Kiribati

Formative and Baseline Study for Avian Influenza/Pandemic Influenza Communication Preparedness and Response

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Kiribati Formative and Baseline Study for Avian Influenza/Pandemic Influenza Communication Preparedness and Response

.

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for

UNICEF Pacific

FINAL REPORT

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1 INTRODUCTION

The current situation in Kiribati is a mixture with some factors which will enhance and others that will impede the implementation of the behavioural interventions that are key to preparedness and response for avian influenza/pandemic influenza (AI/PI).

Knowledge of AI/PI is starting from an unsurprisingly low base but factors such as a well developed system of health centres and clinics with nurses recognised as an important/credible source of health information; a simple media structure with relatively high proportion listening to radio which is already in use to communicate health messages; significant evidence of well developed personal hygiene practices; and limited significance of local chickens (except to young boys) are all positive. In terms of social mobilisation there are also strong networks in communities used to provide information and training, with traditional structures still operating in the Outer Islands.

On the downside there are range of factors which present challenges including the existing very high incidence of flu-like illnesses making detection of bird flu potentially difficult; a high frequency of formal and informal gatherings in maneaba and other settings as a regular part of the way of life of I-Kiribati; the traditional extended family living arrangements; the practices of sending children to school when showing mild flu symptoms, and of going to work with mild flu symptoms (but probably when infectious); the lack of reporting of chicken deaths; cock fighting by younger boys; and the common experience of I-Kiribati of *"learning the hard way"* rather than taking preventative measures could make it difficult to turn awareness into action. Survey results show strong discontinuities between what people say they have done in relation to past illnesses and what they say they will do in the event of an outbreak of dangerous flu.

This qualitative and quantitative research with caregivers, students, NGOs, public servants and other stakeholders undertaken in September-October 2007 provides direction for the development of preparedness and response communications for AI/PI at both the strategic and tactical level. It points to the use of a multi-channel approach designed with specific reference to local circumstances. The latter vary from the traditions of "*mweaka*" (donations) given to the traditional leaders of the islands to the risks posed by the poaching of birds on Kiritimati (Christmas Island).

1.1 Background

UNICEF is focusing on communication and other supportive measures that inform, educate and enable families and communities to protect themselves from illness and death caused by bird flu or its consequences as part of the UN response to the threat of AI/PI. UNICEF recognises that every aspect of children's lives could be seriously threatened by a pandemic. UNICEF is putting its extensive communication expertise and its global on-the-ground presence to the service of national governments and partners to control bird flu and to prepare for a possible pandemic.

As part of this work in the Pacific, UNICEF commissioned baseline studies in Kiribati, Fiji, Vanuatu and the Solomon Islands.[1] The report covers the investigations in Kiribati

[1] It was originally intended to undertake this research in Samoa as well but this part of the project did not proceed.

undertaken by Dialogue in collaboration with the Kiribati Ministry for Health and Medical Services. Enormous thanks are due to the Chief Public Health Inspector Tianuare Taeuea who provided the researchers with invaluable assistance and advice in undertaking the research in the Gilbert Group. The valuable contributions of time and information of all the participants is also gratefully acknowledged.

1.2 Research design

The work programme for the baseline research in Kiribati was designed to achieve six objectives within the context of the local social and economic systems:

(1) describe cultural, social, political and economic factors impeding or enhancing key behavioural interventions in relation to: reporting (animal and human cases); fowl and other animal handling, marketing, farming, and disposal; personal and family hygiene; food storage, preparation, and cooking; home management and treatment-seeking behaviour in response influenza-like illnesses;

(2) identify risk groups and risk behaviours;

(3) ascertain community health information needs, credible sources of information, potential sources of negative rumours, and knowledge gaps;

(4) explore community suggestions for control and containment;

(5) determine baseline measures of key behavioural interventions; and

(6) examine advocacy, social mobilisation and communication components of the existing preparedness and response plan including quarantine procedures, disaster planning, legal authority and organizational characteristics including potential for civil society engagement.

The research was designed to assist in achievement of possible communications outcomes in the subsequent phases of this project. The outcomes seek to ensure that:

- children are informed and become channels for creating awareness among families about bird flu, safe handling of poultry and proper hygiene practices;
- family members and food handlers know the importance of, and practice, proper handling and cooking chicken and eggs;
- families involved in back yard poultry observe safe and hygienic handling practices of poultry;
- government agricultural staff understands the importance of continued vigilance of the poultry production and wild birds, and monitor households to ensure that they observe proper hygiene practices in handling and caring for the animals and report sick or dead birds promptly;
- health workers know and practice preventive measures and inform and motivate families on good hygiene practices; and
- village level mobilisers (including teachers), NGOs and village level government authorities promote key messages on Avian influenza and proper hygiene practices through their networks.

The research was also designed to cover all aspects of the intervention model that underpins the programme design:

- current behaviour;

- desired behaviour/behavioural objective;
- barriers to change;
- facilitating factors;
- motivations/key messages;
- change agents/ interpersonal channels; and
- actions and supporting media/collateral.

Fieldwork was undertaken on South Tarawa, North Tarawa. Maiana, and Kiritimati (Christmas Island) over three weeks in September-October 2007 by the two researchers, Murray Ellis and Peter Phillips. The choice of location was made to provide coverage of both urban and outer island settings.

Preliminary research identified five local factors to be taken into account in developing the research plan and associated work programme:

(1) the demography of Kiribati;

(2) the geography of Kiribati;

(3) the poultry-keeping practices;

(4) the significant environmental issues faced in South Tarawa potentially providing some experience in public information programmes in health-related issues;

(5) the prevalence of migratory birds on Kiritimati (Christmas Island).

The work programme agreed with UNICEF used an appropriate blend of quantitative, and qualitative information within an action research approach. It combined:

- unstructured observation;
- focus group discussion;
- semi-structured interviews;
- structured interviews;
- self-completion questionnaires completed under supervision of their teachers by 404 students; and
- oral interviews with 408 caregivers conducted by local interviewers most of whom had previous experience with surveys for the Statistics Department. The interviews were conducted in Kiribati to assist comprehension by the caregivers.

Preliminary results of the qualitative research were provided to the AI Task Force on South Tarawa after the two weeks of research in the Gilbert Islands.[2] Data entry, validation and analysis were undertaken with the program Epidata. Reference was made back to the original questionnaires in cases where the analysis produced counterintuitive results to double-check the accuracy of the data entry.

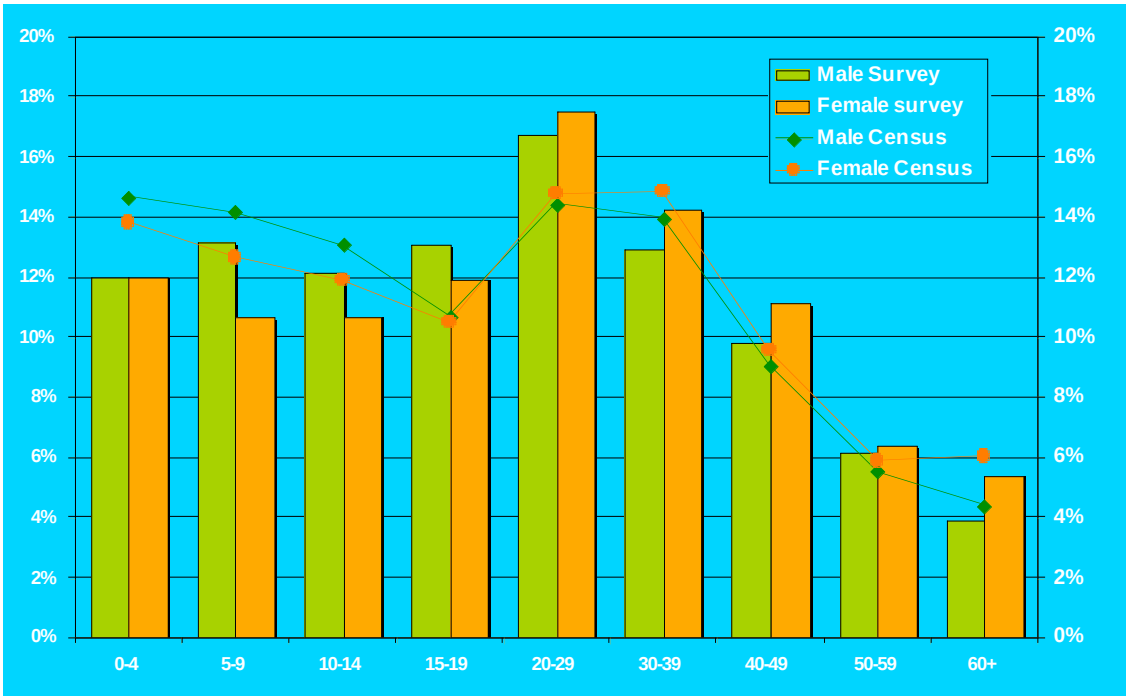
The target sample size for the two surveys of 400 in each was set to achieve an appropriate level of reliability consistent with the time and resources available for fieldwork. The best measure included in both the survey of caregivers and the Census

[2] Dialogue Consultants Ltd, (4 October 2007), *Behavioural interventions and communication strategies to address avian influenza/pandemic influenza preparedness and response in Kiribati: Preliminary Observations*, 3pp.

to assess the extent to which the survey is representative of the wider population is the age distribution of the household members.

The age distribution of the sample reported by caregivers is shown by gender as "Male survey" and "Female survey" in Figure 1. Superimposed on this graph are the results of the 2000 Census of Population. Given the time lapse between the Census and survey it is considered that the survey sample represents a good approximation of the national distribution. The main differences occur in the 0-4 years[3] and 20-29 years age groups and these differences are modest. The survey data reflects the gender balance of the national population in all but the 0-4 years cohort.

Figure 1 Age distributions of household members reported in caregivers survey and 2000 Census populations



The research design and implementation is discussed in more detail in Appendix 1.

1.3 Structure of the report

The balance of the report deals in turn with the six objectives set for the research by UNICEF. There is some overlap and cross-referencing of results where individual findings apply to more than one of the objectives. It then draws conclusions for the development of the communications programme building on those conveyed to UNICEF in mid-November 2007 for a regional meeting of the countries involved in the programme.[4]

[3] There may be a small influence of declining birth rates contributing to this difference.

[4] Dialogue Consultants Ltd, (4 October 2007), *Behavioural interventions and communication strategies to address avian influenza/pandemic influenza preparedness and response in Kiribati: Preliminary Observations*, slide presentation, 55pp.

2 CULTURAL, SOCIAL, POLITICAL AND ECONOMIC FACTORS IMPEDING/ENHANCING KEY BEHAVIOURAL INTERVENTIONS

The brief for the research sought the description of the cultural, social, political and economic factors impeding or enhancing key behavioural interventions in relation to:

- reporting (human and animal cases);
- treatment-seeking behaviour in response influenza-like illnesses;
- fowl and other animal handling, marketing, farming, and disposal;
- personal and family hygiene;
- food storage, preparation, and cooking; and;
- home management.

Each of these matters is discussed in turn although some of the specifics are addressed in later sections of the report, particularly Section 6 which discusses the behavioural interventions. It is appropriate first, however, to briefly very comment on the public health system in Kiribati which will be a key part of the promotion of awareness, information, and response to AI/PI and aspects of social organisation.

2.1 Kiribati public health system

Kiribati has a well developed system of health centres and clinics with trained staff. There is a system of village clinics and island health centres on each island with the number of clinics dependent of population and the location of the villages. Initial treatment and diagnosis is undertaken in the clinics. More complicated matters are progressively escalated - first to the island health centre and then, as required, to hospital on South Tarawa or Christmas Island, as appropriate.

There are currently 92 clinics nationally with 98 nurses. There is also a nurse aid with local training in each village clinic. To become a medical assistant the nurses need three to five years public health experience in the Outer Islands as well as passing a test on the clinical training. The Ministry of Health and Medical Services (MH&MS) also holds regular Multi-Purpose Workshops for specialist training, refresher courses, and the updating of nurses. An upgrade of some of the island facilities is underway with a new health centre on North Tarawa being built at the time of the fieldwork.

Informants in interviews and discussions regularly reported that nurses in the clinics, health centres and hospitals were an important source of health information. Given the coverage of these facilities around the islands the nurses represent an important channel for outreach to the communities for the AI/PI communications programme.

Another positive aspect in terms of the planned AI/PI communications programme is the Ministry's past experience of awareness programmes on a wide range of topics. There is an established health promotion unit on South Tarawa and the health promotion officer on Kiritimati who regularly produces his own radio broadcasts on health topics defined by head office on South Tarawa. The Ministry has undertaken a wide range of programmes in the past and staff are familiar with workshops, presentations, use of handouts, pamphlets, posters and radio. There is also some access to laptops and projectors. Lessons learned from past programmes include the value of visual aids, including DVD/video, and incentives (such as a movie) to encourage attendance at meetings.

On the downside rapid population growth on South Tarawa through natural increase and in-migration is a challenge to the health services and makes many of the practices of past no longer possible through lack of space. The latter includes the use pit latrines and isolation areas between villages. Population density is a general issue throughout South Tarawa but particularly so on Betio where there are areas of squatter dwellings which are very tightly packed together with little separation between the dwellings. Residents maintain the areas inside the compounds, but that standard of some of the public spaces leaves a lot to be desired.

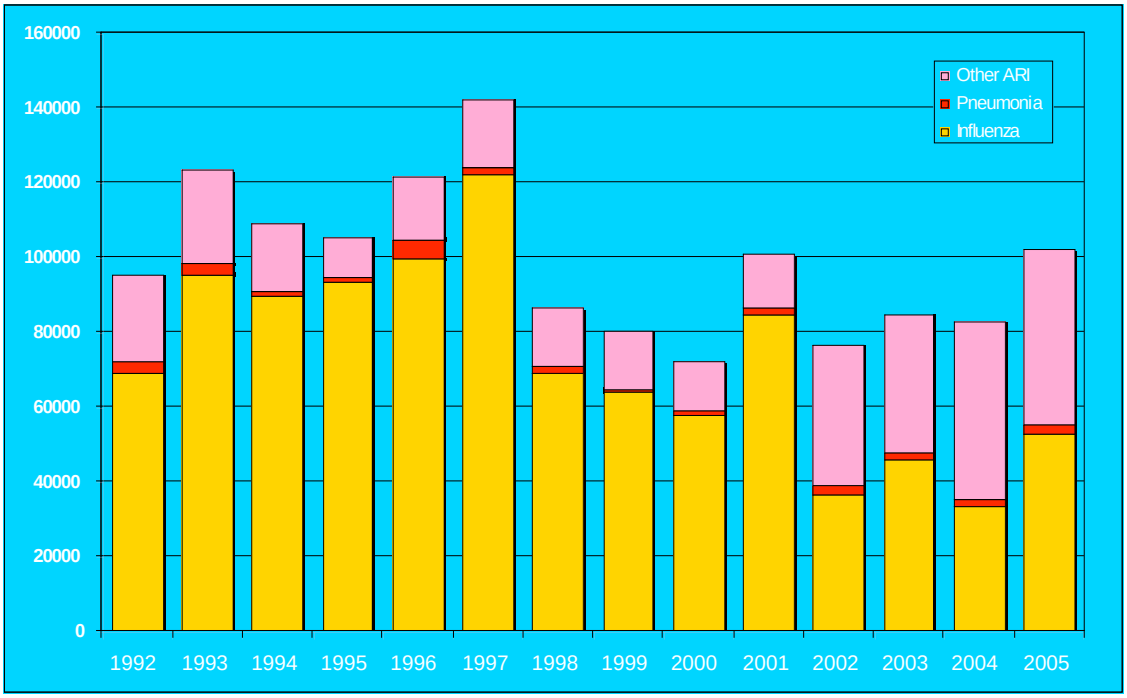
While valuable assistance is provided to the health system from Taiwan, anecdotal evidence suggests that there are issues of supplies of pharmaceuticals to the health centres and clinics. There are also some logistical issues such as sometimes unreliable CB communications from health centres on the Outer Islands to Tarawa. Citizen band radio is a cheap and effective way to communicate over relatively short distances most of the time. It can, however, be inconsistent and this, combined with the need to pass messages on between islands can make it a less than adequate mode of communications at some times. As a minimum, the health centres need a budget for phone calls as a backup when the CB communications are insufficient.

2.1.1 Existing high incidence of flu

Influenza-like illnesses are the most common condition reported in the monthly (MS1) reports from the clinics and health centres. In 2005 there were a total of 102,148 reported cases of respiratory illnesses from a national population of 92,533 (i.e. a rate of 1104/1000 population).

On both South Tarawa and Kiritimati it was reported by medical staff that flu was especially prevalent after rain and the visit of ships. There were also reports from the Medical Assistant on Maiana and a senior doctor on Kiritimati that children under five years of age were the most prone to flu turning into pneumonia. This high incidence of flu-like illnesses could make detection of bird flu potentially difficult.

Figure 2 Incidence of Flu, Pneumonia and other Respiratory Illnesses for Kiribati, 1992-2005



The situation is particularly acute on the island of Betio in South Tarawa which has 13.5% of the national population, is the main port, and has a disproportionate number of incidences of all the main complaints recorded in the monthly reports, Table 1.

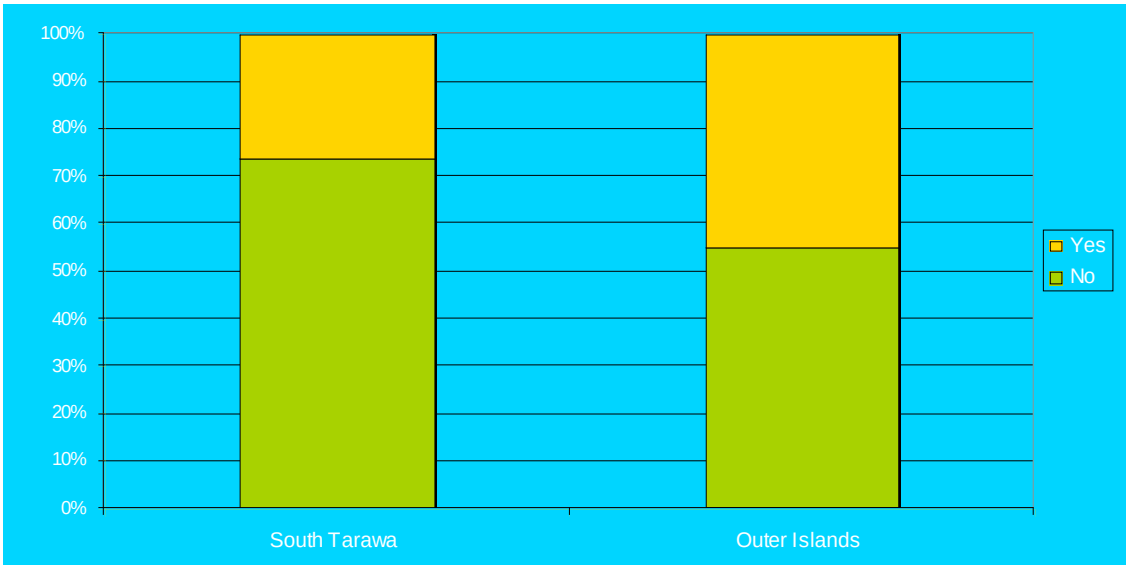
Table 1 Illness cases reported on Betio in 2005

Illness	Number of cases	% of national cases on Betio
Influenza	30742	58.2%
Pneumonia	470	19.8%
Other ARI	10176	21.7%
Diarrhoea	3808	27.2%
Dysentery A/B	3037	35.3%

2.1.2 Illness reporting in caregivers and students surveys

The national statistics were paralleled in the caregivers survey with 35% reporting that a child or someone else in the family had fallen sick with a high fever, chills, sore throat, and cough in the last month. The proportion reported falling sick was rather lower in South Tarawa (26%) than in the Outer Islands (45%), Figure 3.

Figure 3 Caregivers report of person in the family fallen sick with a high fever, chills, sore throat, and cough in the last month



A more general question posed students asking whether they had been sick in the last week. This resulted in a consistent response of about 60% in both South Tarawa and the Outer Islands, Figure 4.

Figure 4 Students' report of being sick in last week, by location

2.2 Social organisation

There are three key aspects of social organisation in Kiribati which have a bearing on the development of the AI/PI communications strategy particularly in terms of social mobilisation. These are:

(1) the extended family and traditional living arrangements;

(2) the traditional authority structure of the unimane (elders or *"old men"*) both within the family and in the wider setting of the village; and

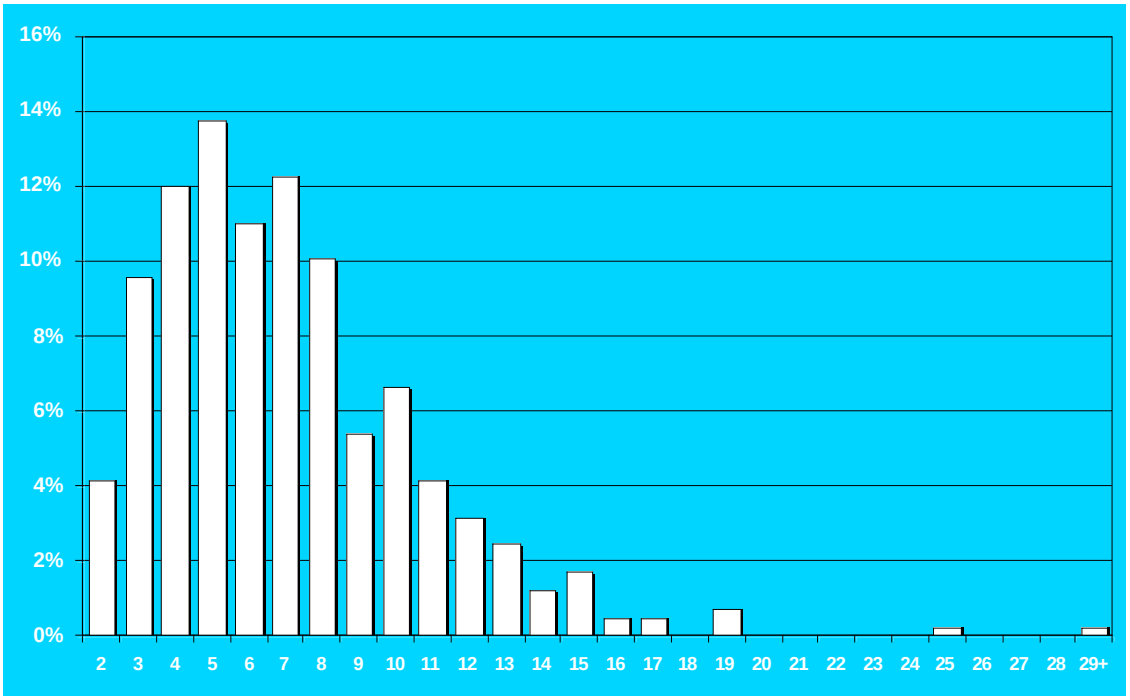
(3) the very strong networks of organisations like the churches and NGOs.

All three elements add up to a high frequency of formal and informal gatherings in maneaba (meeting house) and other settings, and a strong communal aspect to everyday life in Kiribati.

2.2.1 Households

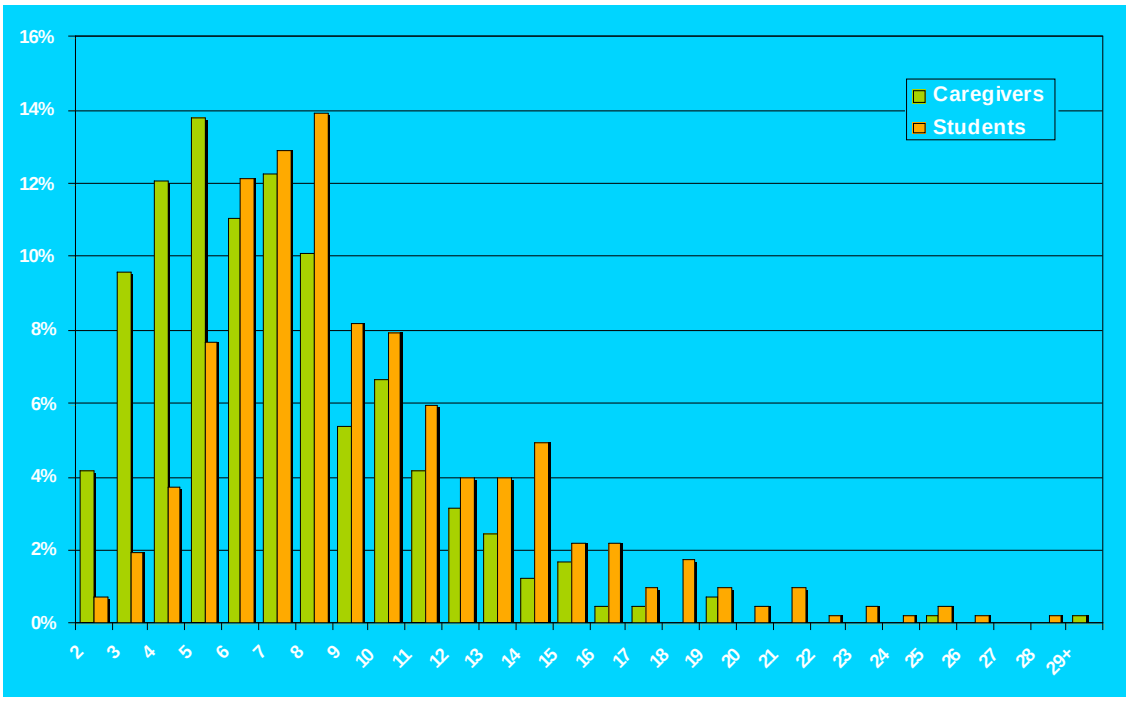
There are two elements of interest in communications terms of the Kiribati households. First there is household size. The most common household size reported in the caregivers survey was in the range three to eight persons with appreciable numbers of larger households. This resulted in a mean value of 7.1 persons per household, Figure 5. Among other things, a relatively large household size reduces the numbers of families to be reached compared with western countries.

Figure 5 Number of persons per household in caregivers survey

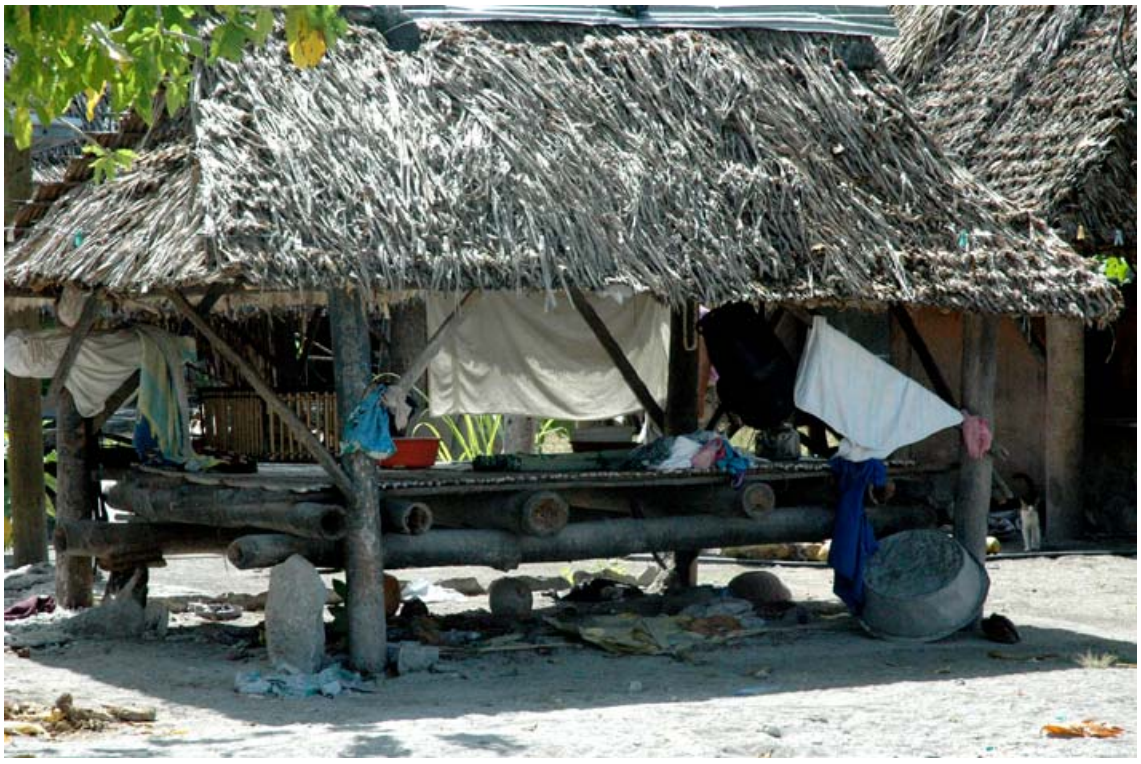


There was a systematic variation in reported household size between the caregivers and the students, with the student survey showing generally larger household sizes, Figure 6. This is considered to be a statistical effect reflecting the greater likelihood of children from larger families being included in the students survey sample.

