey 1995) (sample estimate =640)	NS	Lack data on: - care provided outside hospital. - activity at time of injury - Information on risk factors - Population at risk - impact of preventive measures - severity of injury
INJURY–Poisoning, lead exposure Incidence of poisoning Preventive measures Parental knowledge/ attitudes Prevalence of lead exposure	Lead exposure is an issue in National Health Policy for Children Poisoning important for under 5 year olds	1.8	2.3	2	2.3	Deaths (AIHW–*Australia's children their health and wellbeing 1998*) [1]; Hospital admissions (Inpatient's Statistics Collection, HOIST) [14]; Population data– (AIHW–National Survey of Lead in Children 1995) [16]	~300/100,000 poisoning requiring hospital 0–4 Aust pop (sample estimate 0–4= 12)	NS	Questionnaire not a good way to get info on lead–knowledge and attitudes maybe Include service use after poisoning Lead poisoning less likely outside risk areas therefore may not be state issue Lead higher priority than poisoning
INJURY–Falls Incidence of falls Preventive measures Parental knowledge/ attitudes	National–state priority Important cause of hospitalisation. Falls are most common category of injury of all injuries and those requiring hospitalisation	1.2	2.4	2.4	2.5	Deaths (AIHW–*Australia's children their health and wellbeing 1998*) [1] Hospital admissions (Inpatient's Statistics Collection, HOIST) [14] Type of injury caused by falls (ABS–National Health Survey 1995)[15]	695/100,000 falls requiring hospital Aust pop 0–14 2453/100,000 falls causing injury Aust pop 0–14 (96/97) sample estimate of falls causing injury=208)	NS	Incidence injury related to playground equipment–place of equipment; Falls from horses–motorbikes–All terrain vehicles; Use of motorbikes–ATVs; Protective gear when riding
INJURY–Burns–scalds Incidence of burns–scalds Preventive measures–e.g. hot water temperature control	National–state priority Important cause of hospitalisation. Most hospitalisation in under 5 year olds	2.4	2.7	2.1	2.4	Deaths (AIHW–*Australia's children their health and wellbeing 1998*) [1] Hospital admissions (Inpatient's Statistics Collection, HOIST) [14]	~103/100,000 burns requiring hospitalisation Aust pop 0–4 (96/97) (sample estimate 0–4 =4)	NS	Willingness to pay for temperature control devices

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	**CRITERION 1** Priority of Child Health (as documented in policy)	**CRITERION 2** Meets information needs				**CRITERION 3** Other sources of data	**CRITERION 4** Prevalence–Incidence	**CRITERION 5** Sensitive ***	**COMMENTS**
		CHSTEG score * 0–1 years	1–4 years	5–12 years	AHS Score**				
INJURY–Drowning Risk exposure e.g. unfenced creeks–dams Preventive measures–e.g. fencing, learning to swim	National priority Important cause of child mortality. Major cause of injury in children up to 5 years	2	2.7	2.3	2.4	Deaths and place of drowning deaths (AIHW–*Australia's children their health and wellbeing 1998*) [1] Hospital admissions (Inpatient's Statistics Collection, HOIST) [14]	~20/100,000 hospitalisations for near drowning pop Aust 0–4 years (96/97) (sample estimate 0–4=1)	NS	Place of near drowning incidents; Fenced child play area (rural); Attendance at swimming lessons Use of threatening questions re legislation requirements–is this useful? e.g. pool fences, bike helmets Won't yield much useful information
INJURY–Motor vehicle–traffic accidents Preventive measures–e.g. use of helmets–child restraints Incidence of motor vehicle–traffic accidents	National–state priority MVA largest cause of childhood injury deaths Cycle accidents more important cause of hospitalisation than MVAs Pedal cycle accidents more common in 5–12 year olds	2.4	2.4	2.5	2.5	Deaths (AIHW–*Australia's children their health and wellbeing 1998*) [1] Hospital admissions (Inpatients Statistics Collection, HOIST) [14] MVA causing injury (ABS–National Health Survey 1995) [15] Number of injuries related to pedal cycle–pedestrian accidents is unknown	38/100,000 hospitalised for MVA Aust 0–14 years pop (Sample est=3) 392/100,000 injuries caused by MVA Aust 0–14 years pop (Sample est=33) 99/100,000 0–14 years Aust pop hospitalised for cycle accidents (Sample est=8) 34/100,000 0–14Aust pop hospitalised for pedestrian accidents (Sample estimate =3)	NS	Would like distinction between cycle, car and pedestrian involvement in MVAs Use of bike helmets high priority
INJURY–Contact sports Preventive measures–e.g. use of protective gear, mouthguards Incidence of sports injuries	National goal	0.2	0.9	2.4	1.8	None available	Unknown	NS	Parental perception of safety of range of sports, role of safety in choosing sport, what actions parents would like taken to reduce injury of specific sports
SUN EXPOSURE Preventive measures e.g. use of sun screen–hats	National–state priority Childhood exposure to sun is risk factor for skin cancer–melanoma	2.7	2.9	2.9	2.8	(ABS–National Health Survey 1995) [15] asked whether use sun protection, frequency of use and type of protection, whether skin checked regularly (0–15 years Australia)	9–12% children do not use sun protection 45–65% always use sun protection (decreases with age) (National Health Survey 1995)	NS	0–11 years target group for NSW Health sun exposure campaign–a tracking survey of 600 pre and post is being conducted. There are no prevalence data on this group in NSW; data accuracy very dependent on time of survey