Figure 6 Number of persons in households of caregivers and students



The second significant aspect is the traditional Kiribati communal lifestyle of families sleeping together, with many households still using the traditional sleeping platform (*kiakia* or *buiia*), and eating together.



2.2.2 Traditional authority

The *"unimane"*, typically an elderly man, is the head of the household and considered to be the most important person in the family unit. The *unimane* is in some respects the embodiment of I-Kiribati culture and is regarded as the source of wisdom in family and community matters. At the village level the *unimane* are traditionally the leaders of community affairs, in the Gilbert Islands typically through the unimane associations. These associations meet from time to time to discuss matters of interest to the village and are traditionally the final authority on community matters.

From a communications perspective, the unimane are the gatekeepers to the island and need to be respected if programmes are to be successful. There was anecdotal evidence of sometimes negative response from *unimane* and other villagers to information programmes e.g. immunisation, balanced diet and HIV/Aids. In one meeting the notion of eating greens was dismissed with *"leaves are for pigs"*. Care must be taken with the form and content of messages where they may be perceived to be in conflict with traditional belief and customs.

There are a range of formalities associated with meetings with the *unimane* in the maneaba including such matters as seating position. One of the traditions of such meetings is the *"mweaka"* (donation). This formality is shared with many other cultures (in Aotearoa-New Zealand it is called a *"koha")* and should be provided for in budgeting for the communications programme.

While the role and relations of the unimane are likely to change somewhat over time they remain a very important consideration in most locations. However, it was suggested by a number of informants that this was less the case in South Tarawa where the influx of people from other islands has resulted in a very mixed population (referred to by one informant as a *"soup"*) and the traditional village structures have largely broken down. It was suggested that the churches are a correspondingly more important part of the social fabric on South Tarawa.

2.2.3 Community organisations

A feature of life in Kiribati is the strong community networks including church groups, and women's groups, the latter facilitated in some cases by Women's Interest Workers. There are a range of community groups on each island typically belonging to a national body. On South Tarawa the national groups include KANGO (Kiribati Association of Non-governmental Organisations), and AMAK (Aia Mwaea Aine Kiribati) along with a range of religion-based groups such as Teitoiningaiana (Roman Catholic), Reitana Aine Kiribati (Protestant) and secular groups such as the Kiribati Family Health Association, the Girl Guides, and the Kiribati Early Childhood Education Association.

There is inevitably a significant measure of overlapping membership on some islands. On North Tarawa the researchers met a number of women on successive days wearing different colour outfits which denoted the group they were in that day.

These groups, with particular reference to the churches, are clearly an important communications channel. There significance is enhanced by the range of training programmes that they already run in their communities, including such matters as house-keeping and personal hygiene which have a direct bearing on AI/PI

preparedness and response. Some organisations have both outreach workers who periodically go to the Outer Islands as well as major gatherings from time-to-time when members come into South Tarawa from the Outer Islands. Such occasions represent invaluable opportunities for direct contact with people from the Outer Islands without the expense of travel for the communications programme staff.

2.2.4 Other matters

Other key aspects of life in Kiribati which have a bearing on the development of an AI/PI preparedness and response strategy include:

(1) **there is simple, effective media structure with a relatively high proportion listening to the radio, and radio already in use as a significant channel for health messages**: there are only two radio channels, one government and one private owned broadcasting on AM and FM respectively. Radio ownership was 79.1/1000 population in 2000 in the rural areas and 72.2/1000 in the urban areas indicating that radios are present in most households (given the typical large household size).[5] The Ministry of Health and Medical Services already uses the radio as a channel for (paid for) programming on health matters. Recall of topics among interviewees/discussion group participants was relatively high. Topics mentioned included Vitamin A, HIV/Aids, and the anti-smoking campaign as well as solid waste and recycling;

(2) **a high degree of movement is a regular part of daily life:** this is particularly apparent in South Tarawa where it is reflected in the number of passenger vans, buses and trucks on the (single) road but is also evident in the extent of inter-island boat travel (including between North and South Tarawa);

5 Kiribati Statistics Division, *Key Statistics: Utilities and Communications*

(3) **Kiribati has a significant input into its economy from development assistance programmes:** a small but significant consequence of this situation is that there tend to be a number of donor-driven awareness programmes without on-going resourcing. This means that once the project is completed there are no funds to continue. It also typically means that the funding priorities of the donor agencies determine programme design which may not always be sympathetic to local circumstances due to agency policies and priorities;

(4) **limited/no monitoring or follow-up of impact of information programmes:** while there have been a range of information programmes in recent years in Kiribati, there is no systematic process for assessing their effectiveness. Participants in interviews and discussion groups were able to recall the topics of some health information programmes, but there is no information to indicate that these programmes have led to changes in behaviour. During the fieldwork a contrary example was observed with the number of MH&MS staff who smoke despite the recent anti-smoking campaign which features lurid posters still on display at head office at the hospital in Bikenibeu);

(5) **common experience of "learning the hard way":** a repeated theme in interviews and discussions was that I-Kiribati typically learn from bitter experience and that motivating people to change without this can be difficult. On Kiritimati, cases were discussed of all medical advice about separation of Tuberculosis sufferers being deliberately flouted. Specific instances in a home including sharing of food utensils and sleeping spaces, and of large numbers of family members visiting the hospital ward (consistent with the customs of I-Kiribati) were cited. The reverse situation of the impact of a case of *Meningococcal Meningitis* was also discussed. This had provoked a very strong reaction and demand for prophylatics from the community.

2.3 Reporting of Illness (human and animal cases)

The monthly medical statistics reports (MS1) which provided the data used to generate Figure 2 provide up-to-date information on cases at the clinics and health centres. The survey data suggests that this is likely to capture most of the instances where people seek advice as the number going only to traditional health practitioners is probably low.

The MH&MS also has established procedures for notification of unexpectedly high incidence of illnesses. The clinics and health centres regularly monitor the ailments treated and notify the Head Office in Tarawa if there is an outbreak of a particular condition. Examples cited during the course of the research that were escalated to South Tarawa included measles and a high incidence of rashes.

In stark contrast, the reporting of chicken deaths is not an established practice nor is any systematic disease monitoring of chickens being undertaken (private farmers may report deaths during contacts with the Department of Agriculture). Such monitoring is done by SPC, and then only sporadically. There was a programme of doing it every two years, but this has stopped. Some services were provided by a VSO veterinarian, but this person left in 2002 and has not been replaced. There has been no systematic survey of chicken diseases and parasites carried out since the work of Saville in 1992 and 1994. This demonstrated the presence of a wide range of diseases in chickens in Kiribati (as discussed in Appendix 1). But there is no reason to believe that the situation has changed dramatically and therefore chicken deaths are unremarkable.

The animal health staff in the Ministry of Agriculture have had a workshop on Avian Influenza run by the SPC. As a result they know of the symptoms (such as, death is sudden), but can only suspect the disease. Definitive diagnosis requires post-mortem and sending samples to overseas laboratory as there is no adequate laboratory to undertake this work in Kiribati.

During the episode of the poisoned ducks at the fish farm in April 2006 medical staff from the hospital did the post mortem. The hospital laboratory also prepared samples for transport. Personal protective equipment for the workers handling the dead ducks was provided by United Nations as a request for this gear by animal health staff has not been met. Results from the analyses showed that the ducks had been poisoned, not infected, but these were not available for months. By that time all the ducks at the fish ponds had been killed as a precaution. There is clearly the need for a less tortuous and more reliable communications path since the delay could have had serious consequences if it had been AI/PI.

This incident also points up some serious issues related to intra-agency communications. The problem arose when agriculture staff dosed the pond, aiming to destroy the unwanted tilapia fish that had become established there. However, the dosing was not communicated to the animal health staff until after the results of the analysis led to an enquiry into the source of the highly alkaline chemicals that had poisoned the ducks.

Furthermore, the animal health personnel considered that protection of the population from AI/PI is a task for Quarantine, not themselves. In the event of a disease outbreak they did not have a set of standard operating procedures for dealing with it, but recognised that these were desirable.

2.4 Chickens in Kiribati

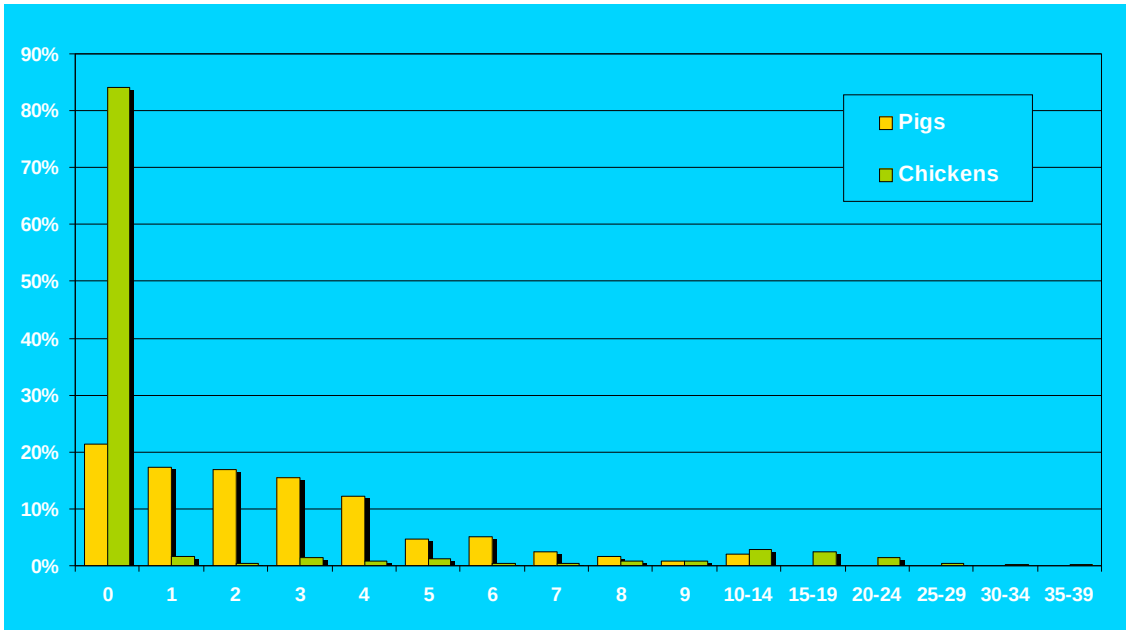
Unlike some other countries, chicken has no particular cultural or symbolic significance in Kiribati. In the "village chicken" system which is commonplace in Kiribati the chickens typically are free-range with low to zero management, and very high mortality, particularly by predation. Ajuyah notes *"In a scavenging flock of village chickens there is no age separation as a result of which the younger chickens are the most susceptible to parasites and diseases. The complete lack of effective disease control, poor nutrition and no protection from rain, wind and sun further compromise the health status of village chickens. Infectious diseases are easily transmitted within and between scavenging flocks. Some common diseases that affect the village chickens include fowl cholera, fowl pox, coryza, coccidiosis, worms, lice and mite infection."*[6] These and a range of other diseases were reported by Saville in the early 1990s (see Appendix 1).

[6] O.A. Ajuyah, (n.d.), *Rural Family Poultry Production In The South Pacific Region*, FAO Agriculture Department, Animal Production And Health Division, Infpd E-Conference, http://www.fao.org/ ag/againfo/subjects/en/infpd/documents/econf_scope/paper4.html

2.4.1 Domestic chickens

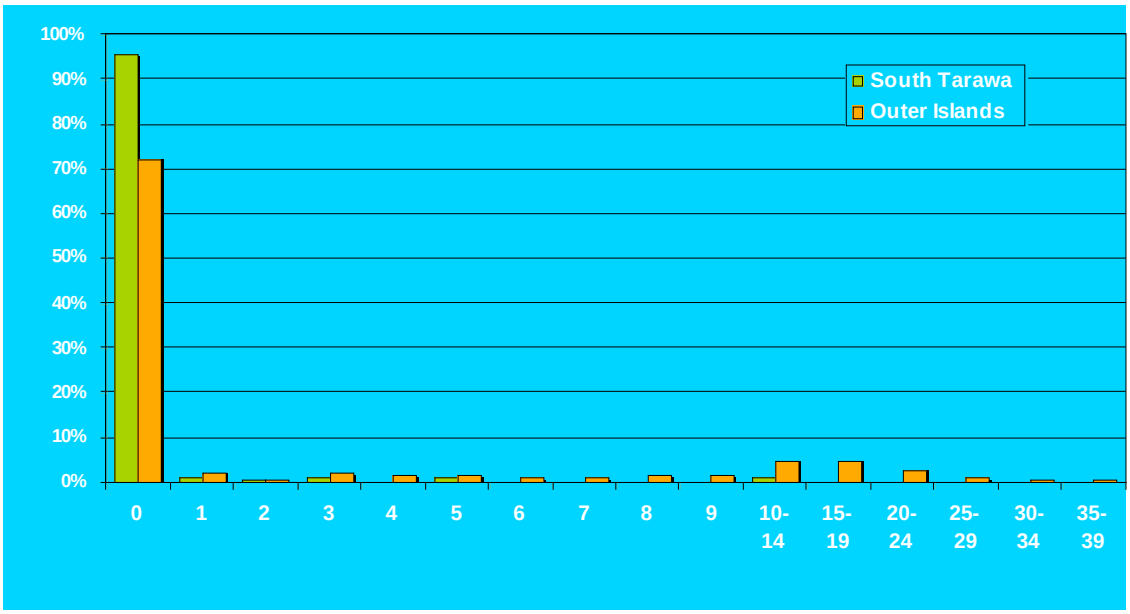
The keeping of chickens was a reported by only a minority of households (16%) in the caregivers survey. The keeping of pigs was much more prevalent, being reported by 79% of the interviewees, Figure 7.

Figure 7 Number of pigs and chickens kept by household



The caregivers survey showed marked difference in ownership between South Tarawa 96% no chickens, and Outer Islands 72%), Figure 8.

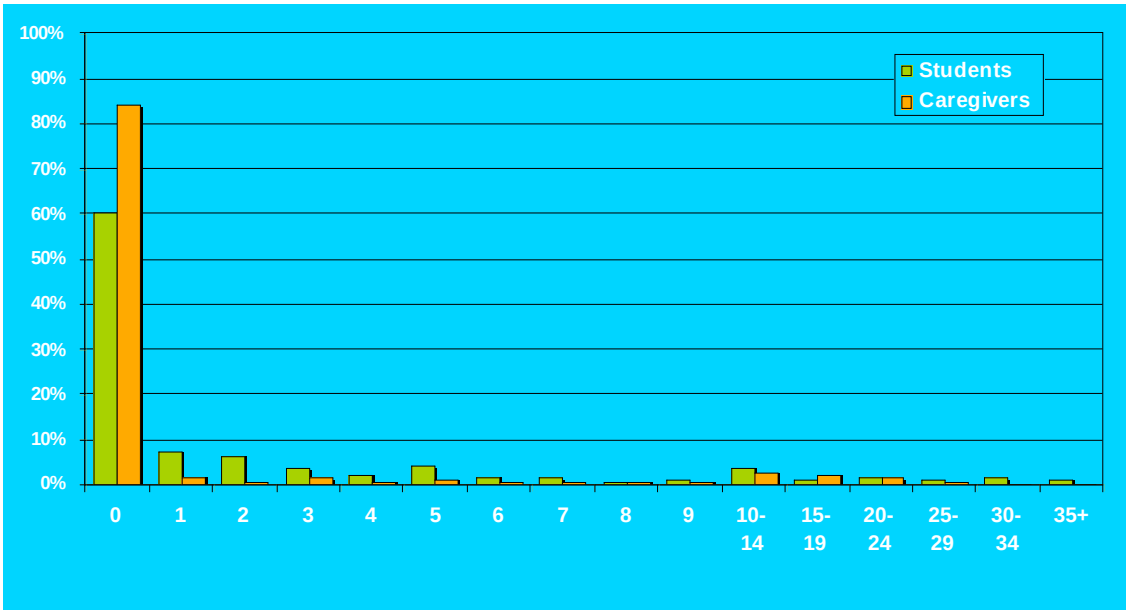
Figure 8 Number of chickens kept by household, by location



Higher rates of keeping chickens were reported in the Outer Islands across the full range of flock sizes. This is not a surprising result given the difficulties in keeping free range chickens in an urban environment which has been the norm for chicken-keeping in the past. In the caregivers survey it was reported that most of the chickens kept on South Tarawa (85%) were kept indoors during the day, while over half of those on the Outer Islands (57%) were reported to be allowed to free-range outdoors in the daytime.

There is also some variation between the caregivers and the students surveys in the proportion of houses reporting owning chickens, with 39% of students reporting that their household kept chickens compared with 16% in the caregivers survey, Figure 9. This result may be associated with the somewhat larger households also reported in the students survey).

Figure 9 Number of chickens owned in households of caregivers and students



There may also be an association with the practice by young boys of keeping chickens for cock fighting. This could inflate the numbers compared with the caregivers survey as the households in the caregivers survey may have fewer children in the relevant age group. In contrast, the students survey canvassed the junior high schools where the students were 11-14 years of age, which is reported to be on a prime group for this practice. Certainly informal head counts in classes identified a number in the classes who were prepared to acknowledged that they were engaged in cock fighting.[7]

2.4.2 Cooking chicken

Fish is the traditional core of the Kiribati diet and chicken is less important. Village chickens tend to be consumed at special occasions. This is not so much that they are a prized delicacy (as they tend to be somewhat scrawny) but rather that they are

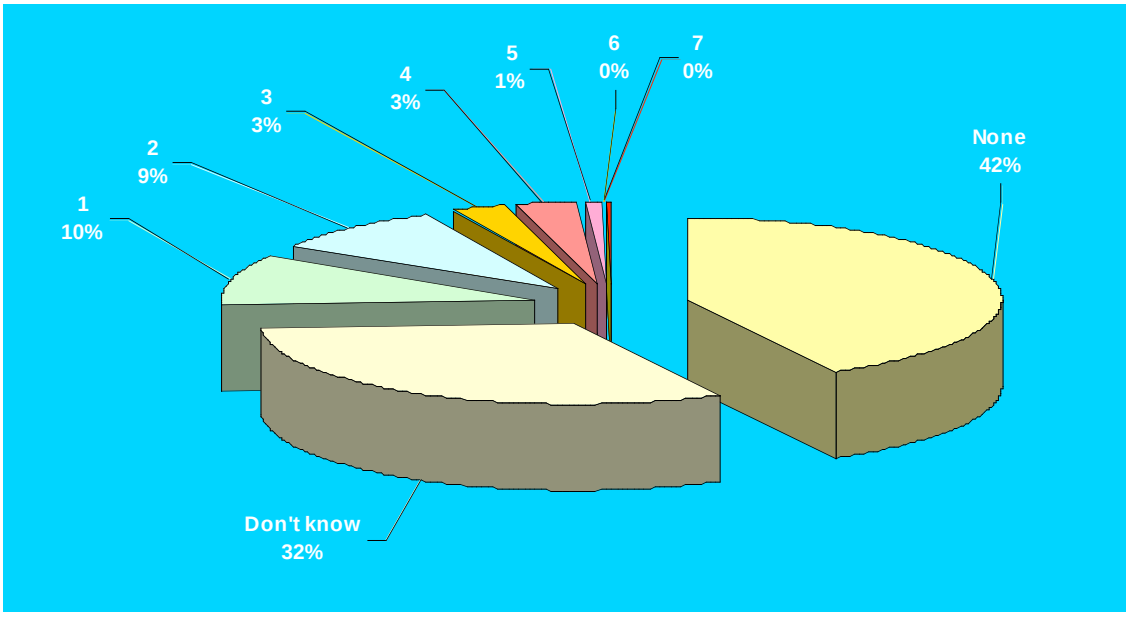
[7] No prior information was received on the practice so it was not included in the survey.

something different and, because productivity is low, not available in large numbers for regular consumption. Pigs, on the other hand, are prized (and cared for, including being restrained or penned) and the consumption of a pig is the mark of a “real” feast.

It would appear that much of the chicken that is consumed is imported frozen chickens (as seen on the truck below photographed on Kiritimati) although no current data could be obtained. Indeed, there appear to be no signs of anybody attempting to improve the status of their chickens by careful management or selective breeding as might be expected if they were highly valued.

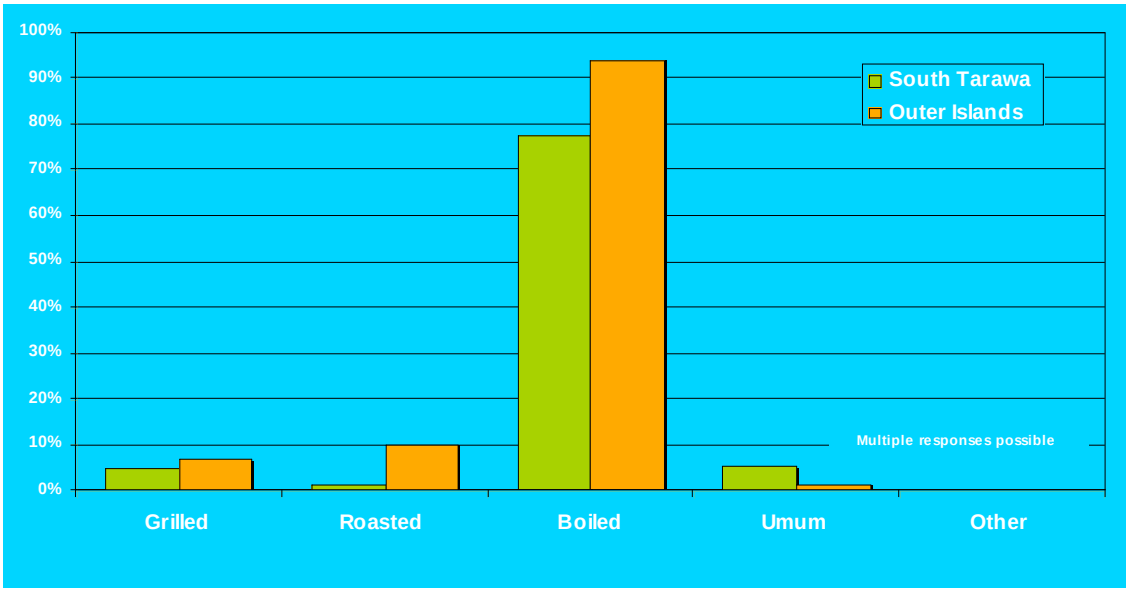
The data on frequency of cooking chickens reinforces these perceptions. Caregivers reported a relatively modest frequency of cooking chicken with 63% not having cooked chicken in the previous month and a further 15% having only cooked chicken once, together making up over three quarters of the respondents, Figure 10.

Figure 10 Number of times family cooked chicken in previous month



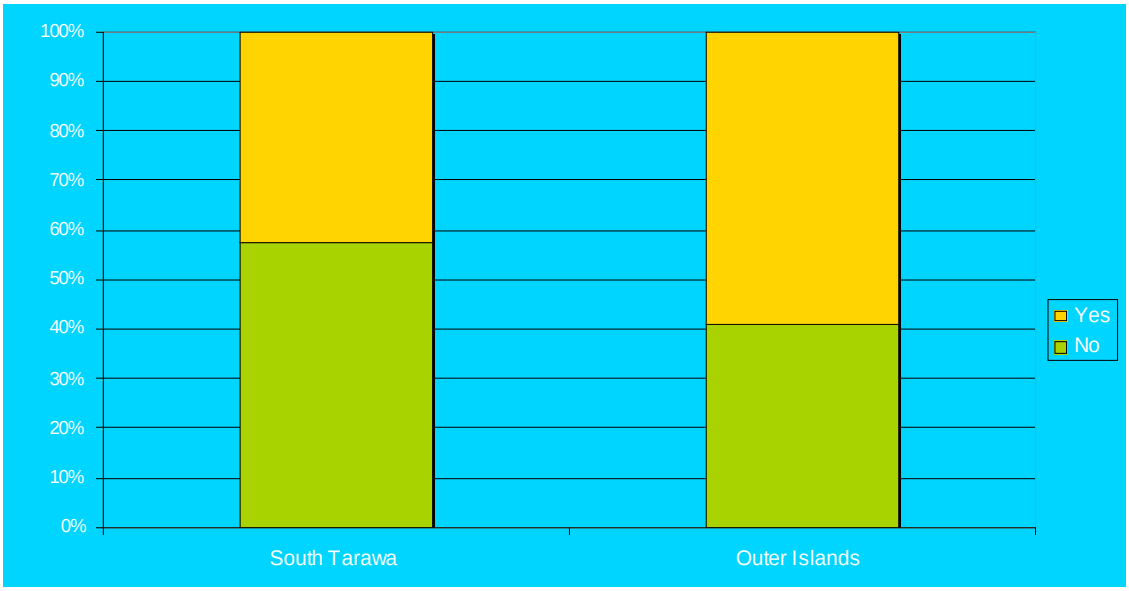
The typical manner of cooking chicken was boiling, Figure 11, and the typical duration for this was reported to be at least 15 minutes. A greater range of methods of cooking were reported in the outer islands. This is consistent with the higher frequency of keeping chickens, although cooking of imported chicken meat is included.

Figure 11 Method of cooking chicken



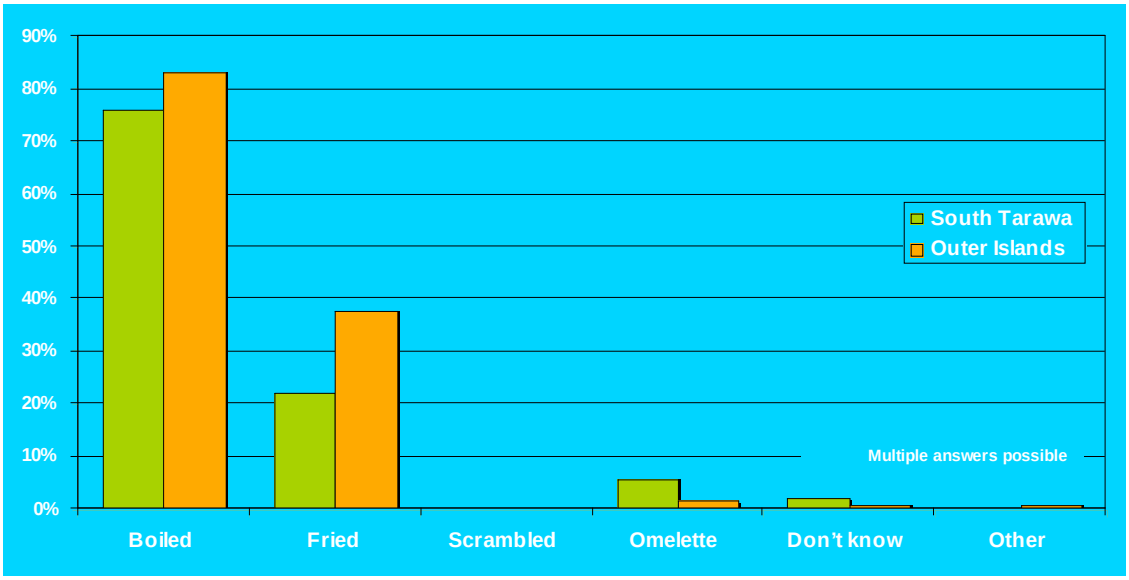
Half of the caregivers (50%) reported that they or someone in their family had cooked eggs for food in the last month. There was some variation between South Tarawa and the Outer Islands with slight lower proportions responding positively (42% vs 58%) in South Tarawa, Figure 12.