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 years	1–4 years	5–12 years	AHS Score**				
IMMUNISATION Prevalence Barriers–access to immunisation Parental attitudes	Reduce incidence of vaccine preventable diseases is a National–state priority	2.8	2.6	2.3	3	Cases of vaccine preventable diseases (Notifiable Diseases Database, HOIST) [17] Immunisation status (ABS–Children's Immunisation and Health Screening Survey 1995) [18] Parents' reasons for not immunising children (ABS–Child Immunisation Questionnaire 1995)[19]	Immunisation rates vary according to data source and vaccine–60–89% in 1 year olds. % children fully immunised declines with age from 70% at 1year to 22% at 6years	NS	Reasons child not immunised, parental perception of safety and effectiveness of immunisation Immunisation status at school age Attitudes to immunisation and service use Won't get useful information on prevalence, barriers–access
NUTRITION–Breastfeeding Prevalence of breastfeeding– Attitudes	Nutrition is a national–state priority as poor nutrition is a risk factor for adult disease Breastfeeding is a National–State priority	2.9	1.3	0.7	2.5	Women with children under 2 were asked whether they breastfed—data on youngest child (NSW Health Promotion Survey 1994) [20] Women asked if they breastfed children aged 0–3 years (ABS–National Health Survey 1995) [15]	53.9% infants breastfed at 3 months 35.3% breastfed at 6 months (NSW 1994 HPS)[20] 86% children under 4yrs breastfed at some stage (National Health Survey 1995)[15]	NS	Provision of breastfeeding spaces in public places Attitudes to breast feeding in public Nutrition is a key issue Solid food introduction
NUTRITION– Food intake–patterns Meal patterns e.g. no. of meals Eating breakfast Food frequency e.g. fruits and vegetables–breads and cereals–milk	Nutrition is a National–state priority	1.4	2.7	2.8	2.8	2–12 year olds–24hour food recall, weights and heights measured. Sample size 2–12years =1,921 children in Australia (ABS–National Nutrition Survey 1995) [21]	~90% children ate breakfast 5 or more days a week >90% ate cereal foods in a 24 hour period ~33% 2–12years did not eat fruit in 24hours ~25% 2–12years did not eat vegetables in 24hours >90% had milk (NNS 95)[15]	NS	Take away food, lollies, junk food Recall bias with food intake when number of children in the houseTV watching important as exposure to advertisement and link to poor nutrition Fruit and vegetable intake and parental attitudes to fruit and vegetables
NUTRITION– Feeding difficulties Prevalence of feeding difficulties Service use–access to support	Nutrition is a national–state priority Access to services for parental support is National–state priority	2.6	2.2	1.6	1.9	None available	Unknown	NS	Could be confounded by role of maternal depression or family dysfunction

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs		CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 1–4 5–12 years	AHS Score**				
NUTRITION– Food security Prevalence of having insufficient food to eat (usually due to limited income)	National–state priority	2.5 2.7. 2.7	2.3	(NSW Adult Health Survey 1997)–question included by the Illawarra Area Health Service	11% adults report running out of food in the last 12 months and unable to afford to buy more (Sample estimate =935) [22]	NS	
NUTRITION– Maternal use of folate in pregnancy Prevalence folate use in pregnancy Knowledge–attitude	National–state priority Prevention of spina bifida	2.4 0.7 0.4	2.5	None available	Unknown	NS	High priority for 0–1 *age group* Knowledge of food supplementation with folate Include nutrition intake of pregnant women
PHYSICAL ACTIVITY Opportunity to participate in sport Physical activity level	National–state priority Risk factor for adult disease	0.3 1.7 2.7	2.9	(NSW Schools and Physical Activity Survey 1997) [23]		NS	Has there been a recent survey of physical activity in children? Physical inactivity e.g. TV watching Parental perception of neighbourhood safety–walking to school Consider physical activity other than just sport Parental attitudes to physical activity Physical activity generally, not just sport Physical activity is a key issue
MATERNAL FACTORS Smoking in pregnancy Prevalence of smoking in pregnancy	National–state priority Prevention low birth weight	2.9 0.9 1.0	2.8	(ABS–National Health Survey 1995) [15] Australian data on smoking in pregnancy	21.2% women aged 16 years plus smoke daily–occasionally in NSW (NSWHS)[22] 13.7% current smokers and pregnant 18 years plus women (Sample estimate = 178 if restrict to proxy of <2 year olds)	MS	Attitudes to smoking in pregnancy and knowledge Difficulty of getting accurate responses to these questions Problem with recall of this information Smoking exposure in utero priority for Drug and Alcohol Not right survey to ask about maternal risk factors as is a child survey Alcohol use in pregnancy

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 years	1–4	5–12	AHS Score**				
MATERNAL FACTORSAttendance at antenatal care Access to services	National–state priority Prevention low birth weight	2.9	0.6	0.4	2.5	Data on first attendance at antenatal care (Midwives Data Collection, HOIST) [24]	13% attend first antenatal visit >20 weeks (Sampleestimate =78 if restrict to proxy of <1 year olds)	MS	Barriers to attendance Data on first attendence at Antenatal care collected in MDC– low priority to include this Syphilis screening
ENVIRONMENTAL TOBACCO SMOKE EXPOSURE Prevalence of exposure of child to cigarette smoke Parental knowledge–attitudes Parental smoking behaviour	National–state priority– asthma–SIDS	2.6	2.6	2.8	2.9	Smoking prevalence of adults 16 years plus; and Smoke free households (1997 NSW Adult Health Survey) [22]	70% adults 16 yeasr plus live in smoke free households (1997 NSWHS) 42% children under 5 lived with at least one smoker (Australia's Children)	MS	Parents unlikely to answer truthfully Parental smoking Exposure of children to smoke is a priority for Drug and Alcohol
SIDS– Sleeping position Prevalence of prone sleeping position Knowledge–attitudes	National–state priority	2.8	0.8	0.5	2.4	ABS Mortality Data, HOIST [25]	Est sample to respond to sleeping position Qs ~600 if restrict to <1 year olds	MS	Recall bias issues if asking about older child when have younger child in house Younger children only
DRUG USE–SMOKING Parental knowledge of drugs Parental action–attitude re child using drugs Parental action–attitudes to child smoking	National Goal for Children and Youth (Reduce impact of adult conditions which have early manifestations in childhood)	1.6	1.7	2.8	2.6	Australian School Students Alcohol and Drugs Survey (ASSAD) [26]	~24% boys and ~13% girls in Year 5 and 6 had ever tried smoking (would be aged 9–12 years) (Sample estimate =156 boys and 84 girls, depending on proxies' knowledge)	MS	Alcohol and other drugs exposure in the family unit May not be relevant to children aged 0–12 years Parental attitudes to smoking–actions if child smokes supported by Drug and Alcohol Directorate Leave out questions about illicit drugs Not considered highly useful
ALCOHOL Parental alcohol intake Parental provision of alcohol Parental action–attitudes to child drinking	National Goal for Children and Youth (Reduce impact of adult conditions which have early manifestations in childhood)	2	2	2.8	2.5	Australian School Students Alcohol and Drugs Survey (ASSAD) 1996 [26]	~21% children in Year 5 and 6 had ever consumed a glass of alcohol (Sample estimate = 273 if ask for 11,12 year olds, and depending on proxies knowledge)	MS	Exposure to alcohol and other drugs in a family unit Alcohol in pregnancy, alcohol while breastfeeding Not considered highly useful

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs CHSTEG score * 0–1 years	 1–4 years	 5–12 years	 AHS Score**	CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
PARENTAL–FAMILY–CHILD INTERACTION AND FUNCTION Behaviours eg parenting style eg parental reading to child	Enhanced family and social function is National–state priority for children	2.8	3	3	2.6	Family discord and parenting styles (Western Australian Child Health Survey 1993) [27]	~12% families with children had high level of family discord (Sample estimate =1020)	MS	Include questions on 'enjoyment–satisfaction with parenting' and 'parental conflict'–as these can impact on mental health of children as well as physical health issues Parenting style, family conflict, responses to child behaviour Parenting and coping skills Family interactions–family structures and support are key issues Connectedness to community–social capital issues–trust in community, perceptions of community
(2) Health Status									
HEALTH STATUS General measure of health status eg CHQ12	To give overall measure of health status To determine association between health status and other data collected e.g. use of health services–specific health states	2.3	2.8	2.8	2.8	Self reported health status, children under 15 years not included (ABS–National Health Survey 1995) [15] A Functional Status FS II (R) short telephone questionnaire included in the Blacktown Health Survey (1993) [28]		MS	CHQ very useful for a range of mental and physical health problems Ranking depends on items and their relevance Will this work if proxy? Never been done over the phone
DISABILITY– Hearing Prevalence of hearing problems Use of hearing aid Service use	Reduce impact of disability is a National–state priority	2.5	2.8	2.3	2.3	ABS–Survey of Disability Ageing and Carers (1993) [29] Disability defined as limited in some degree to perform self-care, communicate, mobility, and schooling.	Children with disability ranges from 4%–10.6% depending on age and sex–highest in 5–14 age group. (Sample estimate =591) 7.6% children 0–14 years with major disability due to ear disease (Sample estimate=646)	NS	Disability questions–ABS national survey may provide useful questions Disability–include developmental–intellectual disability–access to services, support for families, prevention of secondary disability Otitis media–parental knowledge of symptoms Hearing is a key issue Early screening of hearing

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1	1–4	5–12 years	AHS Score**				
DISABILITY– Sight Prevalence of vision problems Use of glasses–other aids	Reduce impact of disability is a National–state priority	2	2.6	2.6	2	ABS–Survey of Disability, Ageing and Handicap 1993 [29]	2.1% disability due to eye disease (Sample estimate =178)	NS	Vision is a key issue
DISABILITY– Use of limbs–digits Prevalence of limited use of limbs–digits Use of aids Service use	Reduce impact of disability is a National–state priority	2.0	2.0	2.1	1.8	ABS–Survey of Disability, Ageing and Handicap 1993 ABS–National Health Survey 1995 [15]–incomplete use of limbs (current–chronic condition)		NS	
DISABILITY– Restriction in physical activities Prevalence of restriction of physical activities Use of aids Service use	Reduce impact of disability is a National–state priority	2.1	2.8	2.6	1.8	ABS–Survey of Disability, Ageing and Handicap 1993 [29]	Activity limitation due to disability1.12% 5–14 year olds (Sample estimate=95)	NS	
DISABILITY– Speech–language Prevalence of speech–language difficulties Service use	Reduce impact of disability is a National–state priority	1.6	2.8	2.4	2.5	ABS–Survey of Disability, Ageing and Handicap 1993 [29]	~3% with communication disability–5–14 age group (Est sample size=127)	NS	
MENTAL HEALTH– Family–parental issues Risk factors (parental–family–child) eg parenting styles Parental access to support services	Mental health of children is a National–state priority Mental health on e of the 5 national health priorities	2.5	3.0	3.0	2.5	WA Child Health Survey 1993[27] The Mental Health of Young People in Australia, Commonwealth Department of Health and Aged Care (1998) [30]	~12% families with children had high level of family discord(Sample estimate=1020)	MS	Include protective factors, not just risk factors for mental health Include questions on protective factors, social competence of the child; Parenting style,family conflict (could be difficult to measure)

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 years	1–4 years	5–12 years	AHS Score**				
MENTAL HEALTH– Attention deficit disorders Conduct disorder Emotional disorder Learning difficulties Anxiety Depression Prevalence of mental health disorders Service use Access to services	Mental health of children is a National–state priority.	1.8	2.5	2.8	2.8	The Mental Health of Young People in Australia, Commonwealth Department of Health and Aged Care (1998) [30]Prevalence of mental health problems (ABS–National Health Survey 1995) [15]WA Child Health Survey (1993) [27]The Australian Temperament Project (Australian Institute of Family Studies 1983–2000) [31]	Estimated 6 mth prevalence of mental health problems in 4–16 yr olds in NSW (based on WA Child Health survey data) is 18% (Sample = est 810)	MS	Better not to ask specific questions about prevalence of specific disorders. More reliable–valid data available from National Child and Adolescent Mental Health Survey Include questions about emotional and behavioural problems, parental perception, access to and use of services Bullying–bullies–bullied Attitudes to mental health disorders Do disruptive behaviour disorders exist? Supports for family. Consider the Australian Temperament Project (longitudinal study of children started in 1983) which covers the temperament of younger children
ASTHMA Prevalence of asthma Management	State priority—High prevalence in children	2	2.5	2.8	2.6	Recent illness, long term condition, symptoms (ABS–National Health Survey 1995) [15]	8.6–16% children 0–14 years. (Sample estimate 731–1400 children)	NS	Preventive treatment Asthma plan
ORAL HEALTH Prevalence of dental problems ManagementServices used	National–state prioritySOKS program operating since 1996	2	2.5	2.8	2.3	Oral health status, visit details, access, costs etcn=~1000 children across Australia (AIHW–National Dental Telephone Interview Survey 1994) [32]	80% children 5–14 years visit dentist in last 12 months	NS	Visits to dentist Fluoridation–attitudes–knowledge Dental health is a key issue Is there enough data from National Dental Surveillance program in Adelaide
LOW BIRTH WEIGHT Prevalence of low birth weight	National–state priorityLink to other health status	2.1	0.9	0.8	2	Midwives Data Collection (MDC), HOIST [24]	Rate of low birth weight in NSW ~6% births (MDC)	NS	Low prevalence of LBW and data available on all births from MDC–possibly not useful to include Knowledge of causes and consequences Not useful if looking for associations
BOWEL PROBLEMS Prevalence of bowel problems e.g. chronic constipation	Proposed by NCH (Prof D Cass)	1.2	1.8	1.8	1.3	Constipation, diarrhoea recorded as current–chronic condition (ABS–National Health Survey 1995) [15]	Not available	MS	Not considered a serious enough public health issue