Figure 12 Eggs cooked for food by someone in the family in last month



Boiling eggs is by far and away the most common way in which they were cooked, reported by 90% of all respondents. There was a marginally higher tendency to fry eggs in the Outer Islands, Figure 13. Four fifths (80%) of the people who boiled eggs reported that they usually hard boiled them, with no significant difference in this between South Tarawa and the Outer Islands.

Figure 13 Typical methods of cooking eggs



2.4.3 Cock fighting

The most problematic aspect in relation to chickens in terms of AI/PI preparedness and response is the practice of keeping chickens for cock fighting by young boys. This inevitably involves the spilling of blood and the cooking of the losing chicken by the winners may also not be thorough. The practice was acknowledged by both caregivers and students and said by one informant to follow on from a traditional practice of fighting Kitipa, a local bird.

2.4.4 Poultry farming

On South Tarawa there is the government-owned poultry farm at Bonriki operated by the Department of Agriculture, five privately owned poultry farms at Betio, Abarao, Taborio, Temaiku, and Tabiteuea (ranging from 150-900 birds), and a farm operated by a Taiwan Technical Mission east of Bikenibeu.

No live birds are imported privately into Kiribati. The government farm imports “day-old” chicks, although they are somewhat more than a day old by the time they arrive. There is considerable mortality in transit. Occasionally some fertile eggs are also imported and hatched. The government farm sells young birds for 50 cents per week of age, at ages from one week up to ready-to-lay. The Taiwan Technical Mission also produces young laying birds for sale to the private farmers.

Interviews were undertaken at two of the private farms. One, the largest in Kiribati with approximately 900 birds, was operated as a family concern with no outside employees. The family’s children were involved in egg collection, the husband cleaned the cages and the wife appeared to do the balance of the operation.

On both farms the farmers reported washing hands with soap and water before eating, after using the toilet, and “every time” after all activities when working with poultry. They also reported an estimate of numbers of times per day that suggested that these intentions were often honoured in the breach.

On one farm there was a bowl of soapy water on a table behind the house and near the cages, suggesting that hand washing did occur, as claimed. Unfortunately the presence of dishes next to the bowl suggested that the same water was used to wash them. All respondents did the poultry work wearing older ordinary clothes and going barefoot. No-one used personal protective equipment, not even simple masks.

At both farms, but one in particular, the cages were close to the dwelling of the owner-operators. Neighbouring houses were little further away. The manager at one of the farms inquired of the researcher whether this might pose a health problem. In this situation it was clear that dust and dirt from the cages and manure was likely to blow into the living area and could carry diseases.

All birds on the private farms are raised for eggs, not meat. The sale of birds (dead or alive) is not a significant business for the farms with the secondary source of income being the sale of manure (which purchasers typically collect themselves) The farms sell or dispose of birds only when they are too old to be good layers. As the bird turnover rate is low the supply of birds from this source is small. Much of what meat is available may at times be consumed by the farmer's family (20 people in the case of one of the farms visited). None of the farms keep a separate flock for domestic use. Such sales as take place are ex-farm as there is no market system for poultry.

All birds are kept confined and stay in same place day and night. Arrangements vary from cages in the open, cages under a sheet of iron to keep the sun and rain off, to small rooms in a building. Cages are raised above the ground so dung falls out. Keeping the dogs out is as important as keeping the birds in, even so dogs find weak points and get some birds. With the birds being caged, wild birds don't have any opportunity to mix with the commercial poultry. Feed is all supplied commercially.

Sick birds are typically separated out in the hope of recovery. The dead ones may be burned or simply thrown away. One farm backed onto the coast (ocean side) so the carcasses simply went into the sea.

The people on the poultry farms did not respond any differently to the caregivers on the various questions posed about response to a major flu outbreak - some risk was perceived from going to crowded places, but they would still visit family, go to church, and send kids to school. Both farms would look to the Agriculture Department for advice if they wanted to know something, but neither had not obtained any poultry health advice in last three months. It would appear that Agriculture have the mana to provide effective information, but are not being proactive. One farm manager had heard of bird flu but knew nothing about it, the other had not.

2.5 Personal and family hygiene

Interviews, discussion groups (including three discussions of a "day in the life" with women's groups on North Tarawa, Maiana, and Kiritimati), and observation throughout the fieldwork in Kiribati revealed the prevalence of strong personal health and hygiene practices. These included the boiling of water, regular personal washing, washing of clothes (everywhere you travel there are full washing lines) and the sweeping of compounds.

Some of this would appear to be the result of the programmes run through the health clinics, through the schools and delivered by various NGOs. The effects of these programmes and training received within the households is apparent across the age spectrum. In a maneaba on North Tarawa a child of 7-8 years of age was observed singing in English, completely impromptu, *"I wash my face, I clean my teeth, I comb my hair, I go to school"*.

The potentially problematic area in terms of the proposed behavioural interventions is the notion of cleaning surfaces. In many traditional dwellings there are simply not conventional "surfaces" in kitchen areas as might be seen in richer countries. Much food preparation and dish washing is undertaken using bowls and other containers out in the open. Many dwellings have simple storage racks for items such as utensils and crockery.

Poor personal hygiene practices could be a contributing factor to the health issues experienced by people in Betio. It is considered much more likely, however, that the dominant factors are the simple density of the population; the poor sanitation as the sewerage system does not serve the burgeoning squatter settlements and people continue the practice of defecating on the beach; the accumulation of plastic and other debris on the beach; and the many wandering dogs. Defecation on the beach might have been less problematic in earlier times on South Tarawa, and even today in less dense settlements, but it is an issue now in Betio.

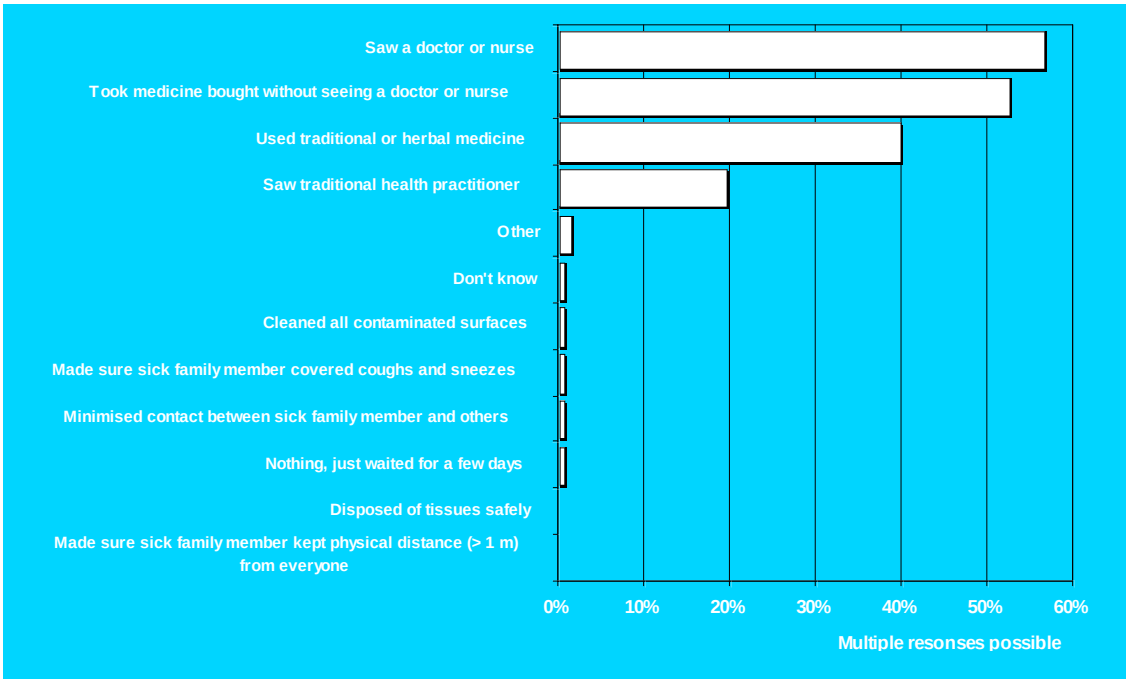
Hygiene standards varied considerably between the schools visited in the course of the research. On one island the school had no toilet and sections of beach were allocated between the sexes. Toilet paper did not appear to be used. There was no facility available for hand washing, other than the sea, and even that was practicable only at high tide. There was a well near the school, but not equipped with a dipper to lift water out. Another rural school had composting toilets, but these were reported to be in a dubious condition.

The South Tarawa schools visited did have functioning toilets and hand washing facilities. Water is typically supplied from rainwater tanks and is considered safe. No soap was provided. The teachers reported that there is a fair level of hand washing by students but that not all do it.

2.6 Treatment seeking behaviours

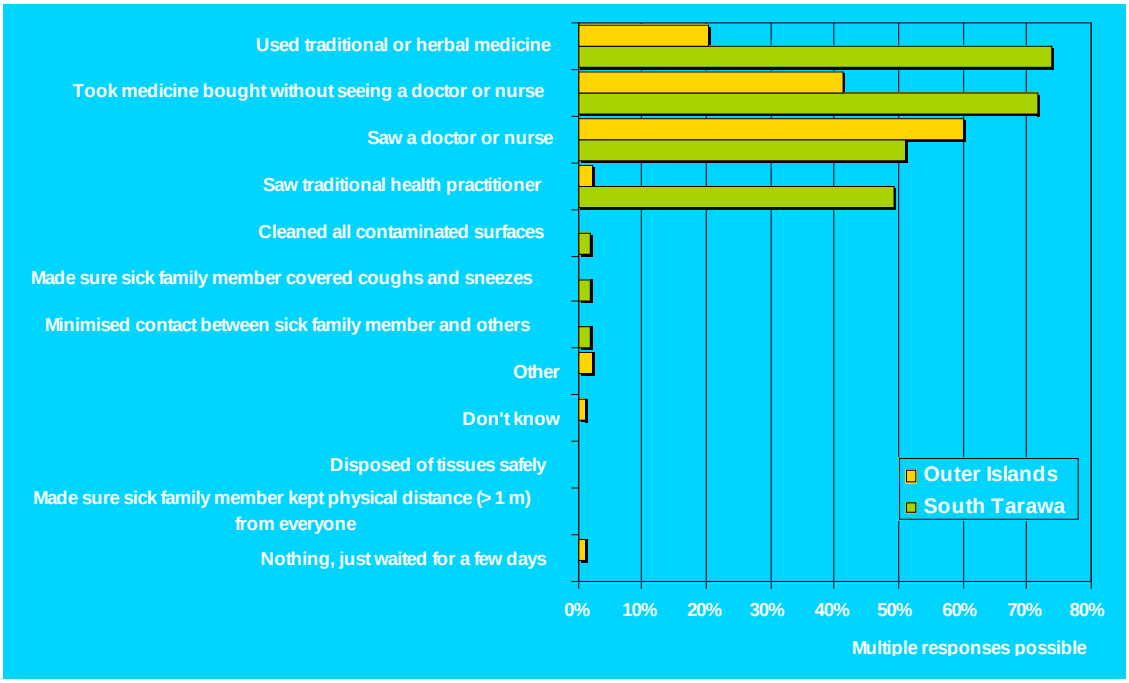
The patterns of responses in the caregivers survey when someone is sick with a flu-like illness is concentrated on four key behaviours. Seeing a doctor or nurses is the most common (57%) followed by taking medicine bought without seeing a doctor or nurse (52%) and using a traditional or herbal medicine (40%), Figure 14.

Figure 14 Caregivers' immediate actions when someone had flu-like illness (past event)



There were striking differences between South Tarawa and the Outer Islands in the reported immediate actions by caregivers, with very high rates of self-medication reported in South Tarawa compared with the Outer Islands, Figure 15.

Figure 15 Caregivers' immediate actions if someone had flu-like illness by location (past event)



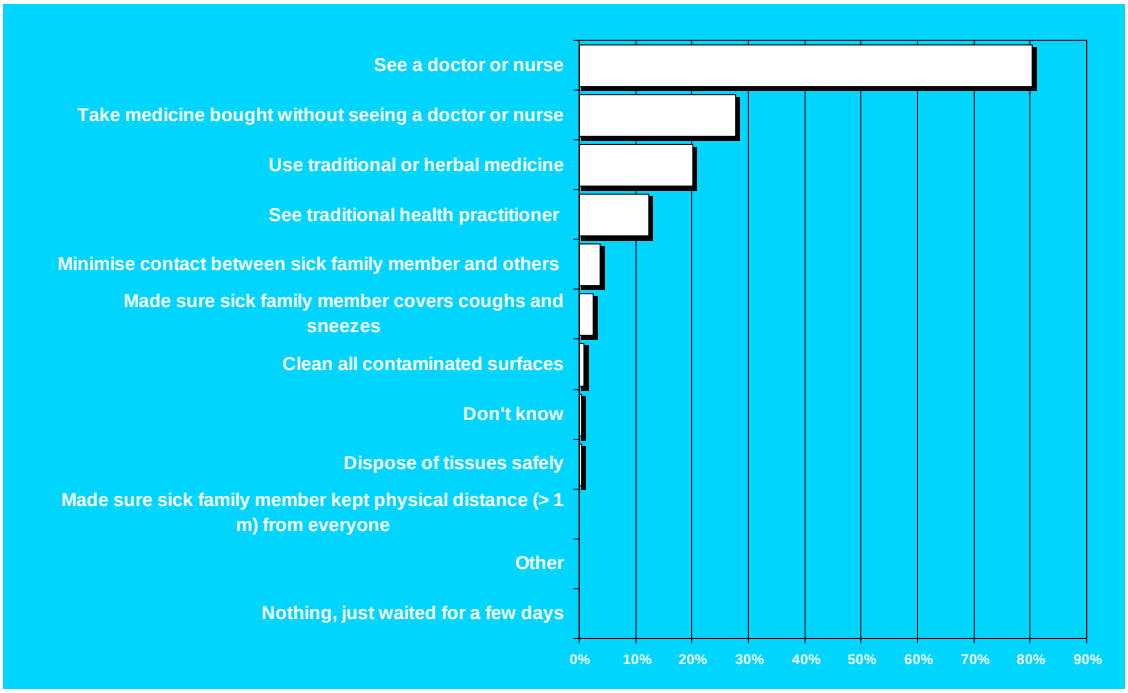
Almost three quarters (74%) reported using traditional or herbal medicine and 72% said that they took a medicine bought without seeing a doctor. This contrasts with 41% and 20% respectively on the Outer Islands. The reporting of seeing a doctor or nurse also varies, with 51% on South Tarawa compared with 60% in the Outer Islands,.

The rate of reporting seeing a traditional health practitioner was just over one third (at 20%) of that of visiting a doctor or nurse. During the qualitative research there were discussions of some people visiting a doctor or nurse up to three times before going to a traditional health practitioner (trying out the different medicines given), while others went to the traditional health practitioner first.

Closer inspection of the responses shows a potentially idiosyncratic result with most of those indicating that they had seen a traditional health practitioner concentrated in a single village (26 of 28). A later question in the survey asked what the caregivers would do if there was a dangerous flu. The responses from this village were very consistent with only two of those who reported that they had seen a traditional medical practitioner not selecting this option as something that they would do under the hypothetical situation posed. It may be that there is a particular situation in the village and that the generally low reporting of visiting a traditional health practitioner is closer to the norm.

Seeing medical professionals (doctors and nurses) were the most popular option, cited by 80%, when people were asked "*If you or one of your family falls sick with high fever, chills, sore throat, and cough, what would you do immediately?"* Self-medication, either with medicines (28%) or traditional or herbal medicine (20%) were the next most popular prospective actions followed by seeing a traditional health practitioner (12%), Figure 16.

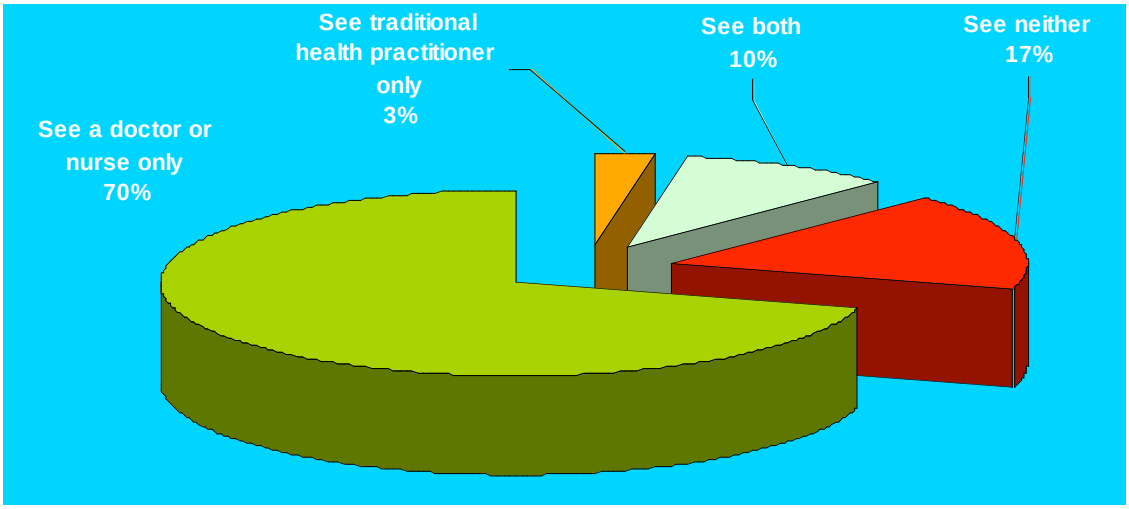
Figure 16 Caregivers' immediate actions if someone has flu-like illness (future event)



Reporting that they would undertake other behaviours such as minimising contact (4%) and covering coughs and sneezes (2%) was rather low. This mirrored the pattern of behaviours in response to a past event reported in Figure 14. Such consistency of response may be indicative of an area for improvement.

Looking more closely at the choices made between sources of medical advice, those who would go only to a doctor made up 70% of the caregivers, Figure 17.

Figure 17 Caregivers' immediate actions if someone has flu-like illness (future event): choice of source of medical advice



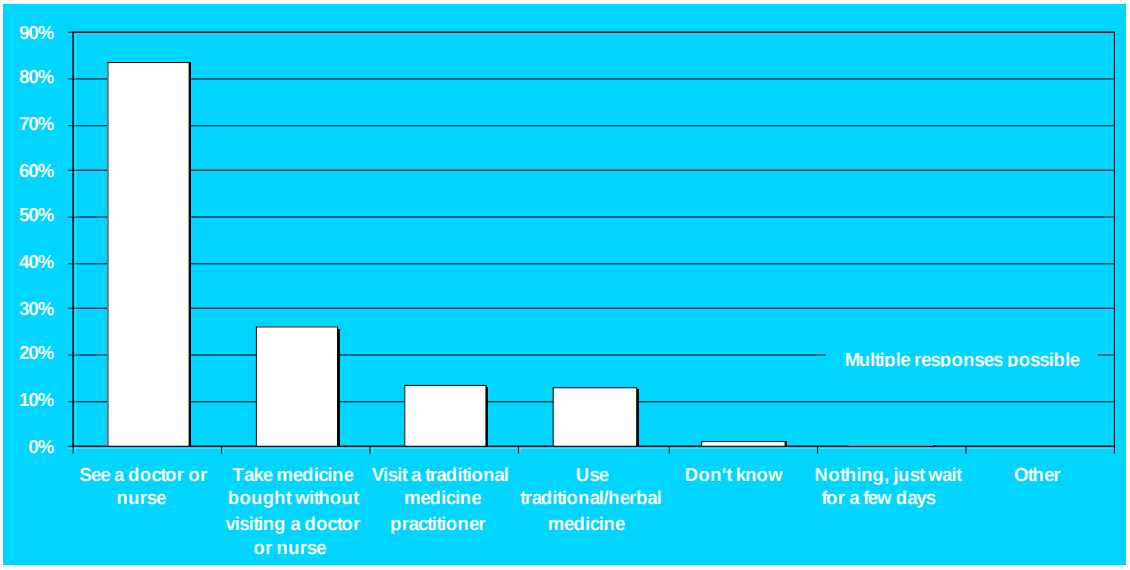
In terms of the potential spread of AI/PI, 17% responded that they would see neither a medical professional nor a traditional medical practitioner meaning there would be no opportunity for diagnosis.

The low proportion (3%) who said they would **only** visit a traditional health practitioner suggests a modest but non-negligible risk in terms of whether these persons would be able to make a correct diagnosis of AI/PI. During the qualitative research on Maiana anecdotal evidence was given by a health professional of an incident of healthy mother (engaged in competitive sport) who died after delays through dealing first with traditional birthing attendant.

That 10% would see both also creates a potential for conflicting advice. It is unclear from the research whose advice might be favoured in a situation where there is conflicting advice. It seems likely that this would depend on specific local circumstances including the response of individuals (and perhaps the wider community) to the different practitioners. Anecdotal evidence was gathered on occasions of negative responses to individual nurses – on Kiritimati it was suggested that some people don't like taking medicine from nurses and this was considered to have had an adverse effect on a tuberculosis-control programme. It would be important in such a situation that the advice of the doctor or nurse prevailed.

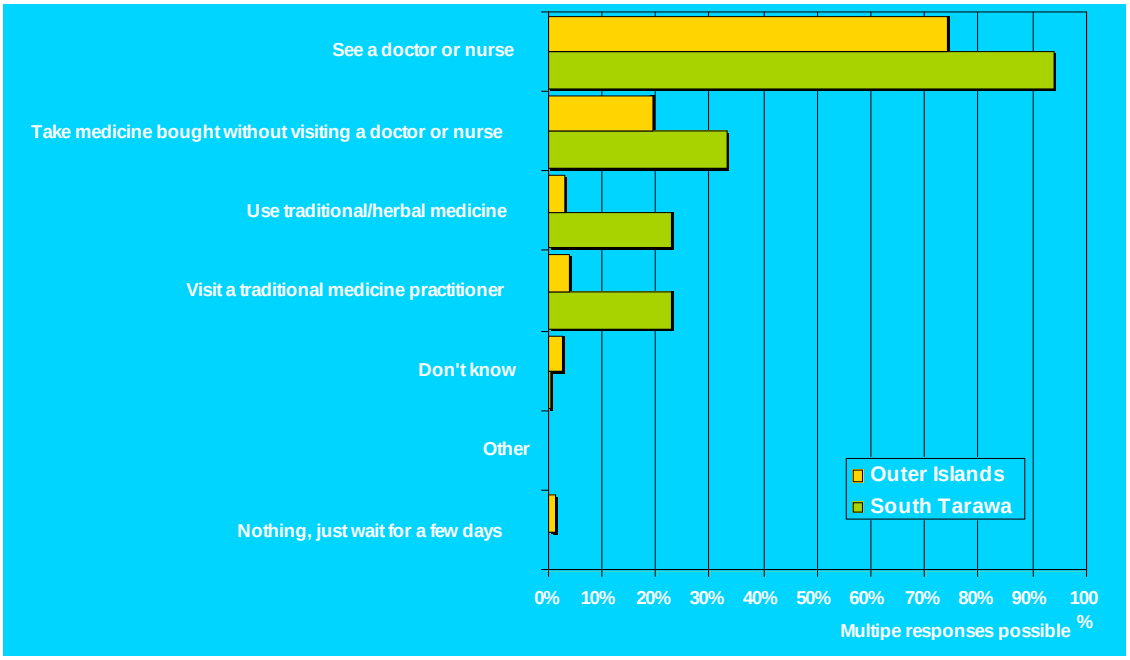
The pattern of responses among the caregivers to the question *"If you or one of your family falls sick with high fever after contact with sick or dead birds, what would you do immediately?"* repeated the pattern for flu from any source with a very high reliance on medical professionals, with 85% saying they would see a doctor or a nurse, Figure 18.

Figure 18 Caregivers' immediate actions if someone had flu-like illness after contact with sick or dead birds (future event)



The preference among the caregivers for seeing a health professional is common to both South Tarawa and the Outer Islands, Figure 19, with higher rates on South Tarawa (94% vs 74%).[8]

Figure 19 Caregivers' immediate actions if someone had flu-like illness after contact with sick or dead birds by location



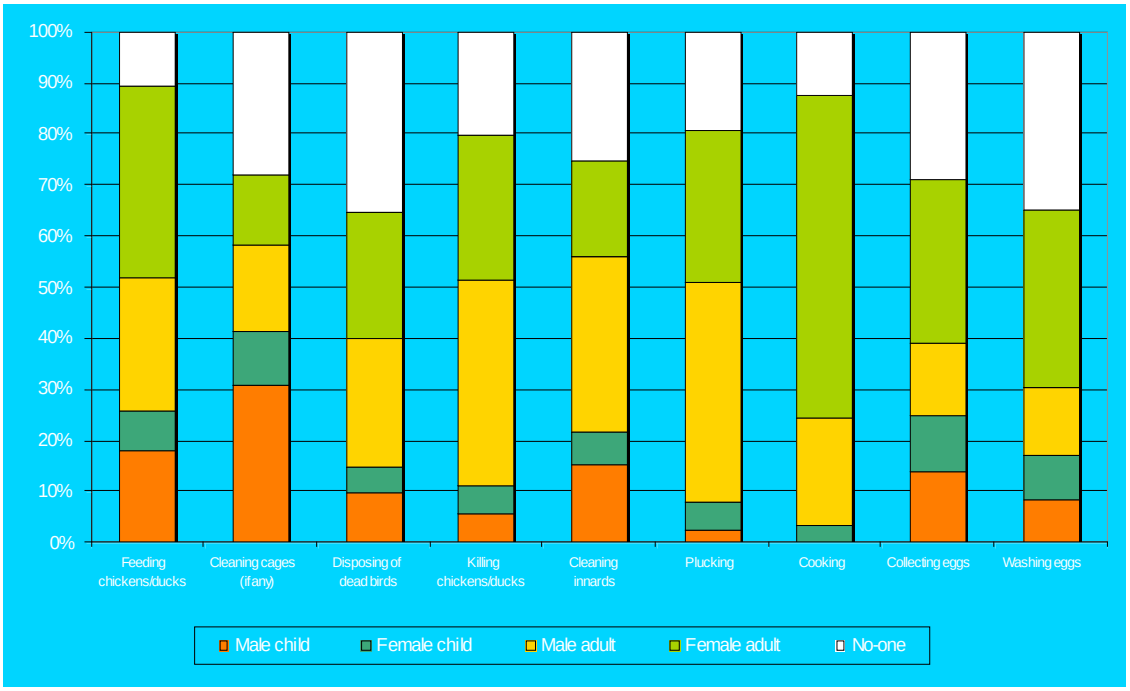
8 Analysis of the responses of the caregivers by village confirms the pattern observed earlier with high levels of reporting of an intention to use a traditional health practitioner in this hypothetical situation in the one village.

3 RISK GROUPS AND RISK BEHAVIOURS

"At risk" groups are initially those with contact with poultry who do engage in preventative behaviours given the primary bird-to-human path of transmission of AI/PI. The level of risk is likely to vary between South Tarawa and the Outer Islands given the marked differences between them in the proportion of houses with no chickens, as discussed earlier Figure 8. It should be recognised, however, that ownership of chickens is not a absolute prerequisite for contact as the "village chicken" style, where many chickens scavenge around dwellings, meaning that they can be found on properties of people without their own chickens who can still be exposed to faeces if they have bare feet.