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 years	1–4 years	5–12 years	AHS Score**				
WEIGHT Parental perception of body weight	National priority Indicator of growth	1.6	2.2	2.5	2.3	Weight and height of 2–12 year olds (ABS–National Nutrition Survey 1995) [21]	Not available	NS	Obesity and anorexia Parental perception not useful–need to know actual weight Hard to get objective answers through telephone survey
(3) HEALTH SERVICE USE									
	State priority to improve accessibility, appropriateness and quality of health services for children					Little data available on access and satisfaction			Quality of interaction with health services–acceptability is a key issue. Acceptability and prevalence of home visiting in first few years of life. Potential limited usefulness of surveying health service usage. Check the availability of data elsewhere Leave out satisfaction issues
EARLY CHILDHOOD CENTRES Attendance–Satisfaction	Used by infants as primary care provider	2.9	2	0.5	2.4	None available	Unknown	NS	Include have you seen an early childhood nurse as no centres in Northern Rivers Area Health Service
EMERGENCY DEPARTMENT Attendance–Satisfaction	High use by children	2.8	2.8	2.6	2.3	Attendances (NSW Emergency Department Data collection, HOIST) [33]	7.4%–20.2% 0–16 year olds attended casualty in last 12 months (Blacktown Health Survey)58% parents rated care of 0–17year child in emergency excellent–fairly good (Blacktown Health Survey) (Sample estimate=1150)[28]	NS	
HOSPITAL Attendance–Satisfaction	High use by children	2.8	2.8	2.8	2.6	Inpatients Statistic Collection, HOIST [14]	180,000+ admissions 1995–96–est sample size 1372 86% parents rated care of 0–17 year child in hospital excellent–fairly good (Blacktown Health Survey)[28]	NS	

TABLE 1 *(continued)*

PROPOSED CONTENT AREAS AND APPLICATION OF CRITERIA TO PRIORITISE THESE FOR INCLUSION IN THE SURVEY

PROPOSED CONTENT AREAS Specific items	CRITERION 1 Priority of Child Health (as documented in policy)	CRITERION 2 Meets information needs				CRITERION 3 Other sources of data	CRITERION 4 Prevalence–Incidence	CRITERION 5 Sensitive ***	COMMENTS
		CHSTEG score * 0–1 years	1–4 years	5–12 years	AHS Score**				
GENERAL PRACTIONERS SERVICES Attendance–Satisfaction	High use by children	2.6	2.6	2.6	2.4	(AIHW–Australia's children their health and *wellbeing* 1998) [1]	18–32% children 0–16 years visited GP in last two weeks (Blacktown Health Survey) (Sample estimate =2125) [28]	NS	
ACCESS TO HEALTH SERVICES Difficulties in accessing services when needed	National–statepriority	2.9.	2.9	2.8	2.4	None available	Unknown	NS	Hard to ask
PARENTAL INVOLVE-MENT IN HEALTH CARE DECISION MAKING Satisfaction with servi-ces–Parental perception of degree of involvement	National Child Health Policy	2.5	2.5	2.5	2.6	None available	Unknown	NS	
ACCESS TO PARENTAL SUPPORT SERVICES Knowledge–attitudes Use of services	National–state priority–to enhance family and social functioning	2.8	2.6	2.3	2.6	None available	Unknown	NS	Home visiting Strong support for additional questions on Parental support–education and advisory services

Legend

CHS

* TEG score = average ranking of proposed content areas by Child Health Survey Technical Expert Group members 3=high, 2= medium, 1=low, 0= not applicable by age group 0–<1 year, 1–4 years and 5–12 years

** AHS score = average ranking of proposed content areas by Area Health Service contact for all children aged 0–12 years

*** CR 5–Sensitivity of information for telephone administration: NS=not sensitive, MS=moderately sensitive, HS=highly sensitive

Final list of content areas and proposed measurement elements

Following the application of the agreed criteria, the list of proposed content areas was considered for the final survey, with some content areas being dropped and others modified (Table 2). Content areas that were dropped included lead exposure, burns and scalds, motor vehicle accidents, attendance at antenatal care and birthweight (available through another data collection),[24] parental alcohol intake, bowel problems, weight, and parental involvement in healthcare decision-making. Parental and family interaction and family function was limited to the specific components reflecting information needs and available measurement tools such as the McMaster Family Assessment Device,[34] and mental health was limited to the components available using *The Child Health Questionnaire*.[35] Once the content areas were agreed, the CHSTEG was consulted on proposed measurement elements, which are outlined in Table 2. The proposed measurement elements were used as the basis for development of questions.

TABLE 2

PROPOSED CONTENT AREAS FOR INCLUSION IN THE CHILD HEALTH SURVEY AND PROPOSED MEASUREMENT ELEMENTS

Age (years)	Content Area	Proposed Measurement Elements
Risk–protective factors for health and disease		
0–<1	Nutrition–Breastfeeding	Prevalence; Provision of breastfeeding spaces in public; Attitudes to breastfeeding in public
0–<1	Nutrition–Folate	Use of folate supplementation prior to conception and during pregnancy
0–<1	Sudden Infant Death Syndrome (SIDS)	Sleeping position
0–4	Drowning	Place of near drowning incidents; Fenced child play areas (rural); Attendance at learn to swim classes
0–4	Burns and scalds	Awareness of prevention methods; Treatment of burns and scalds that don't reach hospital; How burn sustained
0–4	Feeding and other child-rearing difficulties	Prevalence; Service use and satisfaction
0–4	Immunisation	Barriers–access to immunisation; Attitudes to immunisation; Service use; Status at school age
0–4	Cigarette smoke exposure	Smoke free households; Parental smoking
0–12	Sun exposure	Preventive measures used; Frequency of use of preventive measures
0–12	Nutrition–Food intake	Fruit and vegetable intake; Takeaway food intake
0–12	Nutrition–Food security	Prevalence of insufficient money to buy food
1–12	Physical inactivity	Hours of TV watching
0–12	Parent–child–family interaction–mental health	Parenting style; Enjoyment and satisfaction with parenting, perception of competence; Parental conflict; Family conflict; Child's social competence
0–12	Social capital	Connectedness to community; Trust in community; Perceptions of community
5–12	Injury–Contact sports	Preventive measures eg. use of protective gear; Parental perception of safety of sports; Actions parents take to reduce risk–injury
5–12	Physical activity	Parental concern re safety and walking to school
5–12	Smoking	Parental action and attitudes to child smoking
Health status		
0–12	Health status	General measure of health status e.g. *Child Health Questionnaire* (CHQ) [35]
0–12	Disability	Prevalence of disability; Type of disability; Access to and use of services
2–12	Asthma	Prevalence; Management
0–12	Dental health	Service use
Health service use and satisfaction		
0–12	Health service use	Services used–accessed in response to specific health problems Satisfaction with services used (tie in with feeding–other infant problems); Acceptance of home visiting
0–12	Access to parental support services	Use of parental support services; Types of support used (not just health); Difficulties accessing services
0–12	Parental involvement in health care decision making	Parental perception about degree of involvement in health care decision making
Demography		
0–12	Parent factors	Age, education, employment, receipt of benefits, place of birth, when arrived in Australian; Aboriginal–Torres Strait Islander origin
0–12	Child factors	Age, place of birth, country of birth, education, childcare; preschool, play group attendance, receipt pension–benefits, adopted–fostered, carers
0–12	Household factors	Family structure, number of children in house, housing type, suburb, postcode, health insurance status

Question development

Question Inclusion Criteria

After the content areas and measurement elements were decided, the next step in survey development was consideration of questions to address these. The CHSTEG developed criteria to determine which questions should be included. To be included, the question had to:

- provide the most important and useful information on the content area;
- be suitable for telephone administration;
- be reliable when reported by proxy respondent.

Identification and review of existing surveys for possible questions

In order to determine which questions might be included, any previous surveys that included questions considered relevant to the proposed content areas were identified. The search for existing surveys was not limited to surveys of children; many surveys targeted at adults were also reviewed where content areas included those relevant to the *New South Wales Child Health Survey*. The method of delivery of each survey was also noted, as questions delivered by one method, for example face-to-face, would possibly require modification for telephone delivery.

Over 40 surveys were found and reviewed for suitable questions. Surveys that ultimately provided questions for the *New South Wales Child Health Survey* are listed in Table 3.

Use of existing questions

A set of available questions for each specific element of content areas was developed from existing national, state or international surveys, where questions were available. As much as possible questions were used exactly as they were cited in the source surveys. Questions pertaining to specific survey instruments or questions scales were used exactly according to the validated instrument: for example, the McMaster Family Assessment Device,[15] and *The Child Health Questionnaire*.[35]

Modification of questions

If the mode of administration of the source question was by face-to-face interview or self-complete questionnaire, the questions were modified if necessary to develop

Continued on page 26

TABLE 3

SURVEYS IDENTIFIED AND REVIEWED FOR POSSIBLE QUESTIONS

Name of Survey	Administration	Source
National surveys		
National Health Survey, 1995 [15]	Proxy interview of parent for questions related to children by parent; face-to-face household interview. Breastfeeding questions asked of children aged 0–3 years; sun protection questions asked of all children.	Australian Bureau of Statistics
Child Immunisation Questionnaire, 1995 [19]	Face-to-face interview of parent of child aged 0–14 years about health service use, sight and hearing, dentist and childcare	Australian Bureau of Statistics
Australian School Students Alcohol and Drugs Survey (ASSAD), 1996 [26]	Self-completed questionnaire by children aged 12–17 years currently attending school	Center for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, November 1998
National Nutrition Survey, 1995 [21]	Face-to-face household interview	Australian Bureau of Statistics and Commonwealth Department of Health and Family Services
CSIRO National Nutrition Survey 1993 [36]	Paper based, self-complete questionnaire	CSIRO Food and Nutrition, Adelaide SA
The Mental Health of Young People in Australia, 1998 [30]	4500 children aged 4–17 years face-to-face interviews of randomly selected household, parent completed for children 4–17 years and also self-completde for children aged 13–17 years	Commonwealth Department of Health and Aged Care
National Dental Telephone Interview Survey (NDTIS), 1994 [32]	Telephone survey	Australian Institute of Health and Welfare Dental Statistics and Research Unit
State surveys		
ANZFA Eat Well Tasmania, 1995–1999 [37]	Telephone survey	Menzies Centre for Population Research, University of Tasmania
Quit Evaluation Studies 1998 [38]	Face to face interviews in households including 2500 adults in each wave	Trotter and Mullins, Quit Victoria
The Western Australian Pregnancy and Infancy Survey 1995 [39]	Survey of mothers 12 weeks post birth of child; Self completed, paper based.	Telethon Institute for Child Health Research
The Research Study of Birth Defects Part 1 Pregnancy Questionnaire 1997–2000 [40]	Self completed questionnaire by women who recently had a baby	Telethon Institute for Child Health Research
The Western Australian Child Health Survey, 1993 [27]	A number of survey instruments: *Child Health Questionnaire* —Survey of all children in household aged 4–16 years face to face interview with parent–carer *Family Health and Activity Questionnaire*—information about family relationships of selected households self completed by primary respondent to Child Health Questionnaire *Family Dwelling Questionnaire*—interviewer collected information on dwelling *Household Record Form*—information on the demographic data of all household members and their relationships to each respondent (principle caregiver)—Collected by face-to-face interview *Family Background Questionnaire*—education, employment and other ABS standard demographic data of parent (major care giver) and partner (other major care giver)–Collected by face-to-face interview	Australian Bureau of Statistics and Institute of Child Health, University of Western Australia
Determinants of initiation and duration of breastfeeding 1998 [41]	Cohort study of 556 Perth women–self-completed questionnaire	Jane A Scott, University of Western Australia
NSW Schools and Physical Activity Survey, 1997 [23]	Targeted children–youth in Year 8–Year 10 while at school with self-completed questionnaire	Department of Public Health and Community Medicine, University of Sydney
NSW Health Surveys, 1997 and 1998 [22]	Telephone survey of people aged 16 years and over	Health Survey Program, NSW Department of Health