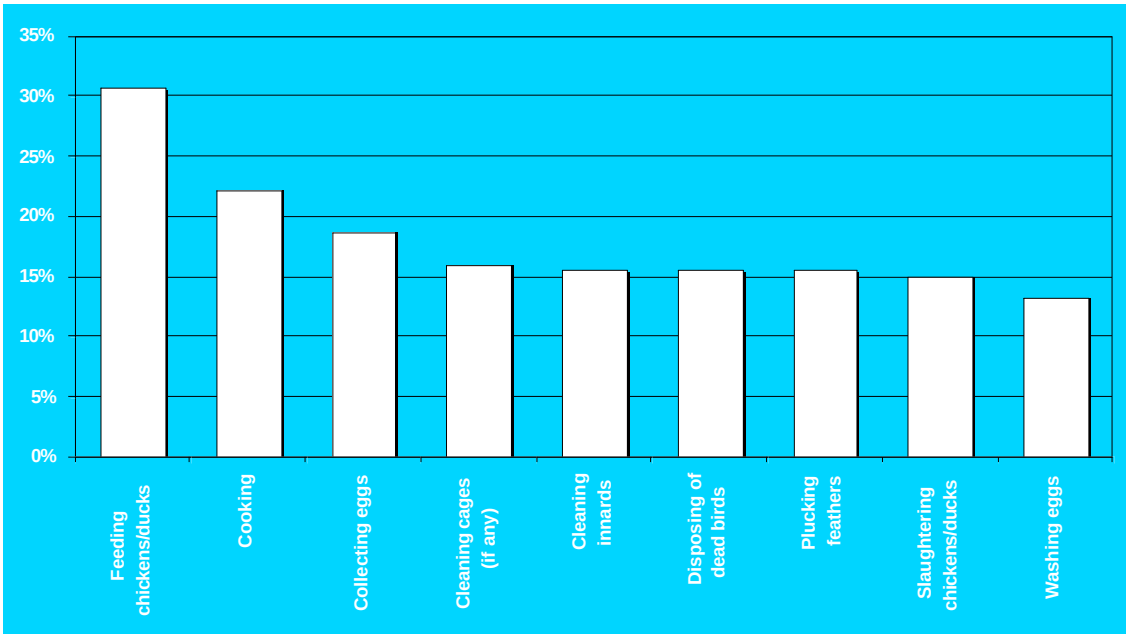
A second factor in risk exposure is the differentiation in the allocation of tasks between household members shown in the caregivers survey which could result in different risk profiles. Female adults predominated among those doing the cooking, and males more commonly undertook tasks such as killing, cleaning innards, and plucking, Figure 20.

Figure 20 Persons in household undertaking chicken-related tasks



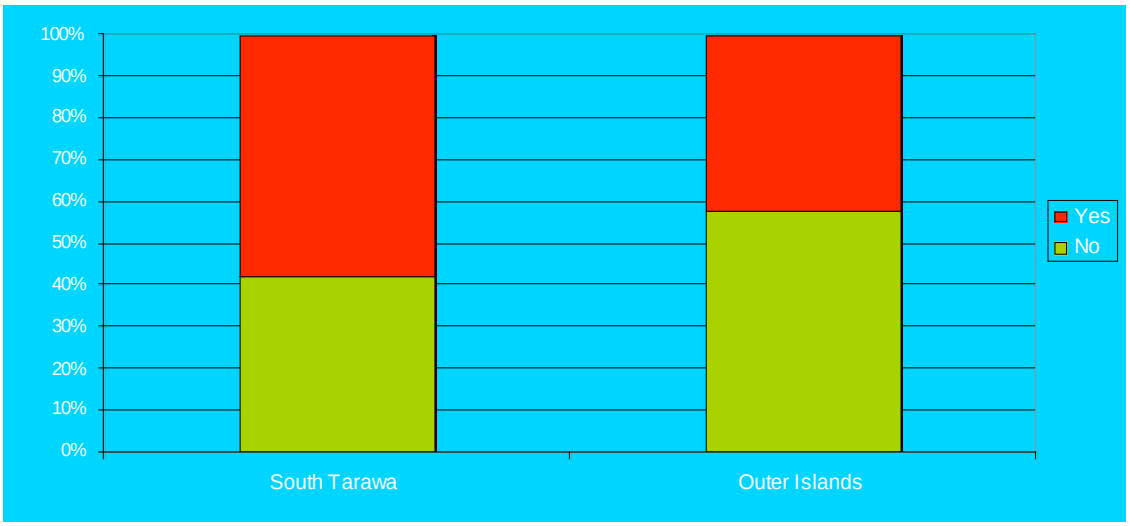
The proportion of students reporting undertaking or helping with poultry related tasks is relatively uniform across a wide range of tasks, Figure 21. The activities with above average frequency are feeding the poultry, cooking, and collecting eggs.

Figure 21 Proportion of students reporting undertaking or helping with poultry-related tasks



Over half of the students reported direct contact with chickens in the last week, with the proportion somewhat higher in South Tarawa than the Outer Islands[9], Figure 22.

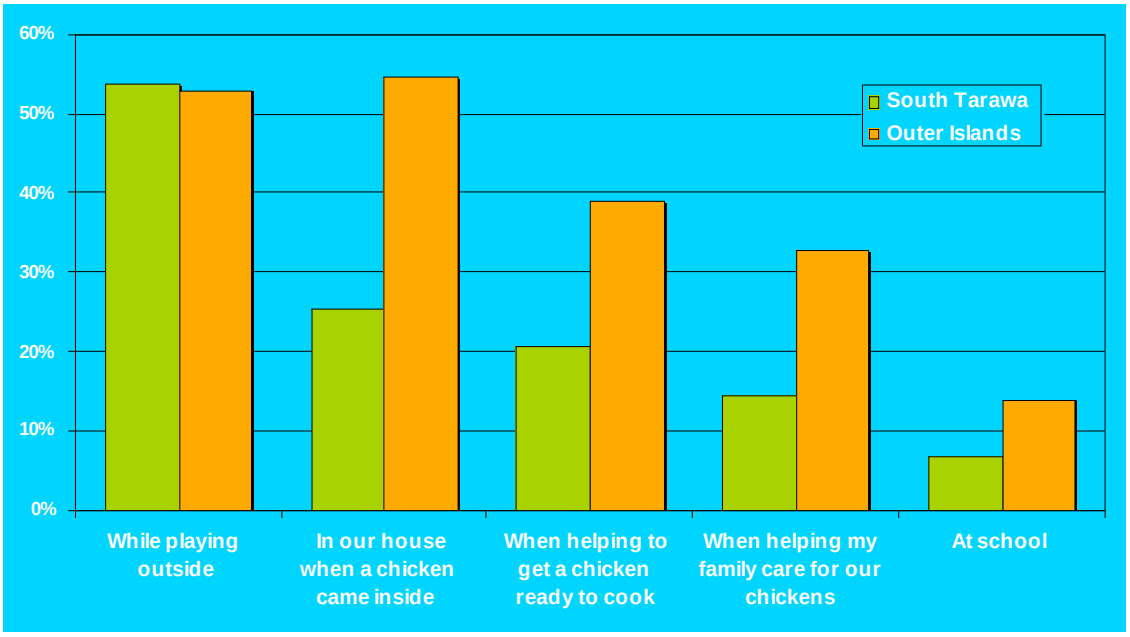
Figure 22 Students' direct contact with chickens in last week, by location



9 This a counterintuitive result given than more households in the Outer Islands keep chickens and many are kept indoors. It may be influenced by the incidence of cock fighting by young boys.

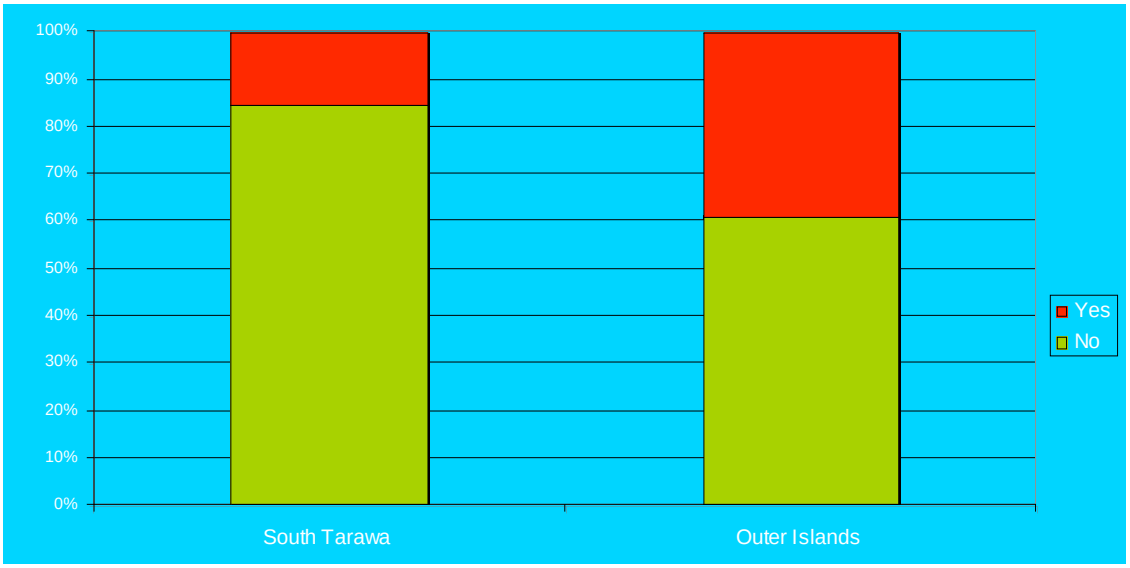
Among the students who had contact with chickens there are some differences in the point of contact between those on South Tarawa and the Outer Islands, Figure 23. The higher rate of chickens inside the home in the Outer Islands is consistent with results from the caregivers survey reported in Figure 24. Higher rates in the Outer Islands of readying chicken to cook and helping family care for chickens, Figure 23, are both consistent with higher rates of chicken ownership in the Outer Islands, Figure 8.

Figure 23 When students in contact with chickens, by location



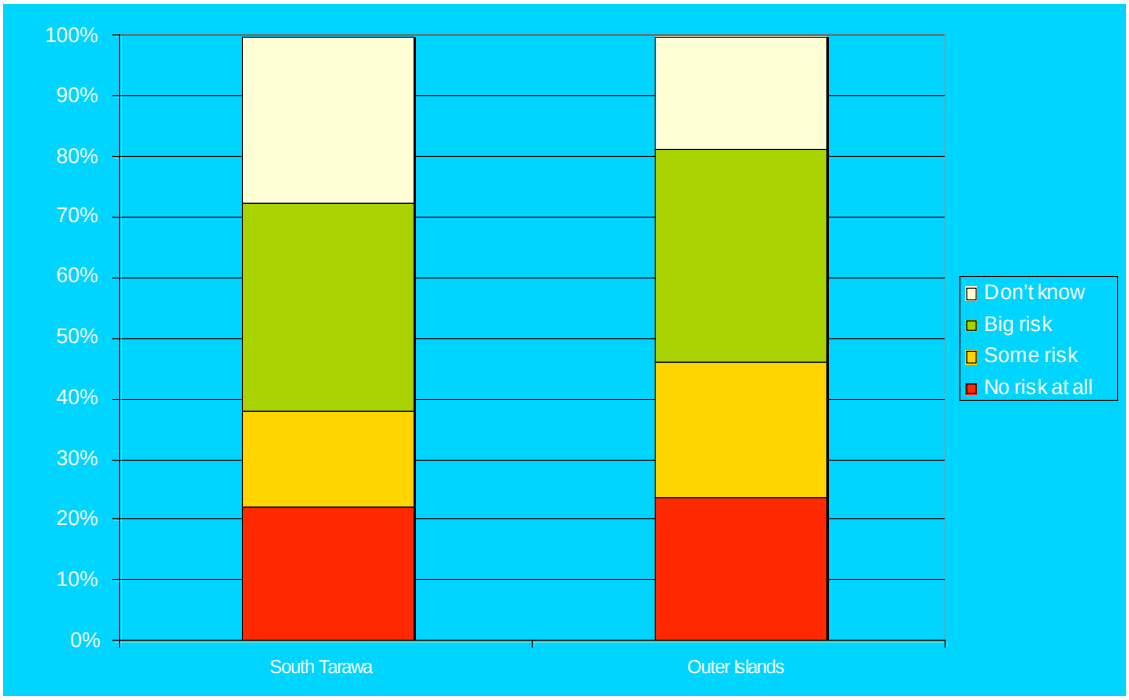
Consistent with the lower frequency of keeping chickens on South Tarawa, interviewees in the caregivers survey there reported much lower frequency of chickens in their living areas than the Outer Islands, Figure 24.

Figure 24 Chickens entering living area, caregiver survey



Notwithstanding the differences in experience with chickens in the living area, the assessment of the risk this poses to health was perceived in the caregivers survey to be very similar in South Tarawa and the Outer Islands, Figure 25. It is of some concern that 22% in South Tarawa and 24% in the Outer Islands assessed this as *"no risk at all"*. The levels of *"don't know"* may also pose an issue to be addressed.

Figure 25 Risk to health posed by chickens in living area

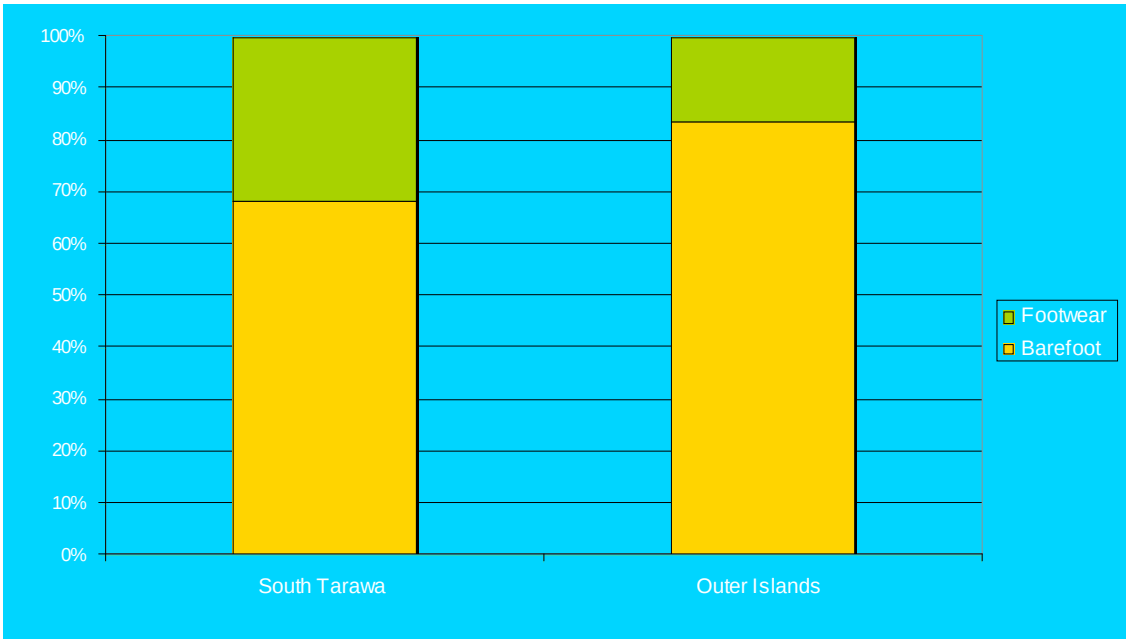


There was no difference in the caregivers survey between South Tarawa and the Outer Islands in the use of footwear when looking after chickens, Figure 26.

Figure 26 Caregiver's footwear when looking after chickens

The overall rate of going barefoot when looking after chickens was almost identical in the students survey at 76%, compared with 78% for the caregivers. The was, however, some variation between South Tarawa and the Outer Islands with marginally higher rates of going barefoot reported in the Outer Islands, Figure 27.

Figure 27 Student's footwear when looking after chickens

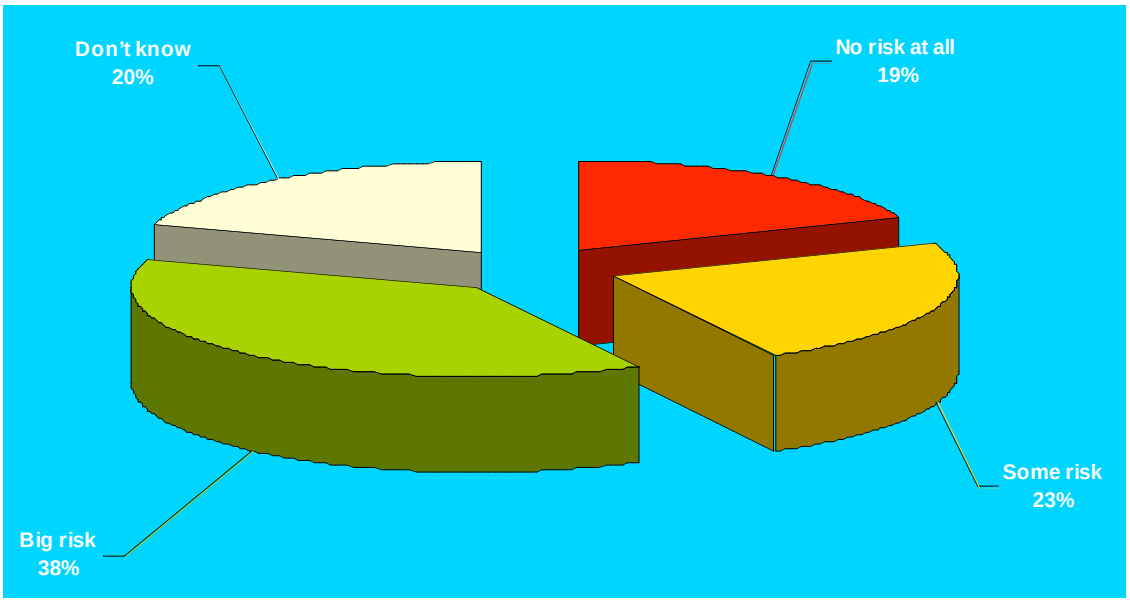


During the qualitative research on Tarawa and Maiana there were reports that people had received partially cooked chicken which had been barbecued, which can occur when chicken is cooked at gatherings. There is a practice in Tarawa of preparing what is called "half-cooked" fish. It was of some considerable concern when in a discussion with "Nei Baneawa", the island's women's group on Kiritimati, one of the obviously formally well-educated members recounted in English that she "half-cooked" chicken. On questioning she indicated that this was deliberate and that the chicken was consumed while some of the meat was still pink.[10]

When asked the level of risk associated with eating chicken that was still pink it is of some concern that while just over one third of caregivers survey (38%) considered it a "Big risk", almost one in five (19%) thought there was "no risk at all", and one in five said they did not know (20%), Figure 28. This is clearly an issue that relates to general health issues and the potential for transmission of Salmonella, not just bird flu, but should be addressed in the communications programme nonetheless.

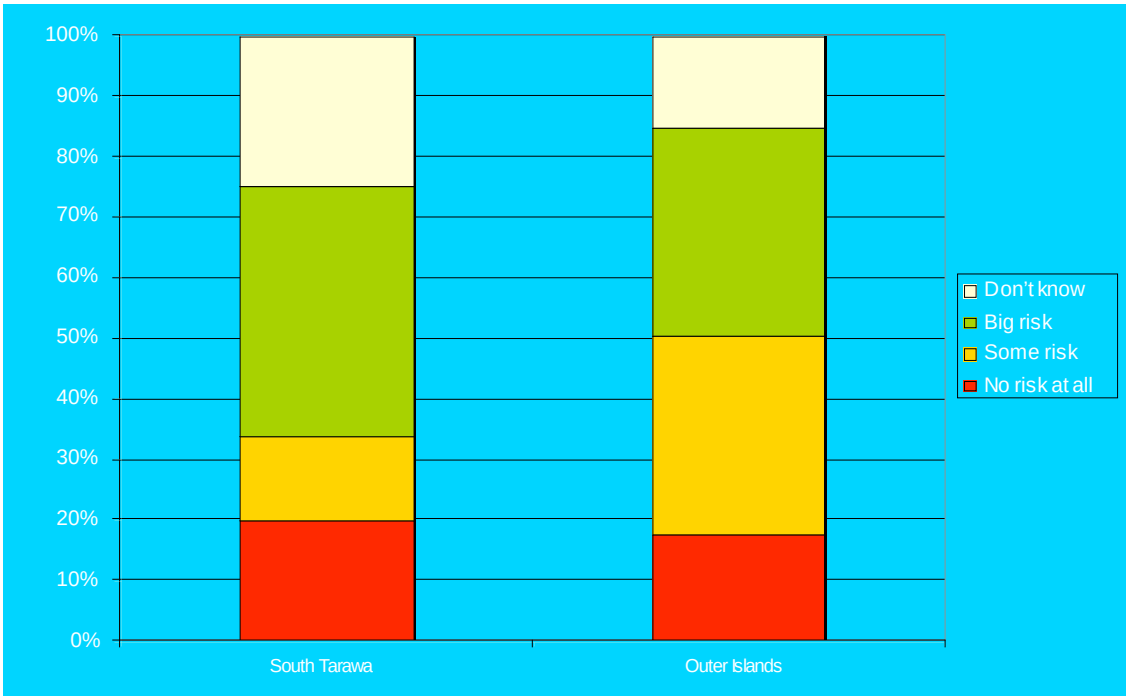
[10] This may well have been an isolated instance as none of the other women in the group indicated that they did the same. Discussions elsewhere identified the potential risk of Salmonella associated with inadequate cooking of chicken. The risks associated with this practice were explained to the group on Kiritimati after the discussion of the other topics for the meeting was completed.

Figure 28 Risk posed by eating cooked chicken that is still pink



The assessment of risk posed to health by eating cooked chicken which was still pink among caregivers survey varied only marginally between South Tarawa and the Outer Islands. The main differences were that interviewees in the Outer Islands were twice as likely to consider that it posed "some risk" (33% vs 14%), while more people in South Tarawa answered with a "don't know" (25% vs 15%). This may be related to differences in the frequency of cooking chicken.

Figure 29 Caregivers' assessment of risk posed by eating cooked chicken that is still pink by location



3.1 Migratory birds on Kiritimati

Kiritimati is home to eighteen breeding species of seabirds, with the island holding the largest global populations for some species including the Phoenix Petrel and Polynesian Storm-petrel.

Discussions with conservation department staff identified that poaching of Red-tailed Tropicbirds, Red-footed Boobies, Great Frigatebirds, Phoenix Petrel and Wedge-tailed Shearwater has been observed, with other target species including Black Noddies, and the eggs of Sooty Terns and Brown Noddy.

Migratory species and vagrants passing through Kiritimati include White-tailed Tropic birds, Pacific Reef Herons, Bristle-thighed Curlew, Brown Noddy, Wandering Tattler, Ruddy Turnstones, Pacific Golden Plover and Shearwaters.

The poaching of birds from the reserves on Kiritimati is of concern in itself in terms of wildlife values and the protection of some seriously endangered species. While the species migrating through Kiritimati are typically not those implicated in the spread of the virus H5N1, poaching opens up a completely uncontrolled route for transmission into Kiribati, no matter how modest the current probabilities might be.

Frigatebird over Cook Island

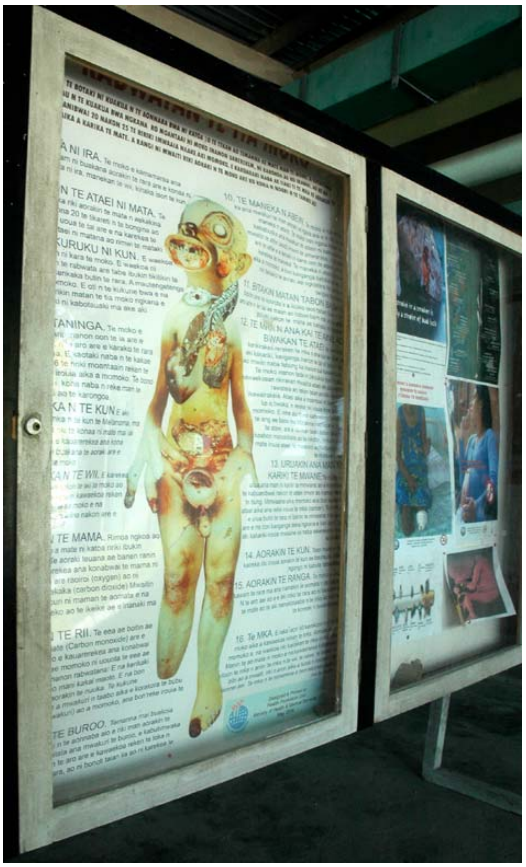
Bristle-thighed Curlew (photographed on North Tarawa)

4 COMMUNITY HEALTH INFORMATION NEEDS, CREDIBLE SOURCES OF INFORMATION, POTENTIAL SOURCES OF NEGATIVE RUMOURS, AND KNOWLEDGE GAPS

There are a range of formal and informal channels through which people may receive information about health matters. These will have varying degrees of credibility and, in terms of accurate information about the potential threat of AI/PI, suffer from varying degrees of reliability.

In the past the Ministry of Health had village welfare groups which focused on primary health care. These were first established in 1982 and continue on some islands. The Ministry currently has direct channels for outreach into the villages through the medical assistants, nurses, and nurse aids. At least one of the professional staff interviewed felt that there were sometimes issues between the balance of preventative work and care that they were required to undertake.

The Health Promotion Unit on South Tarawa headed by Mr Kireata Ruteru, has undertaken a range of programmes including Tuberculosis, HIV-Aids, immunisation and diarrhoea. A range of channels are used including radio, television, meetings in the maneaba and schools programmes. It was suggested by the health promotion officer, however, that people tend to change their ways only when affected, and that announcements need something to create relevance.



As a result of this interpretation, the Ministry has adopted the use of strong visual messages in the anti-smoking campaign although such "shock tactics" have not been demonstrated by any research to have any effect in Kiribati. There are questions from international experience in terms of the value of shock tactics in social marketing beyond raising controversy and gaining some attention, and it is clear that they can sometimes do the reverse to what is intended, alienating the audience.[11]

[11] A consistent theme of the published research is that fear appeals only reinforce pre-existing health behaviours if the threat is present; there is a perceived susceptibility to the threat; and recommendations to avoid the threat are efficacious. However, fear appeals that are designed to change behaviours in 'unconverted' populations result in a process of motivated reasoning that discounts the source information, message information and message relevance, making them ineffective and potentially dangerous. Keller, P. A. (1999), Converting the unconverted: The effect of inclination and opportunity to discount health related fear appeals. *Journal of Applied Psychology*, 84, 403–415.

On Kiritimati the health promotion officer Mr Aboro Eneri has run various campaigns on the radio including Phylariasis, Tuberculosis and held a workshop on non-smoking. At the time of the fieldwork Mr Eneri was planning workshop with the teachers at the Tennessee High School on the dangers of passive smoking but faced difficulties in that most of the teachers were smokers and parents sold cigarettes to the students! Stopping these sales and teachers stopping smoking would be major successes for the programme. Mr Eneri had also undertaken personal health promotion including hand washing (promoting before eating and after using the toilet) and promotion of covering mouth when coughing in a tuberculosis programme.

Mr Eneri indicated that when he undertook a new programme he generally had to research and design the delivery himself with no training or instruction. As part of this he would develop presentations, FAQs, and other collateral. He perceived the need for further research to ensure appropriate coverage (but practical experience of the researchers showed that Internet access from Kiritimati was painfully slow).

Mr Eneri recognised the issue of the gap between awareness and behaviour. One of his strategies was to work through the church leaders to promote behavioural change.

Discussions with the senior hospital staff on Kiritimati confirmed the role of radio broadcasts in health information on the island. It was also indicated that people also came to the medical staff at the hospital for information, went to teacher, ministers and traditional;/ local healers. There were also issues with *"folklore medicine"* in the family which tended to be used first.