TABLE 3 *(continued)*

SURVEYS IDENTIFIED AND REVIEWED FOR POSSIBLE QUESTIONS

Name of Survey	Administration	Source
NSW Skin Protection Survey–'Seymour the Snowman', 1998 [42]	Telephone survey with proxy completion by carers of children aged 0–12 years	NSW Department of Health and NSW Cancer Council
NSW Youth Sports Injury Survey 1994–95 [43]	School-based survey of children—youth years 7–11, self-completed questionnaire	Northern Sydney Area Health Service
Holroyd Health Survey, 1995 [44]	*Child Health Questionnaire*—proxy completion over the telephone by parent	Western Sydney Area Health Service
Baby Health Questionnaire, 1989 (NSAHS) [45]	Parents of normal full-term infants aged six months; self-completed mailed questionnaire	Wentworth Area Health Service
Blacktown Health Survey, 1993 [28]	*Child Health Questionnaire*—proxy completion over the telephone by parent of children aged 0–17 years	Western Sydney Area Health Service
Social capital survey in five NSW communities, 1997 [46]	Self-completed paper based survey	Onyx and Bullen, 1997
Personal Health Record ('Blue Book') Survey, 1992 [47]	Face to face interview of parents of children aged 0–4 years	NSW Department of Health
Smoking among School Students in Central and South Western Sydney, 1998 [48]	Self-completed questionnaire of year 10 and 11 students	Chris Rissel, Central Sydney Area Health Service
Pnuemococcal Survey, 1998 [49]	Telephone survey of parent proxies	Peter McIntyre, New Children's Hospital, Westmead
South Australian Health Goals and Targets Health Priority Areas Survey 1998 [50]	Telephone survey of adults aged 18 years and over	South Australian Health Commission
South Australian Northern Services Planning Unit Survey 1996 [51]	Telephone survey of adults aged 18 years and over	South Australian Health Commission
South Australian SERCIS Survey On Disability Prevalence (1996) [52]	Telephone survey of adults aged 18 years and over of themselves and collected information on other household members by proxy.	South Australian Health Commission
South Australian Health Omnibus Survey (Autumn 1995) [53]	Telephone survey of adults aged 15 years and over. Some questions of children asked if respondent was a parent.	South Australian Health Commission
South Australian Health Omnibus Survey (Spring 1995) [54]	Telephone survey of adults aged 15 years and over. Some questions of children asked of proxy respondent	South Australian Health Commission
Queensland Public Health and Media Reach Survey, 1997 [55]	Telephone-based survey. Questions asked of parents about children under five years of age	Queensland Department of Health
Queensland Public Health and Media Reach Survey, 1996 [56]	Telephone-based survey. Questions asked of parents about children aged 12 years or under	Queensland Department of Health
International surveys		
National Longitudinal Survey of Children, Canada, 1993 [57]	A number of survey instruments:*Household contact* *GeneralQuestionnaire* *Parent Questionnaire* *Children's Questionnaire* All surveys completed by proxy, about selected child from household in face-to-face interview in the respondents' home	Canadian Department of Justice
USDA children's food security scale 1995–1999 [58]	Household food security survey (households with at least one child aged 0–17 years). Administered annually with the Census Bureau's Current Population Survey.	Economic research service, US Department of Agriculture (USDA)
SF36 [59]	Self-rating of health	Ware, Snow, Kosinski, Gandek. SF-36 Health Survey Manual and Interpretation Guide 1993
CHQ-PF28 [35]	Parents rating of child's health and emotional and physical wellbeing, PF50 previously conducted by self-complete questionnaire through schools	Langraf, Abetz and Ware. The Child Health Questionnaire (CHQ) User's Manual, 1996
McMaster Family Assessment Device 1993 [34]	A questionnaire about family functioning used in the WA Child Health Survey 1993.[27] The tool generates a score between 1 and 4, with 1 reflecting healthy family functioning and 4 reflecting unhealthy functioning (eg. avoiding fears, having lots of bad feelings within the family)	Epstein N B, Baldwin LM and Bishop DS The McMaster Family Assessment Device, 1983

suitable wording for telephone administration. Questions developed overseas were also modified to read in simple Australian English where possible (Table 4).

When questions were taken from adult surveys, they needed to be modified to be applicable to children or the environment that children live in (Table 5). The question also needed to be appropriate to ask of parents on behalf of children.

There was concern that some questions would require recall of more than 12 months by proxy respondent, which could result in recall bias. As a result, questions were restricted to recall in the last 12 months, which influenced

TABLE 4

EXAMPLES OF QUESTION MODIFICATION INTO AUSTRALIAN ENGLISH

Proposed questions for use in child health survey	Original question and/or source of question	Comments—use of data
What type of school does [child] currently attend? (READ OPTIONS 1–6 SINGLE RESPONSE) 1. Public school 2. Catholic school 3. Independent school 4. Special education school 5. School of the Air 6. Any other school (Specify) 7. Don't know 8. Refusal	What type of school is [child] currently in? (READ OPTIONS, SINGLE RESPONSE) 1. Public school 2. Catholic school, publicly funded 3. Private school 4. Other 5. Don't know 6. Refusal **Source:** National Longitudinal Survey of Children, Canada 1993 [57]	• Making the categories appropriate to Australian responses
The next questions are about preschool Has [child] ever attended preschool? (PROMPT: PRESCHOOL IS USUALLY ATTENDED FOR A FEW HOURS 3 TO 4 TIMES A WEEK BEFORE A CHILD STARTS FULL-TIME SCHOOL) 1. Yes 2. No → next section 3. Don't know → next section 4. Refused → next section	Did he–she attend junior kindergarten? 1. Yes 2. No 3. Don't know 4. Refused **Source:** National Longitudinal Survey of Children, Canada 1993 [57]	• Change from junior kindergarten in Canada to preschool in Australia

TABLE 5

EXAMPLES OF ADULT QUESTION MODIFICATION FOR ADMINISTRATION IN A CHILD HEALTH SURVEY

Proposed questions for use in child health survey	Original question and/or source of question	Comments—use of data
The following questions are about tobacco smoking. This includes cigarettes, cigars and pipes. Which of the following best describes your household? (MULTIPLE RESPONSE: READ OUT) 1. Myself and others in this household smoke 2. I smoke, but no one else does 3. I don't smoke, but others in the household do 4. No-one in the household smokes → SM5 5. Don't know → SM5 6. Refused→SM5	Which of the following best describes your smoking status? 1. I smoke daily 2. I smoke occasionally 3. I don't smoke now but I used to 4. I've tried it a few times but never smoked regularly 5. I've never smoked 6. Don't know **Source**: NSW Health Survey, 1997 1998[22]	• Changing from individual smoking status to household smoking environment

TABLE 6

EXAMPLES OF NEWLY DEVELOPED QUESTIONS

Proposed questions for use in child health survey	Comments—use of data
The next few questions are about food. I'm going to read you a list of different food and drinks. Please tell me how much of these foods and drinks [child] usually consumes per day or per week. How many serves of fruit does [child] usually eat in a day, including fresh, canned and dried fruit? 1 serve =1/2 piece fruit, 1/3 cup canned fruit, 1 tablespoon of dried fruit 1. ___serves per day 2. ___serves per week 3. Doesn't eat fruit 4. Don't know 5. Refused How many serves of salads or raw vegetables does [child] usually eat in a day? 1 serve=1/4 cup salad or 4 vegetable sticks 1. ___serves per day 2. ___serves per week 3. Doesn't eat salads or raw vegetables 4. Don't know 5. Refused	Questions are newly derived as there are limited questions suitable for use in children–further investigation of possible question sources is ongoing. Fruit and vegetable intake is important problem in children's nutrition as highlighted by ABS National Nutrition Survey 1995 [21] and others. Quantity of fruit and vegetables eaten will depend on serving sizes that are age specific and difficult to determine in children. Including a variety of fruits and vegetables is important. Nutrition experts considered frequency i.e.number of times fruit and vegetables are eaten in the day–week an important indicator than quantity. Vegetables are separated out to ensure all vegetable sources are included. Data will be analysed in two groups according to hours in childcare for younger children.

the type of questions asked about maternal folate intake in pregnancy and sleeping position of younger children.

Development of new questions

When no suitable questions were available, new questions needed to be developed (Table 6). In developing new questions, the indicator to be measured was defined and relevant topic experts were consulted. New questions were drafted by the survey team and fed back to the relevant experts for consideration. All new questions were considered and approved by the CHSTEG. Sixty-five questions were new as no source of current question could be identified. Some content areas were excluded at this point as suitable questions could not be identified or developed.

Application of question inclusion criteria

The question inclusion criteria were then applied to the list of proposed questions. In terms of providing the most important and useful information on the content area, questions on dental health focused on service use as very little statewide data was available on attendance at dental professionals by children. The level of physical activity of children was not included as parents or carers would be unreliable as a source of this data. Instead, it was decided to ask about physical inactivity through hours of TV watchin and playing video games, which could be more reliably reported.

Review of all questions and piloting of draft survey instrument

The NSW Health Survey Program staff checked that all questions had a single concept, simple English, clear meaning, and adequate response frames (Table 7).

Two pilots of the draft survey instrument were then carried out in the CATI facility to review questions as well as test specific methodological issues. Piloting involved asking the questionnaire of a simple random sample of the population, with 240 respondents in the first pilot and 251 in the second. This process allowed staff to assess the order and timing of questions, use of questions to select the proxy respondent and the age and sex distribution of the respondents. This process allowed revision to

TABLE 7

EXAMPLES OF QUESTION MODIFICATION TO IMPROVE CLARITY

Proposed questions for use in child health survey	Original question and/or source of question	Comments—use of data
Have you ever clearly told [child] not to smoke or forbidden [him/her] from smoking? 1. Yes 2. No 3. Don't know 4. Refused	Does your family have clear rules about smoking? 1. Yes 2. No **Source**: Smoking among school students in Central and South West Sydney Area Health Services, 1998 [48]	• Work by Rissel et al [38] in adolescent school children indicated that clear rules about smoking was related to lower smoking rates
Thinking back to before you were pregnant with [child] were you planning to become pregnant? 1. Yes–trying to become pregnant 2. Not trying to become pregnant 3. Sort of–not actively trying to avoid pregnancy 4. Not applicable–respondent not birth mother of [child] 5. Don't know 6. Refused	Before you became pregnant with your recent pregnancy, for how long were you trying to become pregnant? 1. Months___ 2. Years___ 3. Not specifically trying to become pregnant **Source**: The Western Australian Pregnancy and Infancy Survey, 1995[39]	• To prevent spina bifida folate should be taken periconceptually. Identifies number of pregnancies for denominator of proportion of women of children aged 0–12 months taking folate prior to pregnancy.
As far as you know, does [child] have normal vision in both eyes? 1. Yes 2. No 3. Don't know 4. Refused	Does [child] have normal vision in both eyes? 1. Yes → next section 2. No 3. Don't know **Source**: WA Child Health Survey 1993 [27]	• Proportion of children aged 2–12 years with normal vision

questions to ensure their acceptability and accuracy when used over the telephone.

Summary of question development

Table 8 lists each of the content areas planned to be included in the *New South Wales Child Health Survey 2001*; the number of questions to be included; the age group for which the questions would be asked; the specific elements of the content area that the questions addressed; the main source of the questions; and whether the question was sourced from another survey, modified, or developed as a new question when no source question was available.

In total, 352 questions were proposed to the CHSTEG. The final survey included 285 questions covering 34 different topic areas.

TABLE 8

SUMMARY OF QUESTION DEVELOPMENT FOR THE SURVEY INSTRUMENT, *NEW SOUTH WALES CHILD HEALTH SURVEY 2001*: QUESTION ORIGIN, TARGET AGE GROUP AND METHOD OF DEVELOPMENT

Content area (number of questions)	Age group	Specific measurement elements	Source of questions	Method of development
Health service use–early childhood health centre (5)	0–4 years	Attendance at, reason not attending	ABS Child Immunisation Questionnaire 1995 [19]; New questions	Modified from source questions and new questions developed
Health service use–GPs, services attended, emergency department (4)	0–12 years	Place doctor consulted, services attended, emergency department attended	Holroyd Child Health Survey 1995[44];WA Child Health Survey 1993[27]; New questions	Modified from source questions and new questions developed
Personal health records (3)	0–11 years	Use of personal health record	New questions	Existing surveys reviewed–ABS Immunisation and NSW Personal Health Record Survey however questions were unsutiable and new questions were developed
Folate in pregnancy (8)	0–11 months, respondent is mother	Planned pregnancy, use of folate, reason for use, knowledge re need to use folate in pregnancy	Western Australian Pregnancy and Infancy Survey, 1995 [39];Western Australian Research Study of Birth Defects Part 1 Pregnancy Questionnaire 1997–2000 [40];ANZFA Eat Well Tasmania Survey 1995–1999 [37];CSIRO, National Nutrition Survey 1993 [36]	Questions modified from existing surveys and consultation with experts
Sleeping position (1)	0–11 months	Position baby slept in from birth	Western Australian Pregnancy and Infancy Survey, 1995 [39];	Question used from source without modification
Breastfeeding (14)	0–23 months and respondent is mother or father	Ever–current breastfed, use of infant formula, cow's milk, other milks, age of introduction of solids, total time breastfed, reasons breastfed	ABS National Health Survey, 1995 [15]; Scott JA, Determinants of initiation and duration of breastfeeding [41] (PhD thesis)	Consultation with nutrition experts. Questions used from source without modification, one question modified
Nutrition (7)	2–12 years	Intake of fruit, vegetables, milk, soft drink and fruit juice	New questions	Consultation with nutrition experts and questions newly developed
Food security (8)	0–12 years	Times ran out of food, action taken if no food, prevalence of child(ren) hungry	ABS National Nutrition survey 1995 [21]; USDA Children's food security scale 1995–1999 [58], National Longitudinal Survey of children, Canada 1993 [57]	Consultation with nutrition experts; some modification from sources
Immunisation (3)	2 months–4 years	Places vaccinated, views of vaccination, influences on views	Queensland Public Health and Media Reach Survey 1996 [56]; ABS Child Immunisation, 1995 [19]	Consultation; modification from source
Asthma (14)	2–12 years	Ever asthma, symptoms, GP and hospital attendance, effect on activity and sleep, use of medication	NSW Health Survey 1997–1998 [22]	Consultation with NSW Health Asthma Expert group; modification from source
Dental (8)	1–12 years	Use of dental services, SOKS assessment, visit private dental when eligible for public dental, treatment received	National Dental Telephone Interview Survey (NDTIS), 1994 [32]; new questions	Consultation with Dental Health Branch, NSW Department of Health; modification from source, new questions
Health status (1)	0–12 years	Rating of child's health status by respondent	SF36 1993[59]	Question not changed from source