Senior medical staff on Kiritimati also highlighted problems in getting people to respond appropriately even with clear information. The example was cited of an old man with tuberculosis sharing utensils with other members in the family, and his family members who *"invaded"* the ward eliminating the possibility of isolation. It was suggested that *"people need to see someone die"* before they respond – another instance of suggestions that *"learning the hard way"* is characteristic of Kiribati.

The teachers on South Tarawa reported that they had no resources to assist in teaching health education, except that one school had some related to smoking. Indeed they did not do much of in the way of health education, which is of concern given the nature of some of the issues faced. For example, some children come to school without experience in using flush toilets. They still expect to wipe themselves with a stone, and do not understand the need to push buttons. In most cases health education was left to visiting staff from the Health Promotion Unit, who brought their own materials and ran sessions with the classes.

Animal health staff undertake some teaching regarding the handling of animals and disease problems. In terms of chickens, the primary focus is on hygiene when slaughtering, cooking and storage and the primary concern is for Salmonella.

Overall there situation is complex with a range of sources of information. As seen earlier in terms of treatment-seeking behaviour, the public health service staff have a critical role in health care and information and largely have the required credibility. There are, however, potential competing sources including traditional health practitioners, and some questions about some information tactics. Specific information about flu is discussed in section 6.3.

5 COMMUNITY SUGGESTIONS FOR CONTROL AND CONTAINMENT

There are two dimensions to community suggestions for control and containment relating to:

(1) volunteered suggestions based on a generalised prompt *"How could you protect yourself/your children from a dangerous flu passed on from poultry"* and

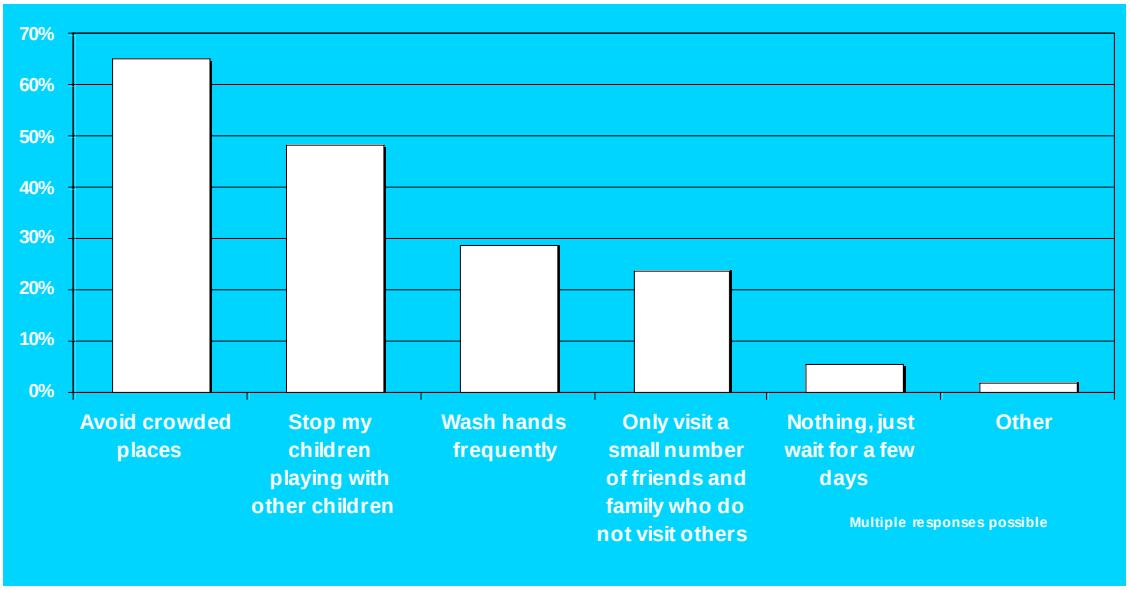
(2) assessment of actions based on existing knowledge of human flu and a generalised prompt *"If many people are becoming sick from a dangerous flu…".*

These aspects were be investigated through focus groups, semi-structured interviews and through the questionnaire surveys for care-givers and school children.

The response of many caregivers to the first question suggested a high level of awareness of avoiding proximity as a effective action, with lesser recognition of a range of other possible actions, Figure 30. It is encouraging that only a very few respondents thought that they did not have to do anything.

This result should not, however, be over-valued. On the spectrum from awareness → knowledge → attitude → behavioural intention → actual behaviour, awareness of an issue is only the start of the process which often needs to be reinforced to actually get the desired behaviour to happen. Furthermore this result is not confirmed by responses to other questions which address the issue of separation, as discussed in Section 6.3

Figure 30 Caregivers' actions to protect against a dangerous flu



In parallel the students were asked to assess the validity of a range of measures as protection against a very bad flu that people said came from poultry. Six measures were identified as offering protection by 50% or more of the students, Figure 31:

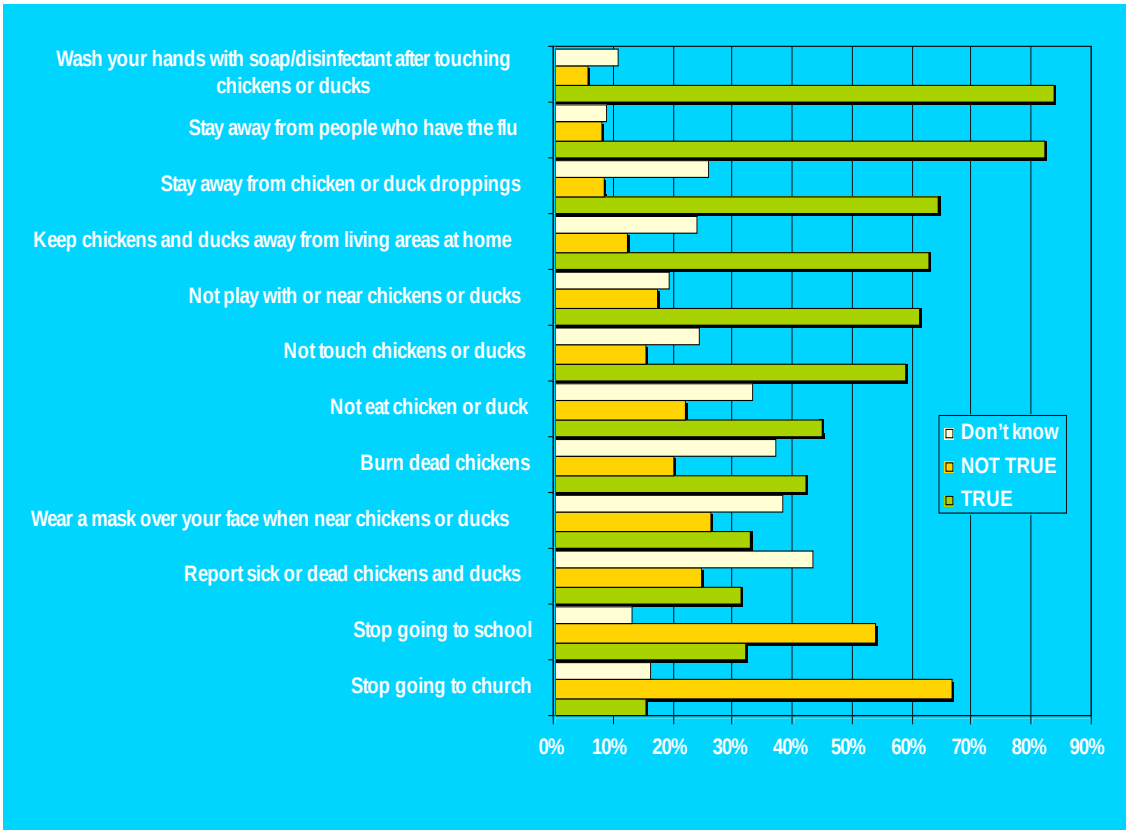
- wash your hands with soap/disinfectant after touching chickens or ducks (84%);
- stay away from people who have the flu (82%);

- stay away from chicken or duck droppings (64%);
- keep chickens and ducks away from living areas at home (63%)
- not play with or near chickens or ducks (61%); and
- not touch chickens or ducks (59%).

The most concerning aspect of the response was the two key aspects of social behaviour. Over half (54%) of the students recorded that stopping going to school would help protect them was "not true" and two thirds (66%) rejected the notion that stopping going to church would help. Discussion returns to this topic in Section 6.3.

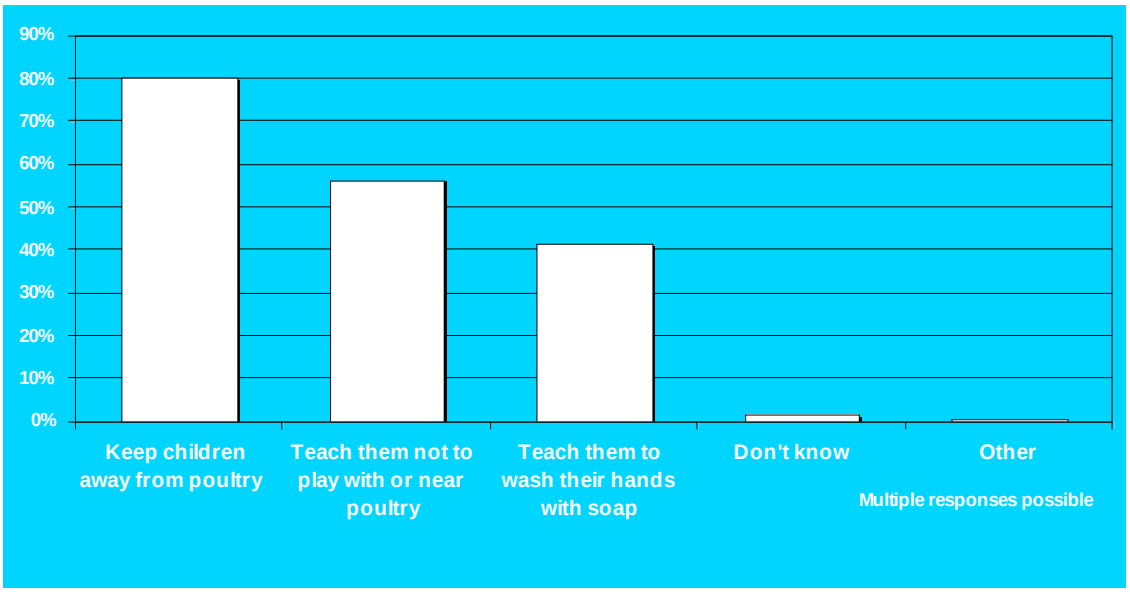
The relatively mixed results for a number of measures, such as reporting dead chickens may be a combination of unfamiliarity of the practice and not seeing a direct link to personal health. Similarly, many students may have not seen a face mask.

Figure 31 Students' assessment of actions to protect yourself if many people are becoming sick from a very bad flu that people said came from poultry



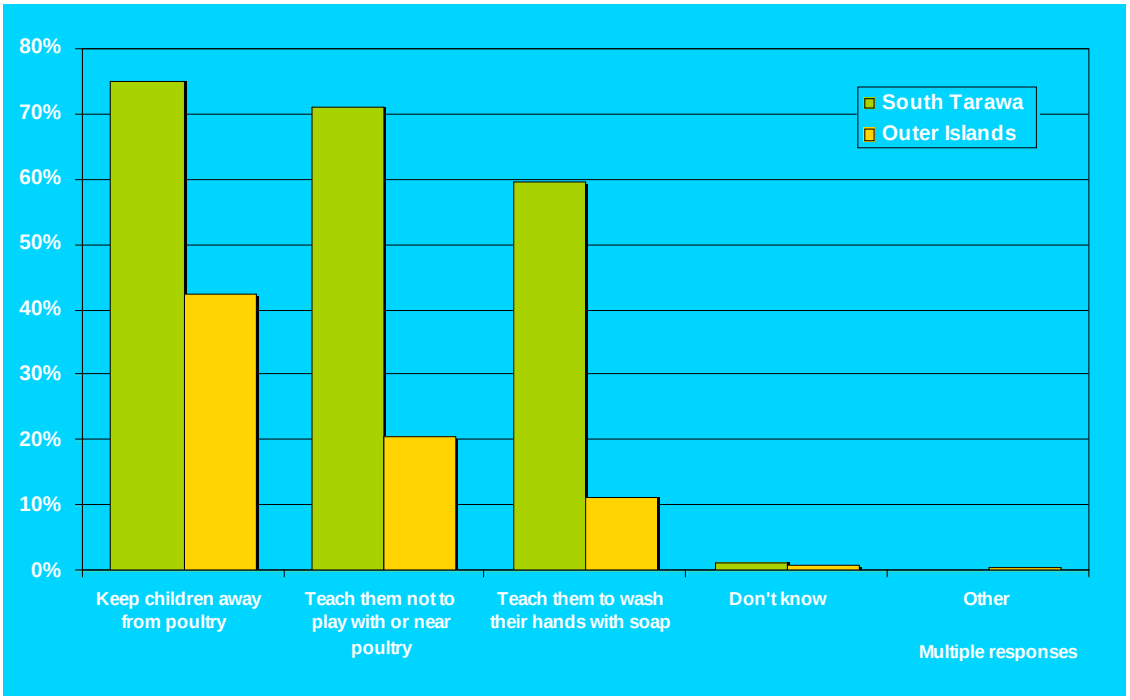
Responses volunteered on actions which could be taken to protect children from a dangerous flu passed on from poultry were concentrated on avoiding contact with poultry and to a lesser degree on teaching children to wash their hands, Figure 32.

Figure 32 Caregivers' actions to protect children against a dangerous flu



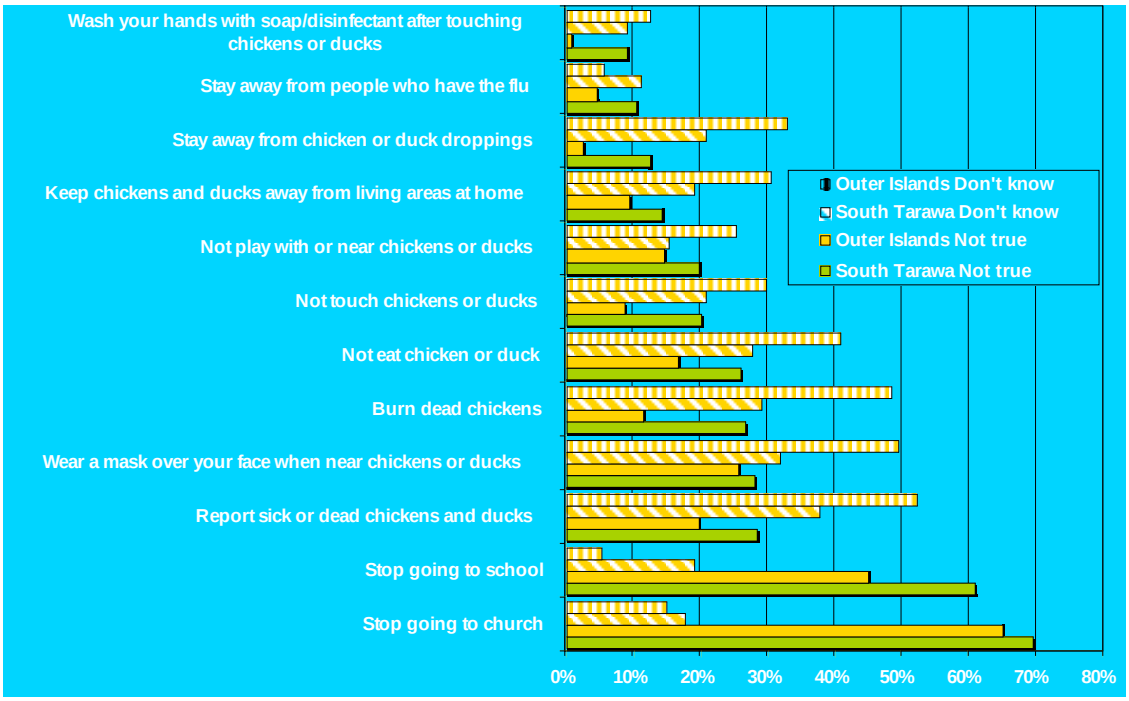
The overall result masks some significant variations among the caregivers between South Tarawa and the Outer Islands, Figure 33. The discrepancies between South Tarawa and the Outer Islands in terms of teaching children to wash their hands with soap are particularly marked, 60% in South Tarawa versus 12% in the Outer Islands.

Figure 33 Caregivers' actions to protect children against a dangerous flu by location



Comparing the "Not true" and "Don't know" responses of students in South Tarawa and the Outer Islands shows some variation by location, Figure 34. In particular, there appears to be relatively consistent higher levels of "Don't knows" in the Outer Islands, typically in the range 10-20%, and lower levels of "Not true".

Figure 34 Students' "Not true" and "Don't know" assessments of actions to protect yourself if many people are becoming sick from a very bad flu that people said came from poultry



At no stage in any of the interviews, discussions or surveys with the caregivers was the suggestion raised that there should be wholesale slaughter of poultry as typically occurs when there is an outbreak of AI/PI. When information was provided in discussion groups that this was done, and indications of the scale on which this had been done, was generally greeted with bemusement. While participants generally said they would concur if the Government ordered the handing over of poultry for eradication, there was some measure of reluctance expressed. There might, for instance, be an issue with some boys hiding their prized fighting cocks.

6 BASELINE MEASURES OF KEY BEHAVIOURAL INTERVENTIONS

The four key behavioural interventions under investigation were:

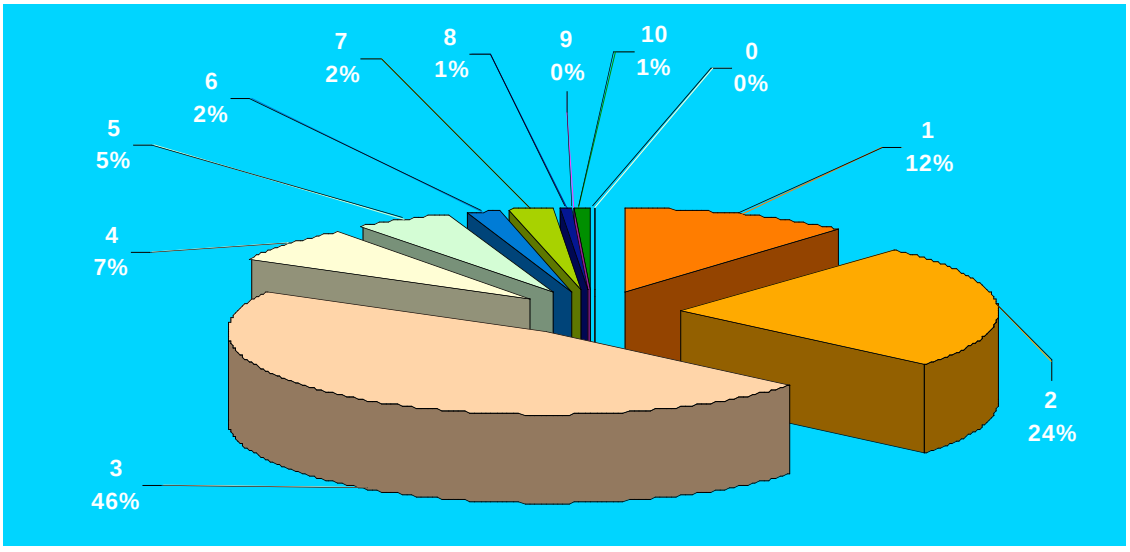
- **wash:** washing hands often and cleaning surfaces;
- **inform:** informing yourself and others about influenza and maintaining good health habits;
- **stay apart:** keep a distance of more than one metre from others especially if sick; stay at home as much as possible; avoid public gatherings; avoid travel;
- **etiquette:** cover coughs and sneezes; don't spit in public; if using masks or scarves dispose or wash them safely.

6.1 Washing

The discussion in Section 2.5 highlighted the widespread observation and reports in the qualitative analysis of personal and household hygiene practices. This was despite that fact that in some locations the condition of the infrastructure, including the wells, left something to be desired.

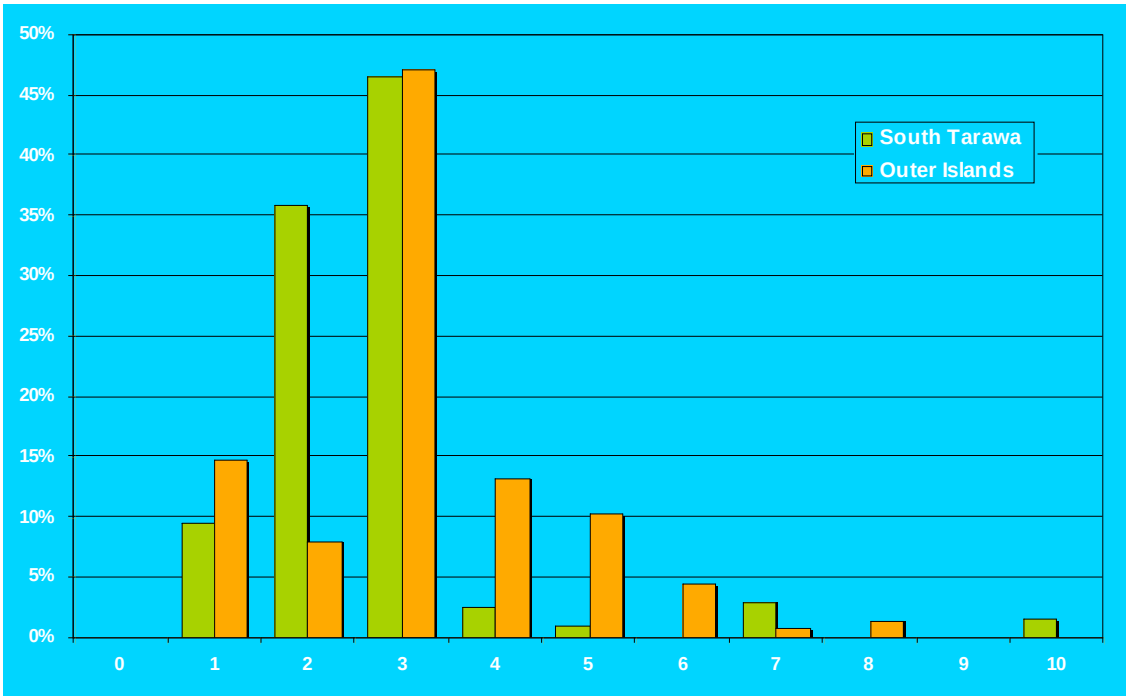
The qualitative assessment of established personal hygiene practices was reinforced in reported behaviours by caregivers for hand washing. The modal response for hand washing was three times a day. This made up 46% of all responses, Figure 35. Reported frequency declines quite rapidly after that through to a maximum of ten times per day. It can be accepted that in some instances the reported levels might not occur but promotion of hand washing will be reinforcing existing behaviour not starting from scratch.

Figure 35 Caregivers reported frequency of hand washing per day



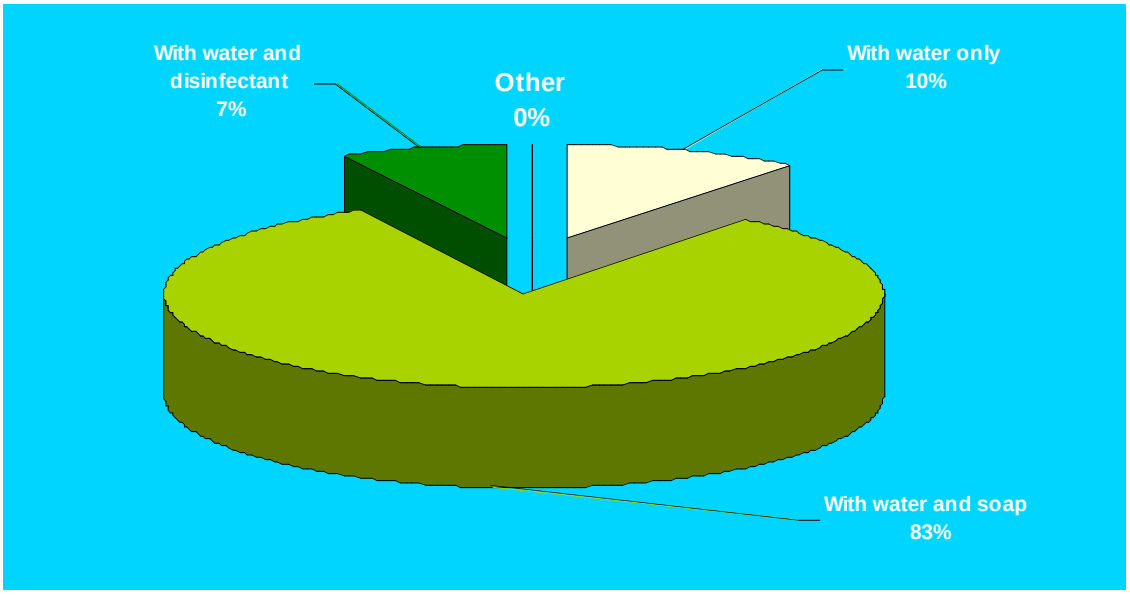
Some variation in frequency of hand washing was recorded between South Tarawa and the Outer Islands with South Tarawa strongly reporting hand washing twice per day (36% vs 8%), with the Outer Islands reporting more higher frequencies, Figure 36.

Figure 36 Caregivers reported frequency of hand washing per day



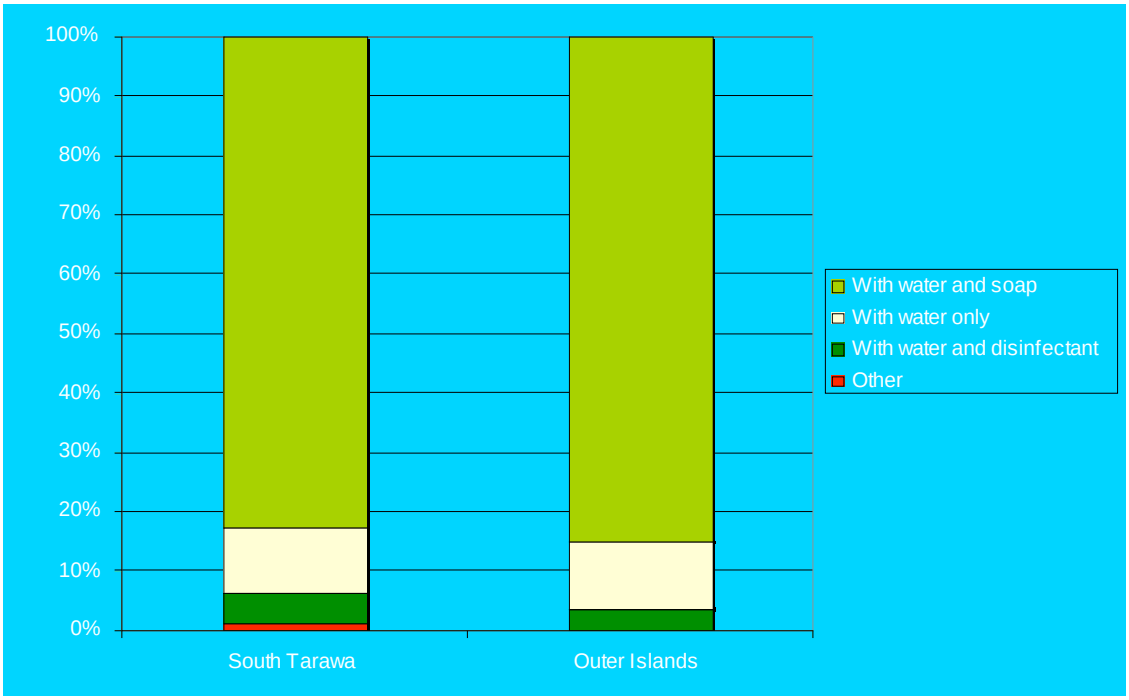
The overwhelming way of hand washing was reported by the caregivers to be with soap and water (83%), Figure 37. There was some variation between South Tarawa and the Outer Islands with only 1% reporting using water and disinfectant in the Outer Islands compared with 14% on South Tarawa.