TABLE 8 ***(continued)***

SUMMARY OF QUESTION DEVELOPMENT FOR THE SURVEY INSTRUMENT, *NEW SOUTH WALES CHILD HEALTH SURVEY 2001*: QUESTION ORIGIN, TARGET AGE GROUP AND METHOD OF DEVELOPMENT

Content area (number of questions)	Age group	Specific measurement elements	Source of questions	Method of development
Child health questionaire (CHQ-PF28) (30)	5–12 years	Limit in physical activity, emotional or behavioural problems, pain or discomfort, behaviour, satisfaction with self and achievements, parent concern about child, child behaviour impact on family	Child Health Questionnaire Parent Form (CHQ-PF28) [35]	Consultation with Dr Jeanne Landgraf, developer of CHQ and others; questions not changed from source
Respondent's health (1)	All respondents	Self rating of health by respondent	SF36 1993[59]	Question not changed from source
Emotional and behavioral problems (8)	4–12 years	Presence of emotional and behavioural problems, use of services, ability to access services	WA Child Health Survey 1993 [27]; The Mental Health of Young People in Australia 1998 [30]	Consultation with Centre for Mental Health, NSW Department of Health; questions modified from sources
Infant behavioural problems (12)	0–11 months	Presence of feeding, sleeping or settling problems, use of and satisfaction with services	Baby Health Questionnaire 1989 [45]	Modified from source; new questions developed
Toddler physical health (15)	1–4 years	Problems eating, walking, physical problems, seriousness of problem, places sought help	New questions	Newly developed; loosely based on Infant behavioural questions and CHQ
Home visiting (6)	0–4 years	Experience of home visiting, acceptance	New questions	New questions developed in consultation
Parent support services (4)	1–12 years	Need for and use of parent support services, services accessed, reasons services not used	New questions	Newly developed
Social support (6)	0–12 years	Access to personal, family and social support networks	National Longitudinal Survey of Children, Canada 1993 [57]	Consultation with Centre for Mental Health to select specific question scale; not changed form source
Sun protection (9)	0–12 years	Action to prevent skin cancer, attitudes to skin cancer protection, frequency of sunburn	NSW Skin Protection Survey–'Seymour the Snowman' 1998 [42]; NSW Health Surveys, 1997 and 1998 [22]; Australian School Students Alcohol and Drugs Survey (ASSAD), 1996 [26]	Consultation with Sun protection Unit, NSW Health and NSW Cancer Council; modified from original sources
Sight (4)	2–12 years	Normal vision, blindness, use of glasses	WA Child Health Survey 1993 [27]	Minor modifications for clarity
Hearing (8)	0–12 years	Normal hearing, use of hearing aid, hearing loss, ear infections, grommets	ABS Child Immunisation Questionnaire 1995 [19], WA Child Health Survey 1993 [27], SA Health Goals and Targets Health Priority Areas Survey 1998 [50], Pneumococcal Survey 1998 [49] and new questions	Consultation, modified from source and newly developed
Speech (4)	2–12 years	Difficulty with speech, ever attended speech pathologist	WA Child Health Survey 1993 [27] and new questions	Modified from source and newly developed
Family functioning (12)	0–12 years	Understanding, support, acceptance,communication problem solving, decision making	McMaster Family Assessment Device 1983 [34] (Scale as used in WA Child Health Survey 1993 [35]) and National Longitudinal Survey of Children, Canada 1993 [57]	Consultation to select question scale. No change from original questions

TABLE 8 *(continued)*

SUMMARY OF QUESTION DEVELOPMENT FOR THE SURVEY INSTRUMENT, *NEW SOUTH WALES CHILD HEALTH SURVEY 2001*: QUESTION ORIGIN, TARGET AGE GROUP AND METHOD OF DEVELOPMENT

Content area (number of questions)	Age group	Specific measurement elements	Source of questions	Method of development
Social capital (10)	0–12 years	Participation in community, trust and safety, relation to neighbours	Social Capital Survey in five NSW communities 1997 [46], plus one new question	Consultation;modified from work of Onyx and Bullen.
Drowning (2)	0–12 years	Ever rescued from drowning, place rescued	New questions	Consultation with Injury Unit NSW Health; newly developed
Sports injury (4)	5–12 years	Sports played, sports not played because of injury	NSW Youth Sports Injury Survey, 1994–95 [43]	Consultation with Injury Unit NSW Health; modified from original
Physical inactivity (8)	5–12 years	Hours watches TV, video or plays computer games	National Longitudinal Survey of Children, Canada 1993 [57]	Consultation; modified from original
School attendance (3)	4–12 years	Year in at school, type of school	National Longitudinal Survey of Children, Canada, 1993 [57]	Modified from original and new questions developed
Preschool attendance (4)	3–6 years	Ever–current attendance at preschool, hours attends	National Longitudinal Survey of Children, Canada, 1996–97 [57]	Modified from original and new questions developed
Child care (7)	0–5 years	Ever–current use of child care	National Longitudinal Survey of Children, Canada 1993 [57]; Blacktown Health Survey 1993 [28]; WA Child Health Survey 1993 [27]; ABS Child Immunisation Questionnaire 1995 [19]	Consultation and modified from sources
Smoking ETS (4)	0–12 years	Smoking in household, number of cigarettes smoked in house, forbidden child to smoke	NSW Health Survey, 1997 [22]; Quit Evaluation Studies 1998 [38]; Smoking among school students in Central and South Western Sydney 1998 [48]	Consultation; modified from source and new question
Smoking in pregnancy	0–11 months	Smoked in pregnancy, frequency and quantity, behaviour change in relation to trimeseter	Midwives Data Collection, NSW Department of Health 1999 [24]	Modified from source
Demography (41)	0–12 years	Residents of household, parent and child place of birth–Aboriginal and Torres Strait Islander origin, language spoken at home, parent education and employment, benefits, place resident and length of time resident, housing, health insurance	NSW Health Surveys, 1997 and 1998 [22]; New questions	Modified from sources; new questions developed