Figure 37 Cleansing agents used in hand washing by caregivers



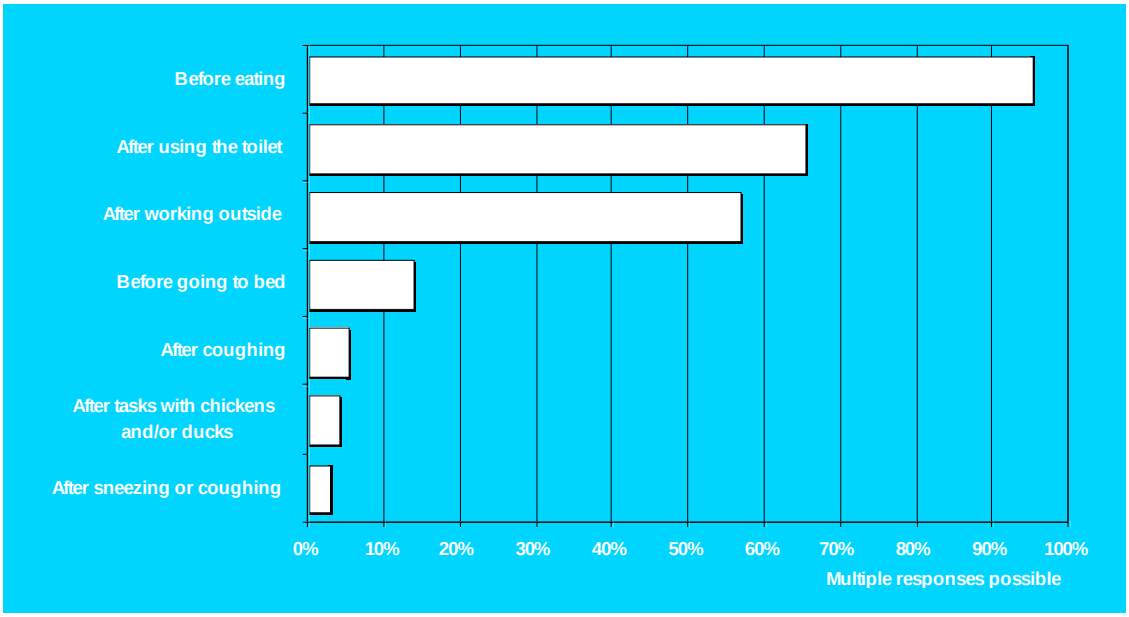
A similar overall pattern was observed in the students survey but in this case there were no major differences between South Tarawa and the Outer Islands, Figure 38.

Figure 38 Cleansing agents used in hand washing by students by location



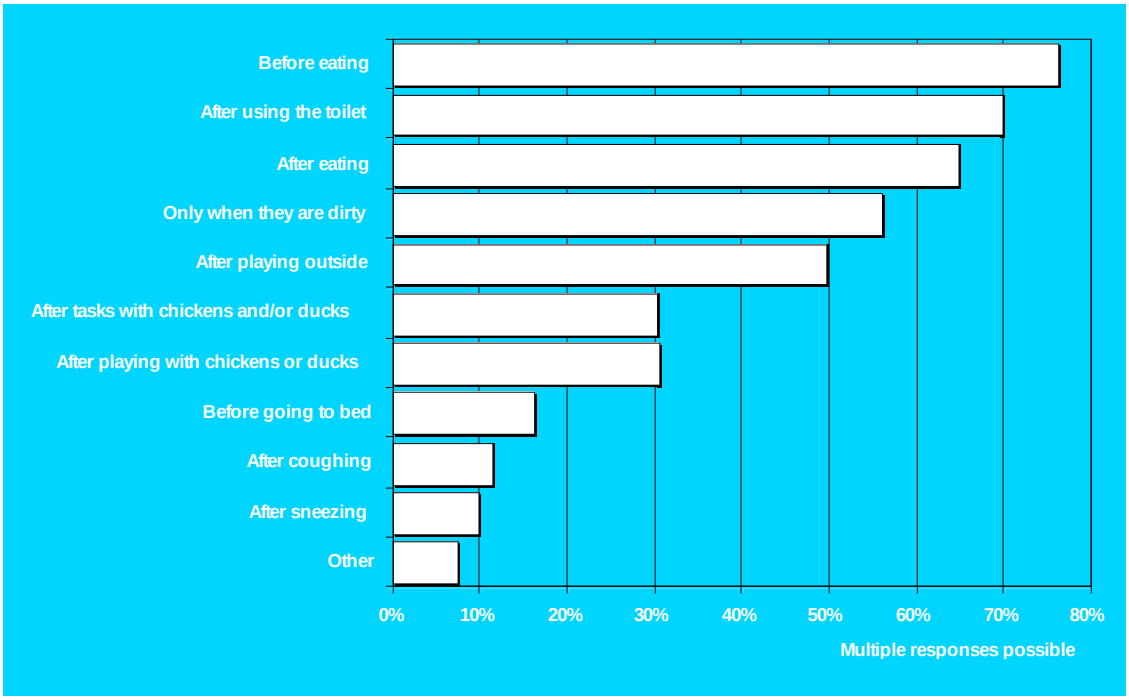
There was almost universal (95%) reporting in the caregivers survey of hand washing being carried out before eating and almost two thirds (65%) reporting hand washing after using the toilet, Figure 39. There were no significant variations in practice between South Tarawa and the Outer Islands.

Figure 39 Caregivers reported timing of hand washing



"Before eating" was also the most frequently recorded timing of hand washing for the students (76%) followed by "after using the toilet" (70%), Figure 40. Multiple selections show that the response *"Only when they are dirty",* which should have excluded other options, was not understood by the students.

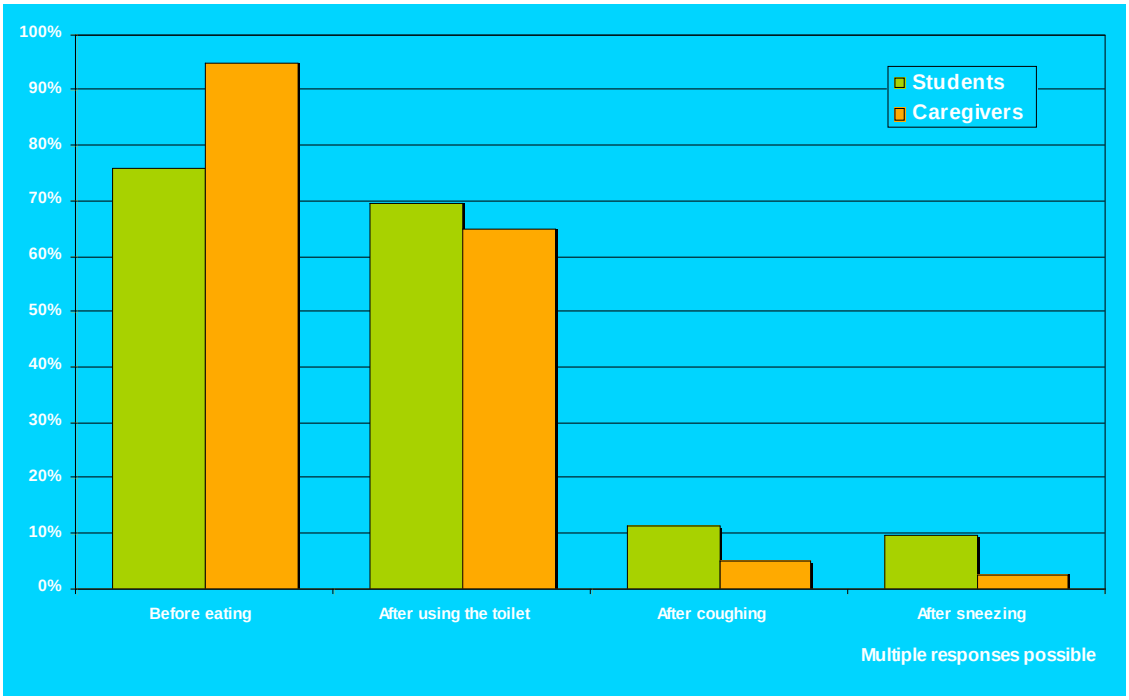
Figure 40 Reported timing of hand washing by students



This may also be another instance where the self-administration using a written questionnaire (rather than oral interviews with the caregivers) may have contributed to the difference in the results between the caregivers and students surveys.

A comparison of responses by caregivers and students shows broad similarities, with "before eating" and "after using the toilet" the most common for both groups, Figure 41. That students report being slightly less diligent at hand washing before eating could well be a common experience for families everywhere. It is interesting to observe that even with the items listed on the questionnaire, only about one in ten of the students recorded washing their hands "after coughing" and "after sneezing".

Figure 41 Comparison of timing of hand washing, caregivers and students



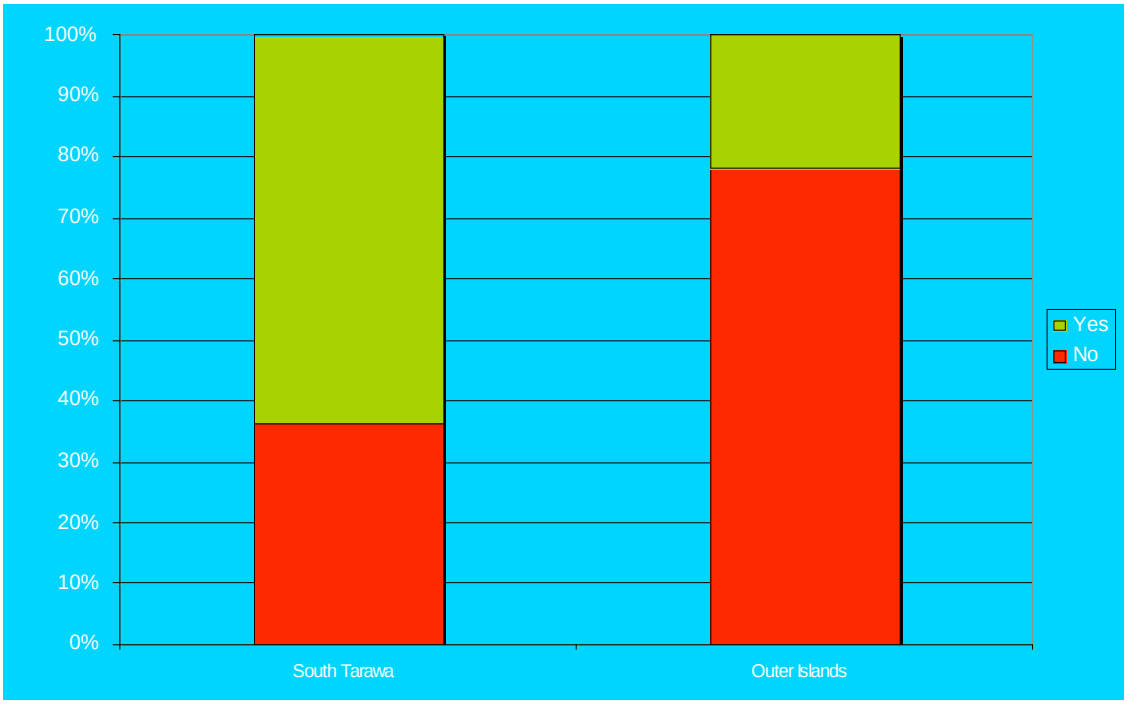
6.2 Inform

The qualitative research identified that the term *"bird flu"* was known to a number of people but few had any understanding at all of what it is. This was confirmed in the caregivers survey.

Some 43% (171) of the caregivers said that they had heard of the term "bird flu". But when asked what they knew about it only a handful knew any details. Eight of the 33 comments were simply that they had heard it was a dangerous disease. Six of the caregivers linked AI/PI to birds or poultry and one respondent gave a full explanation of *"A virus developed in poultry in Asia and spreading to other countries killing people immediately with no cure but just ways of preventing it."*

What the caregivers survey did show was a striking difference between South Tarawa and the Outer Islands in the proportion who had heard of bird flu, Figure 42.

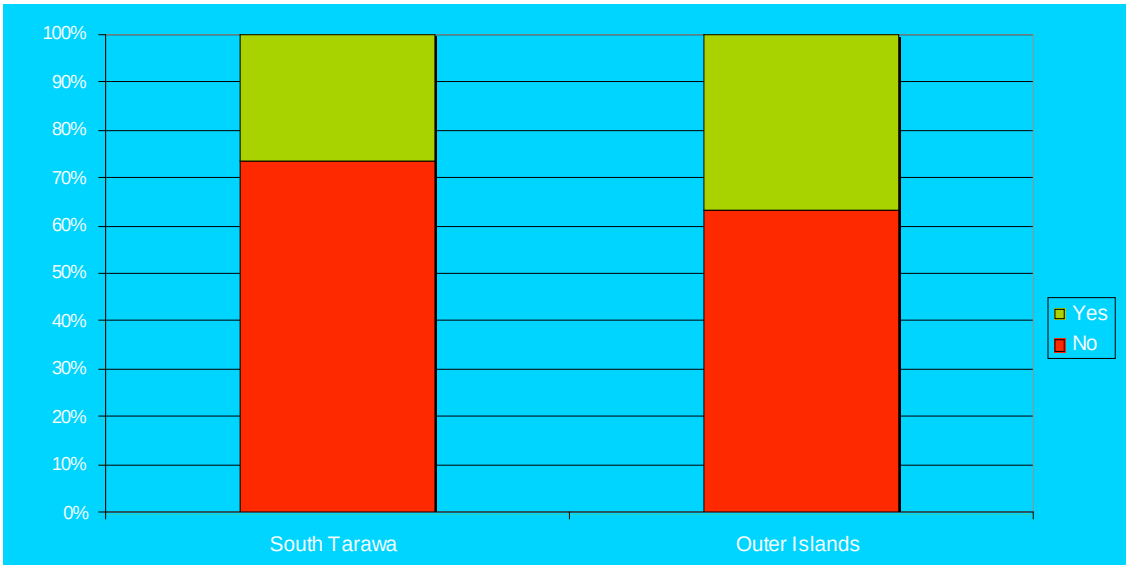
Figure 42 Proportion of caregivers who had heard of bird flu



A contributing factor may have been the incident when the ducks at the fish farm near the airport started to die and it was feared that this might be an outbreak of avian influenza. The volunteered response from 13 respondents on South Tarawa that they had been told about bird flu by health professionals may also have contributed as could the greater exposure to the media on South Tarawa with the two radio stations and television broadcasts of international news.

The results for the students are somewhat different from those of the caregivers with lower levels of having heard of bird flu and no significant differences between South Tarawa and the Outer Islands, Figure 43. The overall rate for students was 30% compared with 43% for the caregivers and there was only a 10% variation between South Tarawa and the Outer Islands compared with 44% in the caregivers survey.

Figure 43 Proportion of students who had heard of bird flu



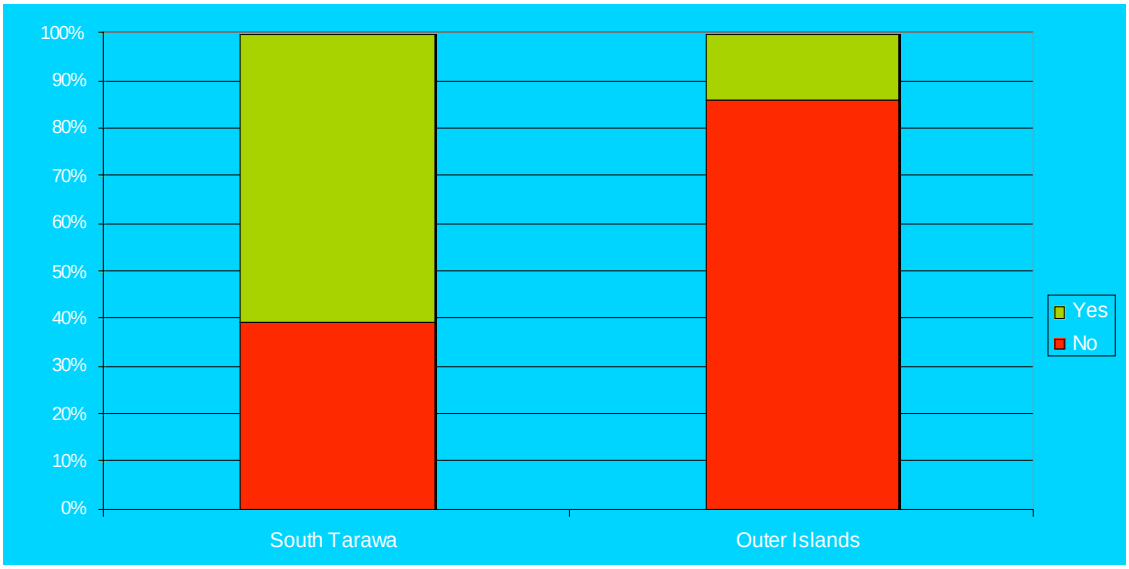
All teachers canvassed claimed that they had heard of bird flu, some making reference to having noticed items on the TV news, or on the radio. Some were aware that there is a serious condition, that it is dangerous (*scary*), and that it can spread easily, but no more. One teacher was aware that people with it get very sick and can die. Others did not know anything specific about it at all. There was little awareness that bird flu is basically the same type of illness as any other flu, just much more serious.

The general lack of knowledge of bird flu is perfectly understandable given the Asian focus of many bird flu outbreaks and the relative isolation of Kiribati.[12] While the BBC News is broadcast daily on the radio and translated into Kiribati and international news feeds are carried on the television on South Tarawa, the places where outbreaks of AI/PI have occurred are remote and many I-Kiribati have more pressing needs in terms of making a living than to worry about such events in far-away places.

Just over 60% of respondents on South Tarawa said that they had heard information about keeping healthy from a health worker in the last three months, compared with 14% in the Outer Islands. Topics mentioned on South Tarawa included AIDS; bird flu (13 mentions), SARS, cleaning up around the house, how to use good water, personal and household hygiene, and diet. Given the coverage of the nurses on North Tarawa, Maiana and Kiritimati, there is no apparent reason why the responses should vary so much.

[12] Kiritimati is the closest to a major population centre being 2250 km from Honolulu. The main centre of population on South Tarawa is 6000km from the nearest reported outbreak on Sulawesi http://gamapserver.who.int/mapLibrary/Files/Maps/Global_H5N1inHumanCUMULATIVE_FIMS_20080205.png as at 5th February 2008.

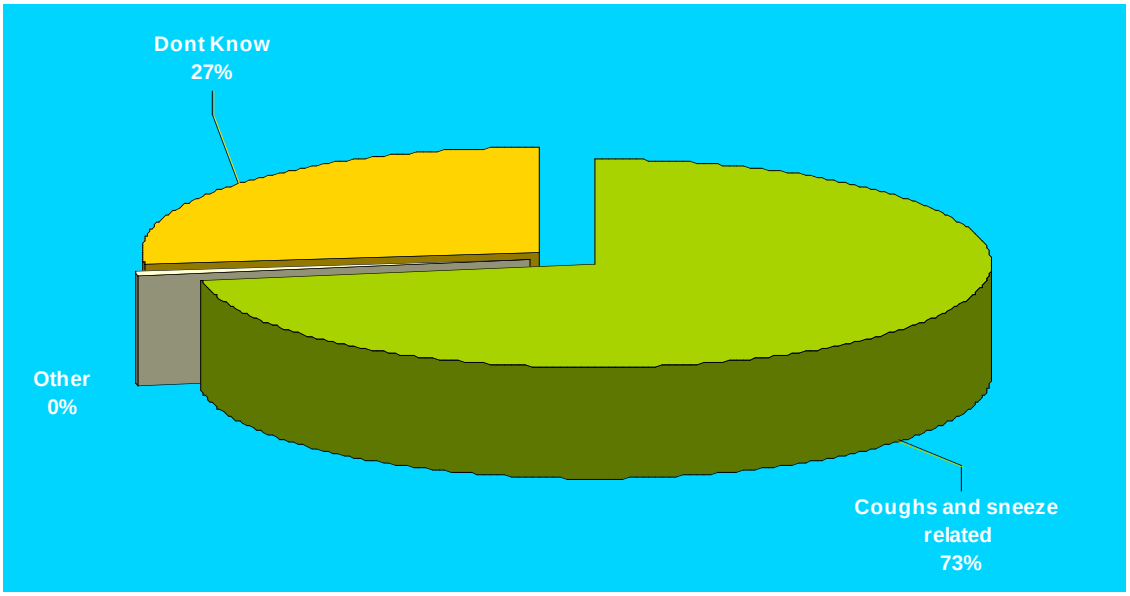
Figure 44 Caregivers' heard any information about keeping healthy in last three months?



The caregivers were clearly uncertain about whom to trust for information about a dangerous flu which could be passed from poultry to people with only 9% volunteering a response. Those citing a health professional outnumbered those citing a traditional health practitioner by 8:1. There is no information to determine why this should be the case but the cross-disciplinary nature of the disease covering both animal and human health may be a factor, as may be the rather short time available for the respondent to think about something that they had not experienced. Certainly, the response is inconsistent with other responses on actions in response to human flu. Whatever the source, there is clearly a topic here to be addressed.

One of the positive results of the survey was that there appears to be a high level of awareness among the caregivers of the transmission of influenza through coughs and sneezes, with three quarters (73%) identifying this channel, Figure 45.

Figure 45 Caregivers' perception of flu transmission



There is, however, a massive disjunction between knowledge of coughs and sneezes as the transmission route for flu and actual and prospective behaviours in the face of a flu outbreak. There are similarities here in knowledge of the damaging effect of smoking and persisting with the habit – awareness is simply not enough in most cases to induce behavioural change.

Perhaps even more relevant, teachers reported that sending children to school while ill with sicknesses such as flu is common practice. Only if children are seriously sick do they not attend. Furthermore, sending sick children home is not a practicable option unless they are seriously ill. Sneezing in class is not considered a reason for sending children home.

6.3 Stay apart

The traditional Kiribati lifestyle of sleeping together and eating together as families (often extended families) presents significant barriers to staying apart. In particular, the traditional sleeping platform (*kiakia* or *buiia,* page 10) is a setting for rapid transmission of infections, such as flu, within a family group as discussed in section 2.2.1.

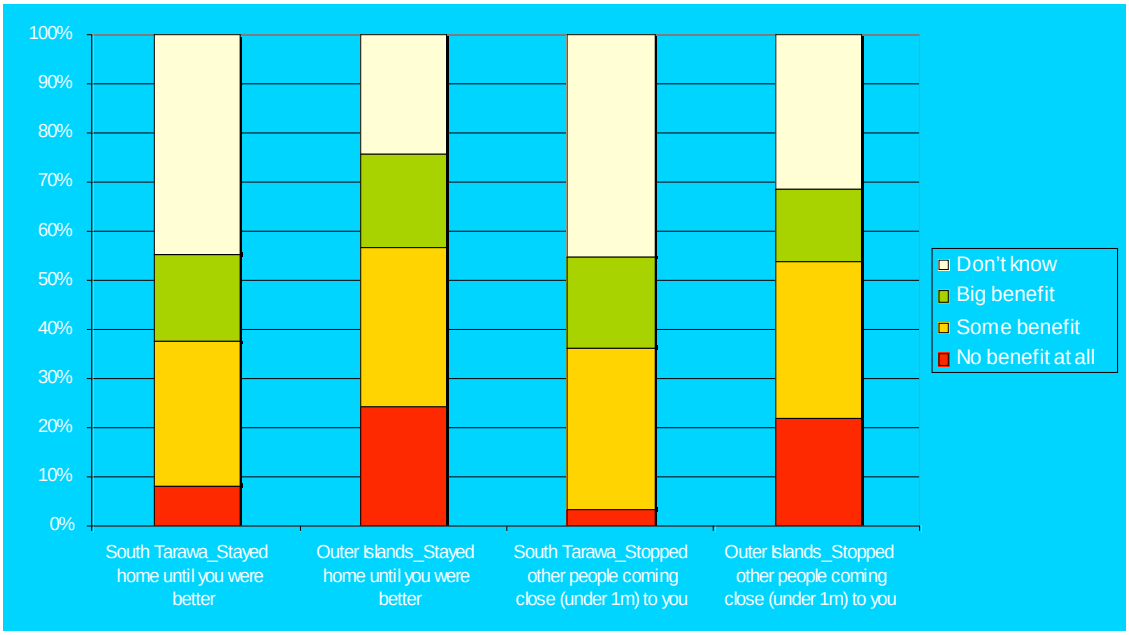
When there was an outbreak of cholera in the 1970s during the British administration, isolation areas where affected people were relocated were set up between villages on South Tarawa. Non-fatal cases typically stayed two or three weeks and were visited only by medical staff. This is no longer possible on South Tarawa as these areas, and the water reserves between villages, have now been built on and house many people. The density of dwellings is particularly high in Betio but settlement is dense right long the series of islets to Bonriki in the east near the airport.

There was anecdotal evidence that in some cases it has been the practice to build separate huts for people in the terminal stages of serious illness. In many places in South Tarawa the lack of space would now preclude this from happening.

Separation was mentioned earlier (section reference) in the context of caregivers' responses to people in their family getting sick and what they might do if threatened by a dangerous flu. As indicated in Figure 14, neither *"minimising contact between the sick family member and others"*, nor *"making sure that the sick family member kept more than one metre from everyone*" was volunteered by any of the caregivers as one of the immediate actions they took when someone had a flu-like illness. There was a slightly higher response in the behavioural intention expressed in response to the question *"If you or one of your family falls sick with high fever, chills, sore throat, and cough, what would you do immediately?"* with 4% volunteering minimising contact with others and one caregiver volunteering maintaining one metre separation, Figure 16.

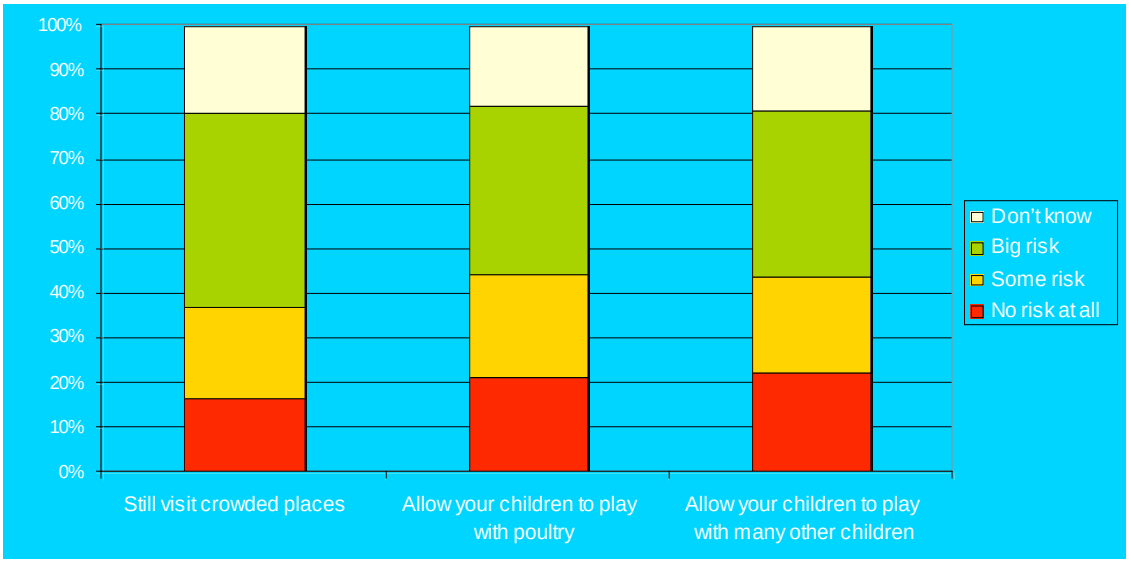
There is further evidence that the benefits of separation when you are sick with a flu-like illness are not fully appreciated by the caregivers in the responses assessing the benefits to be gained, Figure 46 This is more marked in the Outer Islands where 24% considered that there would be "no benefit at all" from staying home until they were better and 22% considered that there was "no benefit at all" in stopping other people coming close (under 1 metre) to you. Overall, there was a significant portion of "don't knows", with markedly higher values on South Tarawa (45% on both behaviours). The fact that only 19% saw a "big benefit" in staying at home until they were well and only 17% saw a "big benefit" in stopping other people coming close (under one metre) is a matter of some concern which will need to be addressed in the communications programme.

Figure 46 Caregivers' assessment of behaviours if have flu-like illness



That there are issues to address is also evidenced in the perception of risk associated with three key behaviours in a situation where there is a dangerous flu is apparent in Figure 47. The fact that 60% identified some risk is a fair starting point, but only one third saw that letting children play with other children might pose a "big risk". The response of around one in five considering that there was no risk at all in these three situations is of some concern.

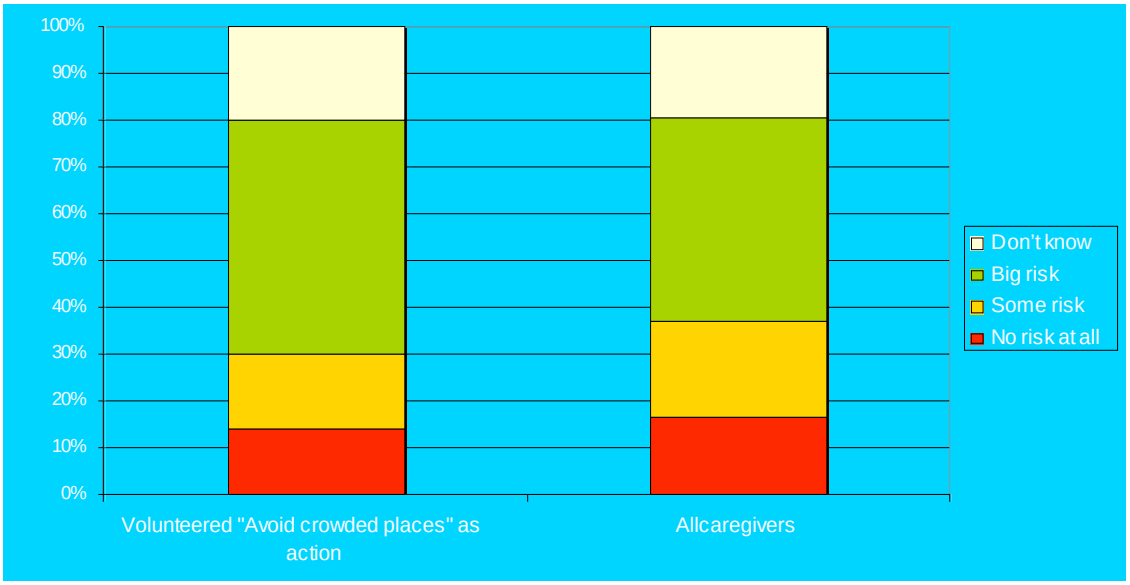
Figure 47 Caregivers' risk assessment of three behaviours



Looking at the risk assessment made by those who volunteered that avoiding crowded places would be help protect them from a dangerous flu is interesting in that it does not show major differences from the overall response of caregivers, Figure 48. It might reasonably have been expected that there would have been a greater alignment

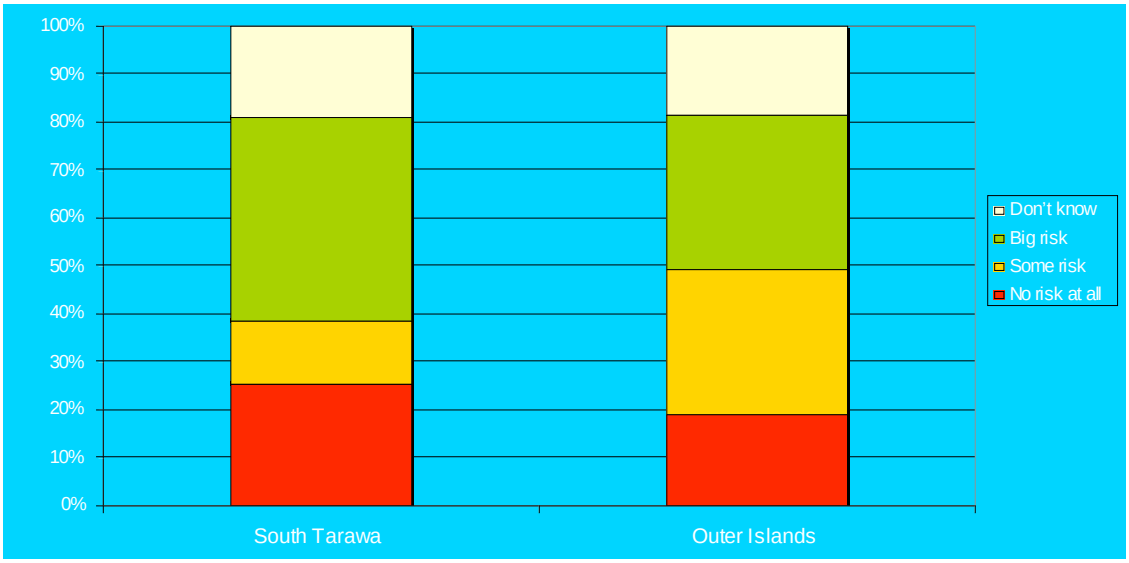
between risk assessment and volunteered action. This may suggest that there is a need to consolidate the understanding of the importance of separation to align the risk assessment better, and thereby provide a more robust basis for response.

Figure 48 Comparative risk assessment of still visiting crowded places by those volunteering "Avoid crowded places" and all caregivers



There was no difference between South Tarawa and the Outer Islands in the risk assessment made by caregivers on still visiting crowded places. The assessments of the risks associated with playing with poultry and playing with many other children do differ. These two assessments follow the same pattern with many more people in South Tarawa making the polar choices of "big risk" and "no risk", and fewer choosing the intermediary "some risk", Figure 49.

Figure 49 Caregivers' risk assessment of allowing children to play with many other children by location

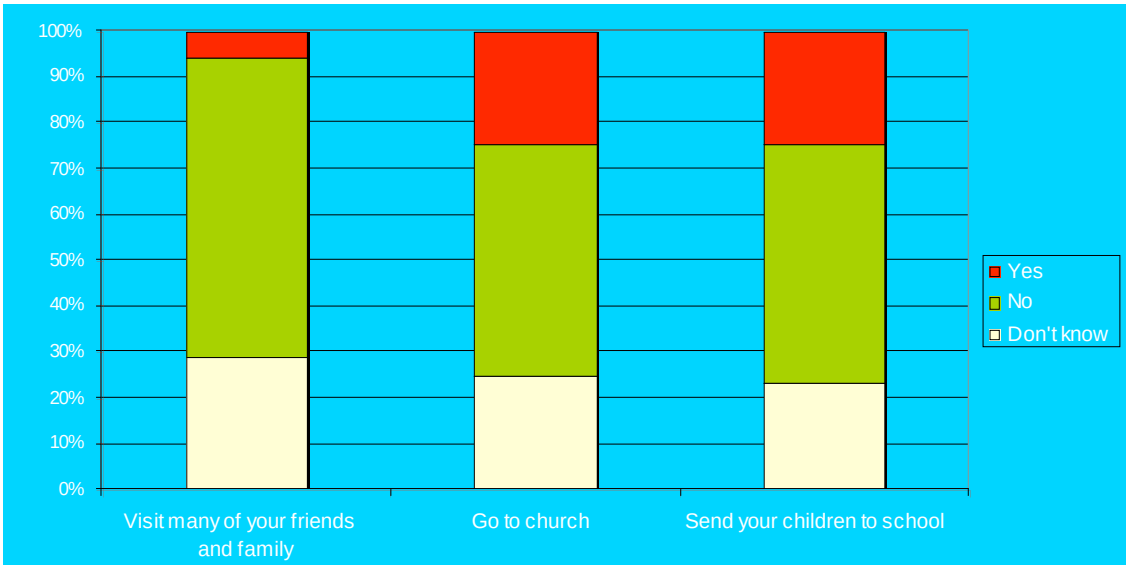


As well as the issues presented by the domestic arrangements, another significant feature of life in Kiribati is the number of gatherings in the maneaba and churches, as discussed earlier in Section REF.

The three questions on behavioural intention resulted in broadly similar responses, with some important variations, Figure 50. The key features of the responses are:

- the quarter of respondents indicating that they would still go to church (25%) and still send their children to school (23%); and
- a significant proportion of "don't know" responses with friends and family (29%), church (25%) and school (23%).

Figure 50 Caregivers' behavioural intention in event of many people becoming sick with a dangerous flu



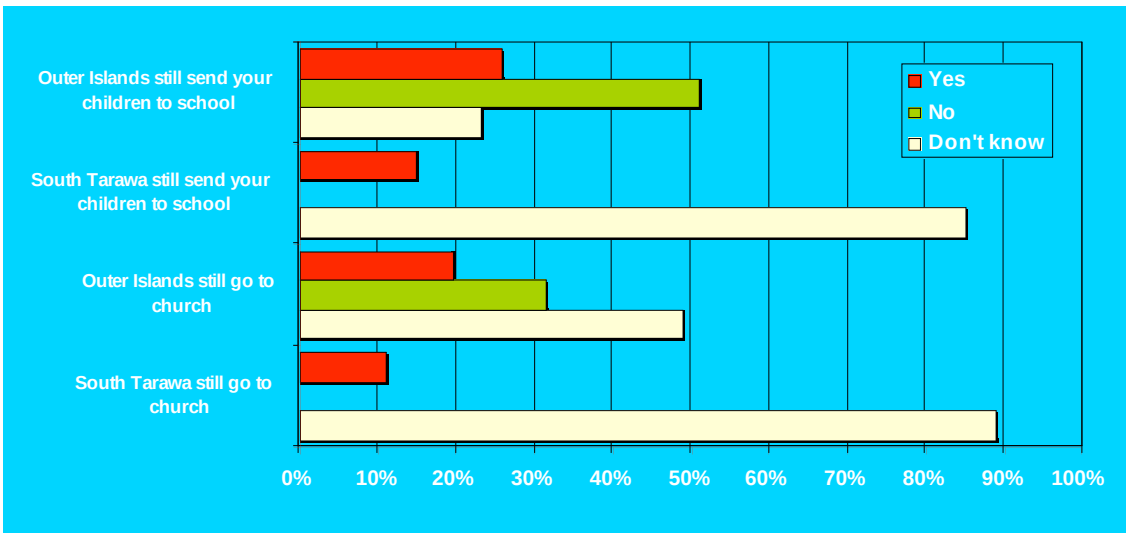
The students' assessment of the protective value of separation was discussed earlier in Section 4, Figure 31. Clearly, the most concerning feature of the response was the two key aspects of social behaviour. Over half (54%) recorded that stopping going to school would help protect them was "not true" and two thirds (66%) rejected the notion that stopping going to church would help.

The breakdown by location shows similar results on going to church and differences on going to school, Figure 52. However, even though 50% in the Outer Islands thought that stopping going to school would protect them, almost as many (45%) recorded that it was "not true" and much of the difference between South Tarawa and the Outer Islands was made up in the proportion of "don't know" responses.

Respondents who replied that they would continue to do these behaviours were then asked would they continue to do them if the government advised against it. The responses on going to church and sending children to school showed that there could be a modest response to such advice, with a high proportion of "don't knows", Figure 51.

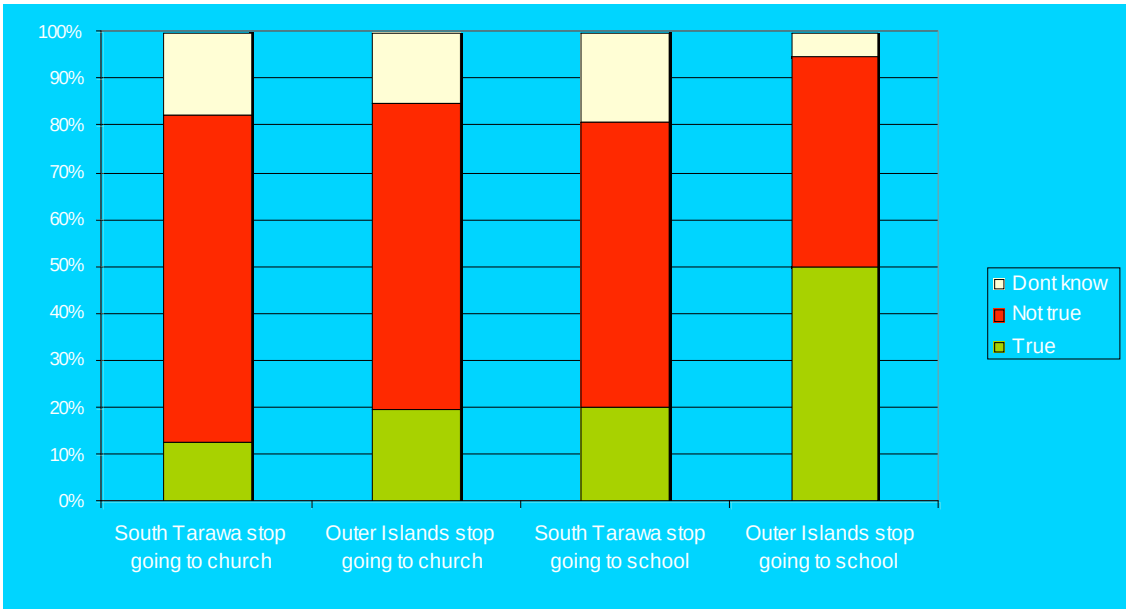
Clearly the sample size is small (the number of respondents varied between 45-53) so no great precision is implied, but the direction of the results suggests that attention will be needed in the communications programme to address social practices. Similarly there may be differences between South Tarawa and the Outer Islands in response to government advice. It should also be considered in assessing these results whether any of those responding "don't know" considered this to be more "socially acceptable" than openly stating that they would go against government advice.

Figure 51 Caregivers' behavioural intention in event of many people becoming sick with a dangerous flu if the government advised against it



While acknowledging that students may have little or no choice in these matters, the failure to associate congregating in large numbers at school and church with risk of infection needs to be addressed, Figure 52.

Figure 52 Students' assessment of protective value of stopping going to church and stopping going to school, by location



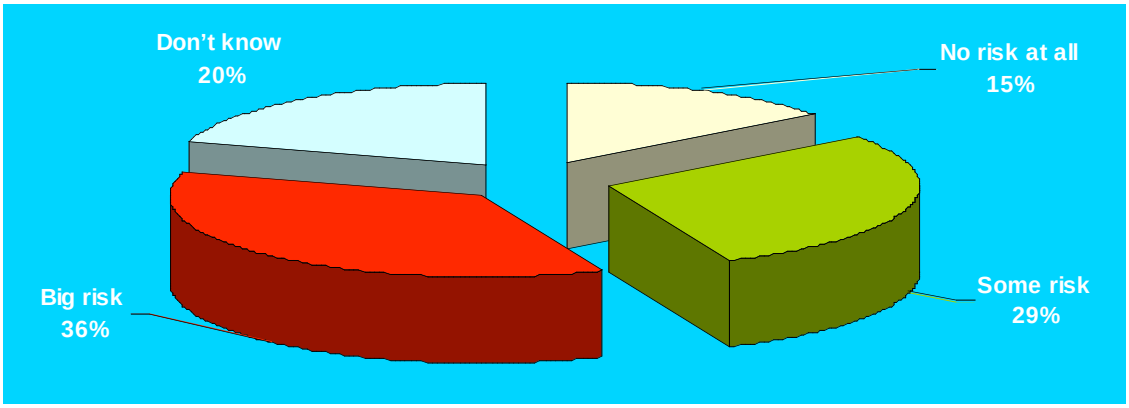
6.4 Etiquette

The practice of spitting in public places is not a commonplace feature of life in Kiribati, unlike some Asian countries (although it was infrequently observed). The main focus on etiquette was therefore on coughs on sneezes. These are something which the behaviour can be systematically assessed over the time available during the fieldwork meaning that coverage was achieved directly and indirectly through the surveys.

The minimal level of volunteering of ensuring that someone with flu covers their coughs and sneezes has already been noted, Figures 14 and 16. Furthermore, only 5% said they regularly washed their hands after coughing or sneezing.

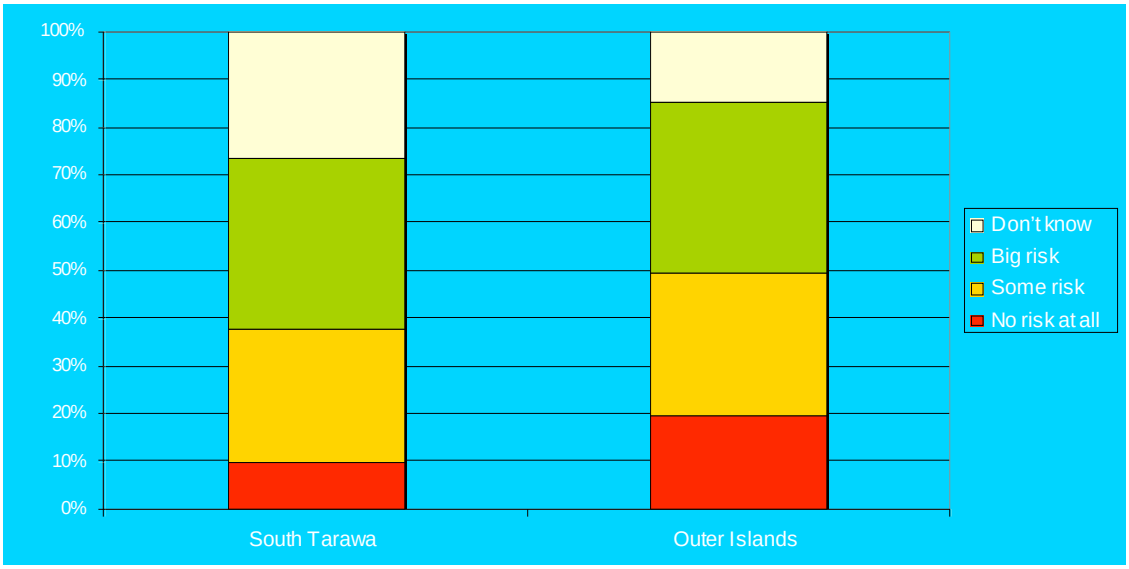
The caregivers were asked *"When you are sick with flu-like illness, how risky for others do you think it would be if you don't cover your coughs and sneezes?"* Despite the large numbers indicating that coughs and sneezes were the channel for flu transmission, 15% responded that the thought there was "no risk at all" and a further 20% responded "don't know", together making up over one third of all the caregivers. Just over one third (36%) thought that it would be a "big risk", Figure 53.

Figure 53 Caregivers risk assessment for others if you don't cover coughs and sneezes when you have flu



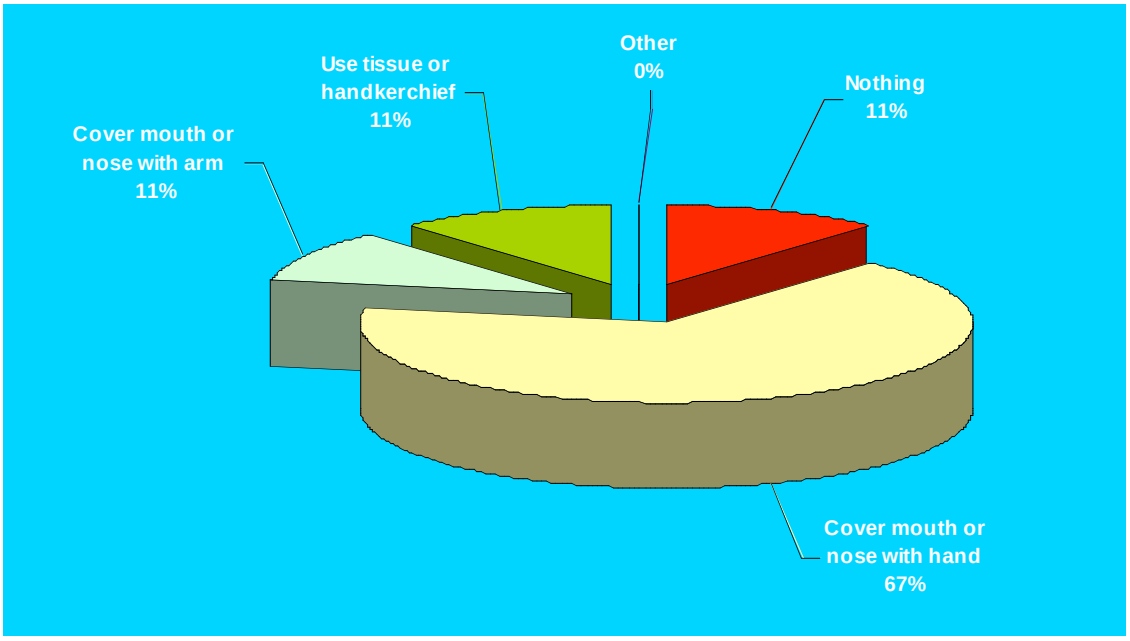
There was a stakeholder small difference in response between South Tarawa and the Outer Islands with almost one in five in the Outer Islands making the assessment that it would be "no risk at all", with the difference being in the proportion of "don't know" responses, Figure 54.

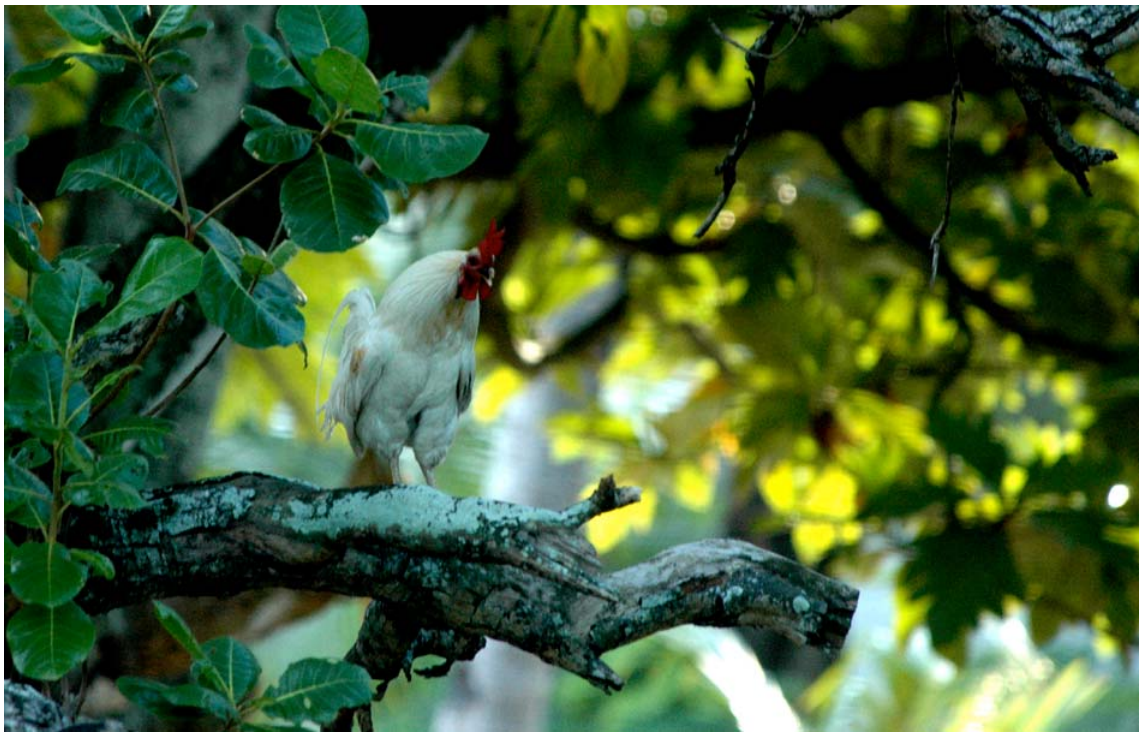
Figure 54 Caregivers risk assessment for others if you don't cover coughs and sneezes when you have flu, by location



When asked what they did when they coughed or sneezed, two thirds (67%) of students recorded that they covered their mouth or nose with their hand, Figure 55. One in ten (11%) recorded that they did nothing.

Figure 55 Students' action when coughing or sneezing



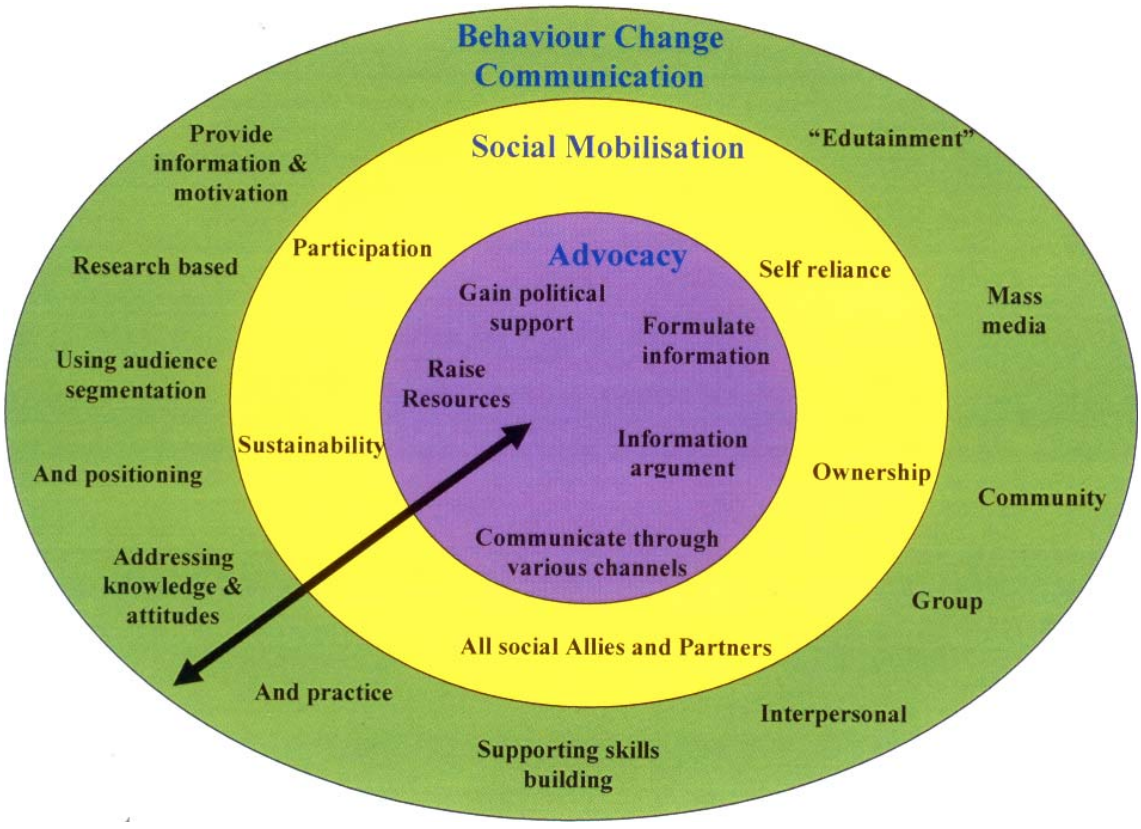


7 EXAMINE ADVOCACY, SOCIAL MOBILISATION AND COMMUNICATION COMPONENTS OF THE EXISTING PREPAREDNESS AND RESPONSE PLAN

The advocacy, social mobilisation and communication components of the existing preparedness and response plan[13] have been examined with particular reference to the *"Communication for Development"* model used in an AI/PI project in Sri Lanka.[14] This employs a three tiered approach of Advocacy, Social Mobilisation and Behaviour Change Communication, Figure 56. Specific attention was paid to:

- quarantine procedures,
- disaster planning,
- legal authority and
- organizational characteristics including potential for civil society engagement.

Figure 56 Communications for Development model



13 A version of the plan entitled *"Avian flu pandemic preparedness plan for Kiribati 2006"* created on 14 August 2007 and last modified on 27 August 2007 was supplied to the researchers in electronic form by the Director of Public Health Dr Airam Metai

14 UNICEF, (2006), *Integrated Communication Strategy for the Prevention and Control of Avian Influenza and Pandemic Human Influenza in Sri Lanka,* DRAFT, 35pp

This model of communications for AI preparedness seeks to meet seven objectives:

(1) Reduce the risk of animal to animal transmission of AI;
(2) Reduce the risk of animal to human transmission of AI;
(3) Reduce the risk of a possible human to human transmission of AI;
(4) Improve hygiene to limit the spread of avian and human flu;
(5) Limit the possible spread of pandemic influenza (PI);
(6) Promote home based care; and
(7) Establish measures for dealing with the dead.

7.1 Quarantine procedures

The current plan focuses on airports as the entry point. This is true for transport by an infected person, but the alternative of transport by a wild bird is not covered. This does not appear to be a serious risk in South Tarawa or the other Gilbert Islands, but is a significant possibility in Kiritimati. Since the wild birds themselves cannot be controlled or quarantined it is necessary to make arrangements to quarantine the areas where the birds congregate. In particular, effective practical measures to halt poaching in bird reserves will be needed.

The Plan refers to passenger movements by both plane and ship but does not specifically refer to crew in either case. This could be an issue in terms of visiting cargo vessels. Dr Mareko of the medical staff on Kiritimati considered such a situation during the fieldwork and discussed procedures which would involve for quarantining the vessel, the protection of medical staff, and minimising contacts from Kiritimati with the vessel. This differs from the proposed procedure in the plan for arriving boats suspected of carrying avian flu which provides for "*Screening people coming from the incoming boats shall be checked* ***off-boat***" (emphasis added).

7.2 Disaster planning

The Plan covers numerous practical aspects of managing an epidemic, once started. The missing element is communications. Communication by cell phone amongst emergency workers is covered, but communications to the public in general is inadequately covered. These need to cover:

- what is happening;
- what is being done;
- what people need to do; and
- how to get advice and help.

This research indicates that in a disaster situation in which avoiding large numbers of people coming together will be paramount then the most appropriate channels of communication are the radio and the medical field staff.

There are two quite distinct epidemic situations that could need to be dealt with which are not adequately separated and dealt with in the Plan:

(1) AI/PI spreading amongst poultry and endangering or infecting people; and
(2) AI/PI spreading among people.

In the former situation, measures involving poultry, such as hygiene in dealing with poultry and mass slaughter will be dominant. This is the situation which has predominated in outbreaks to date. The prime communication need is to enable people to appreciate that they must avoid all contact with poultry and that they must accept the slaughter of their poultry. Secondarily they must seek help quickly if possibly infected themselves.

In the latter case, the poultry are irrelevant. The prime emphasis of communication is to facilitate the rapid detection and isolation of infected persons. The secondary need is to encourage enhanced hygiene practices to slow transmission.

Preparedness planning needs to focus particularly on the initial stages. Once a problem is discovered communications to enable effective action to commence is urgent. Delays in working out what to do and how to do it must be minimised. Hence the content of at least a set of possible initial messages should be drafted and prior agreement should be organised with the radio channels for these to be broadcast.

Newspapers are too slow for important messages. They can provide a useful channel for non-urgent backup information. Television sets are less common than radios and frequently used to play videos, rather than to watch broadcasts. Consequently TV does not provide an effective channel for national communications.

If an epidemic develops, widespread mobilisation of community resources, and major modifications to people's normal way of life, will be required in dealing effectively with it. The Plan goes some way toward identifying what resources will be needed, and the changes in activities that will need to occur, but does not identify the means by which the mobilisation and modifications are to be achieved. Coordinated communications programmes will be vital to achieving these.

7.3 Legal authority

The Plan recognises that Cabinet approval is required before its directives can take effect. This needs to be done prior to the start of any emergency. Before this can be done the specific directives need to be abstracted from the plan and a cabinet paper written so the Cabinet can properly understand what they are being asked to approve and why the proposals are the right responses to the issues.

The powers of the operational participants need to be set out unequivocally. The vice chairman of the Task Force is designated as Commander-in-chief as the representative of the office of the President. The powers of Task Force personnel under existing legislation need to be checked for adequacy. Extensions to these powers may require legislation, which will need to also specify the circumstances under which they come into effect. If legislation is needed then this should be drafted and passed into law prior to an emergency that requires them.

7.4 Organizational characteristics including potential for civil society engagement

The Plan sets out the membership of the Task Force which covers the full range of appropriate organisations. Resourcing in the face of implementation may be an issue.

In particular, government personnel with specialist capabilities will be swamped with demands on their time and resources as soon as an epidemic situation develops. Avoiding overload and ineffectual use of these limited resources requires that operations take place within an operational structure that has been specified in advance. As far as possible this should not be a structure designed solely for dealing with AI. Coping with an AI outbreak will proceed much more effectively if the people working in this structure have had previous experience of working in it on previous occasions. Hence the AI organisational structure should be the same one as is used in dealing with other forms of widespread emergencies (such as severe storms) with only those modifications necessary to address the issues that are specific to AI/PI.

The potential scale of an AI/PI event and the work required to deal with it are such that the ancillary resources of non-government organisations should be enlisted. Of particular importance is the ability of NGO's to communicate with their members. Due to the unfamiliarity of AI, and the low level of existing knowledge about it in the population, it will be important to impart accurate information about the characteristics of AI and of what actions people should take. If the opportunity is not taken to engage NGO's in this task there is a danger that the NGO's will become conduits for inaccurate information and misguided advice.

7.5 Coverage of the model

The version of the Plan reviewed represents a useful start in emergency planning but, could usefully be supplemented by consideration of the requirements of the pre-disaster situation. Perhaps the most significant issue (which is what this UNICEF-sponsored research targets) is that at present the Plan is silent on the potential and practicalities of civil society engagement. The proposals on information sharing and the media represent a much too constrained view of the options for behaviour change communication and do not address matters of social mobilisation – there is not, for instance, a single reference to the "unimane", the churches or the schools in the current phase, all channels now in use by the health promotion officers.

Fish farm near the airport at Bonriki

8 IMPLICATIONS FOR PREPAREDNESS COMMUNICATIONS STRATEGY DEVELOMENT

8.1 Overview in terms of possible communications programme objectives

In terms of the outcomes likely to be sought by the communications strategy in the subsequent phases of this project, the research shows that at present:

- children are not informed about AI/PI. Their level of awareness is modest and knowledge is minimal, like the majority of the population. A significant amount of work will be required if they are to become channels for creating awareness among families about bird flu, safe handling of poultry and proper hygiene practices. Students' perceptions of that there was no protective value in not going to school and not attending church are of particular concern. While the survey shows an awareness of the desirability hand washing, to some extent the responses can reflect knowledge of the "appropriate" answer rather than actual behaviour. For example, some schools do not have either toilets or hand washing facilities and others do not make soap available, meaning that places where children spend considerable time are not conducive to safe hygiene practices;
- family members and food handlers have some awareness of the importance of proper handling and cooking chicken and eggs, and the self–reported practices are supportive. The use of imported frozen chicken is a significant positive in that it eliminates the preparatory phases of handling when starting with live chickens. Cooking practices, which are largely reported to be boiling even before frying are also conducive to safe handling. There is a risk from the modest extent of refrigeration in homes but this can be controlled by immediate use once defrosted. There were some suggestions of partial cooking of chicken when barbecued and also one instance of deliberate "half-cooking" of chicken which was consumed while the meat was still pink. A factor working in favour of the programme is the relatively modest significance of chicken in the Kiribati diet. On the other hand the prevalence of cock-fighting and the practice of the winners eating the losing bird is of concern as cooking may be inadequate;
- the number of families involved in keeping back yard poultry is relatively modest, particularly on South Tarawa. Killing of free-ranging chickens for food is reported to be relatively infrequent, while virtually all of the caged birds are kept for eggs rather than meat. There is no systematic monitoring of backyard farmers to assess the extent to which they observe safe and hygienic poultry handling practices;
- government animal health staff have an appreciation of the importance of continued vigilance of the poultry production and have regular but not necessarily very frequent contact with the modest number of commercial poultry farmers. The "false alarm" over the death of ducks as the fish farm near the airport on South Tarawa will undoubtedly have helped promote this awareness combined with a workshop run by SPC, although there is still some way to go in education and training. There is no monitoring of wild birds - even conservation staff on Kiritimati do not have the resources to have the cause of death of a large number of Black Noddies diagnosed. Nor is there monitoring of households to ensure that they observe proper hygiene practices in handling

and caring for the animals. There is also no system for households to report sick or dead birds and no awareness in the population that this might ever be desirable/necessary;

- some health workers know about preventative measures for AI/PI but overall are in need of an effective communications programme if they are to inform and motivate families on good hygiene practices for AI/PI reasons (rather than simply the general benefits for good health). Their efforts, like the NGOs and other possible agents in behaviour change will be hampered in some localities by inadequate infrastructure for water supply and sanitation; and
- basic groundwork is necessary before village level mobilisers (including teachers, NGOs and village level authorities can promote key messages on AI/PI and foster proper hygiene practices through their networks. There is some education and training on personal and household hygiene undertaken by NGOs, such as the churches, but this has yet to be related to AI/PI.

8.2 Key findings

The key findings of the research can be summarised in terms of positive and negative aspects of the present situation.

There are a number of positive aspects in the situation for AI/PI preparedness and communications:

(1) a well developed system of health centres and clinics with trained staff featured strongly in treatment seeking behaviour;

(2) recognition of nurses and doctors as an important/credible source of health information;

(3) low proportion (3%) of caregivers said they would **only** visit a traditional health practitioner for a future flu event in the family. High reported levels of hand washing before eating (95%) by caregivers and 76% by students;

(4) significant evidence of personal hygiene practices with boiling of water, regular washing, washing of clothes and sweeping of compounds;

(5) behavioural intention of a range of appropriate responses to a dangerous flu (such as keeping children away from poultry and avoiding crowded places) qualified, too some extent, by conflicting responses on risk assessments;

(6) strong community networks including church groups, and women's groups facilitated in some cases by Women's Interest Workers;

(7) relatively low significance of chickens (except to young boys) with only 16% of households reporting keeping chickens in the caregivers survey and prevalence of consumption of imported frozen chickens rather than local chickens. Almost two thirds in the caregivers survey reported not having cooked chicken in the previous month;

(8) small number of commercial poultry farms, concentrated on South Tarawa, focused on egg rather than meat production;

(9) simple, effective media structure with relatively high proportion listening to radio, with radio already in use as a significant channel for health messages;

(10) past experience of awareness programmes on a wide range of topics by an established health promotion unit;

(11) established procedures for notification of unexpectedly high incidence of illnesses;

(12) boiling of chickens the most common form of cooking and sometime undertaken, even prior to frying; and

(13) "trial run" when ducks in the fish farming project near airport died.

There are a number of negative aspects in the situation in the Gilbert Group in terms of for AI/PI preparedness and communications:

(1) existing very high incidence of flu (especially after rain and visiting ships) making detection of bird flu potentially difficult evidenced both in the MS1 reports and the caregivers and students surveys;

(2) rapid population growth on South Tarawa through natural increase and in-migration is a challenge to the health services and makes many of practices of (such as isolation areas) past no longer possible through lack of space;

(3) high degree of movement a regular part of daily life reflected, for instance, in the number of passenger vans, buses and trucks on the road and inter-island boat travel (including between North and South Tarawa);

(4) high frequency of formal and informal gatherings in maneaba and other settings associated with churches, NGOs, and other activities;

(5) the traditional extended family living arrangements, especially the sleeping platform, which make for ready transmission of infection through the family;

(6) the practices of sending children to school when showing mild flu symptoms, and of going to work with mild flu symptoms (but probably when infectious);

(7) the lack of a system of reporting of chicken deaths and evidence from caregivers survey that no-one had reported chicken deaths;

(8) failure to explain deaths of ducks in the fish-farming project near airport until after test results showed they were poisoned, combined with lack of understanding of how to recognise bird flu. The failure of intra-agency communication within the Department of Agriculture was a significant factor in the event. At the time of the research there was no standard operating procedure to cover thus type of incident;

(9) unsanitary public spaces (e.g. defecation on beaches) contributing to high incidence of diarrhea and other ailments;

(10) inadequate infrastructure for water supply, sanitation including at a number of schools. Absence of soap at those with washing facilities not conducive to good hygiene practices;

(11) common experience of *"learning the hard way"* rather than prevention can make turning awareness into action difficult;

(12) donor-driven awareness programmes typically have no on-going resourcing once project is completed (local resourcing an issue for other programmes);

(13) limited/no monitoring or follow-up of impact of information programmes;

(14) low prevalence of visual arts (e.g. no carvings, lack of pictures on walls, or woven decorative panels etc.) making impact of posters questionable;[15]

[15] There was a striking dearth of visual arts in public and private spaces in the islands visited, in contrast to many other Pacific nations. No carvings were observed, there was a lack of pictures

(15) cock fighting by younger boys (previous tradition of fighting Kitipa);

(16) over one quarter of caregivers reported chickens in the living areas;

(17) interactions with traditional health practitioners could create potential for conflicting advice for 10% of caregivers who said they would visit both a medical professional and a traditional health practitioner for a future flu event. Delays if visiting traditional healers first rather than nurse could prove fatal in bird flu cases (with a parallel case of a childbirth death reported on Maiana);

(18) term "bird flu" is known to some caregivers (more particularly in South Tarawa) and some students but very few understand what it is. There was the same result from the two poultry firms visited - partial awareness but no knowledge;

(19) low level reported of protective behaviours, (separation and etiquette) as response to someone having flu-like illness combined with low rate of reporting of washing hands after coughs and sneezes;

(20) some significant reluctance to accept protective value of separation particularly in terms of going to church and sending students/students attending school;

(21) sometimes negative response from unimane and other villagers to information programmes e.g. immunisation, balanced diet and HIV/Aids;

(22) disposal of dead birds in sea/lagoon common;

(23) barefoot or jandals are standard on feet – no personal protection (boots, masks, etc.) even on chicken farms;

(24) CB communications from health centres to Tarawa sometimes unreliable;

(25) outmoded message style of anti-smoking campaign a poor model;

(26) common dependence of local groups on key individuals;

(27) inconsistent attitudes to known health protection measures include failure by some people to consistently wash hands, and smoking by MH&MS staff;

(28) sometimes inadequate cooking of chicken when barbecuing (which can occur when local chickens are cooked at gatherings); and

(29) poaching of wild birds on Kiritimati, which has a range of migratory and vagrant species.

Looking across the range of responses to the surveys the overall conclusion is that there are inconsistencies between knowledge, risk assessment and behavioural intention and that problems are posed by environmental constraints. This is perhaps best illustrated in the issue of separation where there appears to be:

- an appreciation of the role of coughs and sneezes in flu transmission;
- reports of going to work and sending children to school with mild/modest (but most probably infectious) flu symptoms;
- awareness of need to avoid crowded places in the event of a dangerous flu;

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on walls (most building simply being plain concrete block, devoid of decoration including many of the classrooms inspected). Similarly there was nothing apparent like the tradition of *tukutuku* (woven decorative panels) in Aotearoa-New Zealand or *tivaevae* (quilting) in the Cook Islands. This raises serious questions about the impact of posters if indeed there is so little appreciation of the visual. Even the walls of one of the health centres visited were almost entirely unadorned. There were four A4 flyers from an HIV/Aids campaign on one of the internal notice boards, but none of the posters that were seen in the storeroom at the MH&MS on South Tarawa.

- a proportion of the population stating the behavioural intention to still go to church/send their children to school (in some cases despite government advice to the contrary);
- significant reluctance by schoolchildren and some caregivers to accept that going to church and sending children to school could pose any form of risk; and
- practical issues related to traditional lifestyles and accommodation which can make it difficult to separate sick persons from the rest of the household.

8.3 Implications for communications programme design

There are a number of implications for the development of communications strategy development that can be drawn from the research including the need for:

(1) a multi-channel approach to achieve full coverage rather than reliance of single/few channels (includes health professionals, health promotion unit, women's groups, church groups, schools and radio);

(2) a long term programme is required because the MH&MS and UNICEF are seeking behavioural change - Kiribati has considerable experience with short-term programmes which end when donor funding runs out and before desired behavioural change is entrenched;

(3) appropriate resourcing to sustain programmes over time and to meet requirements of specific settings, e.g. *mweaka* (donation) for meetings at the maneaba and transport to workshops for attendees from outer villages;

(4) learn from experience of KFHA of *"quote from the Bible"* in terms of preparing/positioning messages;[16]

(5) appropriate respect to the unimane when undertaking promotions at the village level. This would imply a range of tactics to avoid confrontations when what is required goes against tradition. Kireata Ruteru already employs a range of useful techniques for this, including briefing of selected unimane before the formal presentation so that there is already an advocate among the elders (or even a constituency) for what is being promoted;

(6) distinguish between the specific circumstances of South Tarawa and other locations including access to media, the role of traditional leaders, infrastructure, lifestyle, and resources; and

(7) carefully consider nature of visual aids support for campaigns including exploring possible hand-bill-style displays for vans/buses where exposure would be high.

8.4 Key Messages

There are a number of key messages that will need to be conveyed in the AI/PI communications including:

(1) affirmation/reinforcement of existing personal hygiene practices to achieve high levels of consistent behaviour, not simply a strong behavioural intention;

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16 An extremely interesting approach to providing education in Catholic secondary schools addresses a range of otherwise potentially contentious subjects through citation of appropriate sections in The Bible and packaging as a health programme.

(2) building the profile of nurses/nurse aides/doctors as the **first** point of contact for all heath information and treatment (NB it is important that there be no denigration of traditional healers or remedies);

(3) need for reporting of unusual numbers of chicken deaths;

(4) need for use of personal protection equipment especially for hands, feet and airways particularly on poultry farms and by animal health workers;

(5) risks associated with cock fighting;

(6) risks associated with the poaching of wild birds on Kiritimati; and

(7) need to cook chicken properly.

These messages need to be set into a broad context of healthy living not treated as yet another one-off, single-issue campaign which stops when the funds run out.

8.5 Communications and behavioural change

The proposed communications programme development supported by UNICEF can play a vital role in enhancing information; promoting the desired behavioural changes; and encouraging preparedness. This is necessary but not sufficient to ensure consistent adoption of new or changed behaviours.

Engagement with civil society, in particular the churches, NGOs and traditional leaders will be essential in translating awareness, knowledge, positive attitudes and behavioural intention into consistent practice of the four key behavioural interventions. It is also essential to ensure that other required behaviours such as the reporting of significant numbers of chicken deaths are undertaken consistently. These various groups will act as "agents" of the programme using their existing authority and networks in the community to deliver some messages, reinforce others and, most importantly, to faciliatate and support behaviour change.

If there are no "agents" to play this supportive role in the programme there is a serious risk of what may be called the "New Year Resolution Problem" – when the behavioural intention is not turned into action! Agents can support change throught the regular contacts they have with people, be they a village leader, clergy, teacher or a nurse.

Engagement across civil society at the village and island scales also changes the emphasis from the individual to their community, which is inherently more sustainable. Effective reduction of incidence of cock fighting, for instance, will require positive measures such as promotion of alternative activities (like canoe building and sailing which seems to have declined) as well as sanctions. This can best be delivered in a group setting where the participants reinforce one another. Similarly, villagers who keep free-range chickens will not go to the expense of fencing and feeding chickens (even if they can afford it, which in many cases is unlikely) without changing the social perception of the practice so that other villagers are less accepting of it.

In general in Kiribati where there are limited incomes and much poverty actions which require significant additional expense are likely to be difficult to promote. That said, it is clear that on South Tarawa some people do cage their chickens, despite the expense, for protection from roaming dogs and theft. An expectation anyone other than the commercial farmers on South Tarawa could be persuaded to use personal protective gear when handling poutry, however, is likely to be disappointed.

There will be opportunities to gain synergies with the existing activities of a range of groups on both South Tarawa and the outreach programmes to the Outer Islands but ultimately there will need to be some resourcing made available to them as they are ultimately a very potent mechanism for both training in, and reinforcement of, the desired behaviours. There also needs to be a serious look at the infrastructure. Schools which do not have toilets or washrooms do not provide an apporpriate environment for large numbers of children for the whole of the school day. Neither, for that matter, does it set an appropriate model for people at home.

One of the encouraging findings from the research is that the organisations who could act as "agents" for behavioural change are strong. Carefully targetting linking the measures to the capabilities of different groups, such as reporting to the unimane and hygiene to the churches and NGOs, could go a long way to ensuring appropriate behavioural change.

APPENDICES

1. RESEARCH DESIGN

Preliminary research identified five local factors to be taken into account in developing the research plan and associated work programme:

(1) the demography of Kiribati;

(2) the geography of Kiribati;

(3) the poultry-keeping practices;

(4) the significant environmental issues faced in South Tarawa potentially providing some experience in public information programmes in health-related issues;

(5) the prevalence of migratory birds on Kiritimati (Christmas Island).

1.1. Demography

Three main demographic factors were considered in the research design and had a bearing on segmentation and sampling:

(1) the population is overwhelmingly of Micronesian ethnicity (98.8%);

(2) the population is highly concentrated in the Gilberts group. The small islands that make up the urban centre in South Tarawa are densely populated with an estimated population of 40,311 in 2005. This represented 48% of an estimated 83,683 in the Gilbert Islands and 44% of the national population of 92,533. In 2000, 43% of the population was characterised as "urban" and 57% as rural. The urban proportion is rising steadily and may have reached 50% by 2005;

(3) some 40% of the population is below 15 years of age;

(4) there is a significant component of the population in South Tarawa living in informal settlements[1] with limited access to reticulated services.

The key implications of these characteristics for research design and sampling were:

- unlike in other countries ethnicity was not a sampling factor;
- sampling (both non-random and random) needed to be structured to include the urban concentration on South Tarawa and more remote non-urbanised islands;
- specific attention needed to be paid to school children; and
- persons living in informal settlements on Tarawa may constitute a specific "at risk" group and need to be specifically canvassed.

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[1] A recent study comments *"South Tarawa may have a reticulated sewerage system, but this is not available to a growing number of informal settlements and therefore has not solved the problems of open defecation. Most sewage and solid waste continues to be disposed along the waterfront, and green belts and water catchments have been replaced with housing."* (p25).
The study also noted that *"Despite a host of environmental reports and workshops over the past decade little concerted action appears to have taken place. Perhaps this only reflects the attitudes of constituents. In a recent survey, more than one-third of people in Kiribati identified the sea as an acceptable place to dispose waste, while 29% of Tarawa residents did not recognise that waste was a problem (only 5.4% of Suva's and 7.6% of Apia's residents felt the same).* (p26)
Storey, D (2006), *Urbanisation in the Pacific*, from State, Society and Governance in Melanesia, Targeted research papers for AusAID, 34pp

1.2. Geography

Kiribati consists of 32 low atolls and one raised island (of which 22 are populated) divided into three groups. The atolls have a total area of 810 square km, while its EEZ is 3.5 million square km. The population is approximately 93,000 and is growing at a rate of 2.3 per cent per year. Kiribati has a community-based culture.

The split of the country into three groups required that coverage include at least one island from the Line Islands. The Phoenix Group were deemed to be both too inaccessible and to have too small a share of the population (41 people in 2005) to be addressed within the timeframe of the project. The logical candidate from the Line Islands was Kiritimati (Christmas Island) as it has the greatest population, weekly connections to Honolulu and Nadi (access to other Line Islands is haphazard), a small tourism industry, and significant numbers of migratory birds.

1.3. Poultry keeping practice

One of the challenges posed to AI/PI preparedness in Kiribati is the "village" or "Island" chicken system of poultry keeping which is much less structured than in some other countries. There is limited commercial production on South Tarawa and no formal commercial poultry production system on the other islands. Ajuyah (1999) [2] estimated that there were 85,000 local and 7000 commercial chickens in a the toal of 92,000 in Kiribati.

Ajuyah, (1999) *op. cit.* notes that with village chickens *"the level of management and financial input range from very low to zero, for example supplementary feed and sleeping or laying accommodation are rarely provided. In most cases adult chickens sleep or roost on treetops at night. The chickens hatch their own eggs by natural incubation and the mother hen raised her young chicks until weaning. There is no record of production. Identification is done by keen observation by the traditional farmer.*

The chickens roam in/around the homestead and suburbs in search of sustenance. The diet of the scavenging chicken is location specific…Usually these feed sources are unreliable during heavy rains which sometimes last for days. On the average therefore nutrition is poor, growth rate is slow and level of production or product yield is low.

Under this system of production, chicken mortality is very high as a result of losses of birds and eggs to predators, such as rats, cats, pigs and dogs. Other sources of losses and mortality include from thieves, cars and diseases.

In a scavenging flock of village chickens there is no age separation as a result of which the younger chickens are the most susceptible to parasites and diseases. The complete lack of effective disease control, poor nutrition and no protection from rain, wind and sun further compromise the health status of village chickens. Infectious diseases are easily transmitted within and between scavenging flocks. Some common

[2] A.O. Ajuyah (1999), "Rural family poultry production in the South Pacific Region", FAO Agriculture Department, Animal Production and Health Division, INFPD E-Conference *"The Scope and Effect of Family Poultry Research and Development,"* http://www.fao.org/ag/againfo/subjects/en/infpd/documents/econf_scope/paper4.html

diseases that affect the village chickens include fowl cholera, fowl pox, coryza, coccidiosis, worms, lice and mite infection."

While Ajuyah was referring to a number of countries, his views on the likely disease status of chickens in Kiribati was confirmed in surveys in 1992-4 reported by Saville (n.d.)[3] which identified the following diseases notifiable to the FAO and the Office International des Epizooties (OIE) in poultry in Kiribati:

- **OIE List A Diseases**
  - *Newcastle Disease* (CAHL)
- **OIE List B Diseases**
  - *Avian infectious bronchitis* (CAHL): endemic
  - *Avian infectious laryngotracheitis* (CAHL): endemic
  - *Fowl pox:* widespread
  - *Fowl cholera* (CAHL)
  - *Pullorum-Typhoid disease* (CAHL)
  - *Infectious bursal disease* (CAHL): widespread
  - *Mareks disease* (CAHL)
  - *Mycoplasma synoviae & Mycoplasma gallisepticum (CAHL): widespread.*
- **OIE List C Diseases**
  - *Botulism* (CAHL): previously reported cause of deaths;
  - *Coccidiosis:* due to *Eimerai tenella* and *Eimeria necatrix* is endemic;
  - *Avian encephalomyelitis* (CAHL): on Tarawa;
  - *Avian leucosis*: confirmed on post mortem and histologically.

The prevalence of disease and the low levels of management may make detection of an abnormal level of chicken deaths more difficult than in situations where poultry are intensively managed.

1.4. Environmental issues on South Tarawa

The environmental issues on South Tarawa represent a useful instance of an important health issues that has, according to Tiaeke et al. (2002) has been the subject of successful information/awareness programmes. *"Public awareness is progressing in many sections of the community both on outer islands and urban areas. This is done making use of workshops, public meetings, video shows, drama, radio and local newspaper and periodicals.*

Raising public awareness on pollution and waste issues can enormously deter community's understanding of the ways in which waste can be used to a great advantage.

[3] Saville, P., (n.d.), *The Animal Health Status of Kiribati*, SPC, 13pp

Conversely the problems that can be created through the inefficient management of waste is explicitly illustrated during public awareness meetings and workshops." [4]

Exploring the manner in which these programmes were undertaken with the relevant agencies and recall by the community was considered to be a potential source of useful insights into the methods employed.

1.5. Migratory birds on Kiritimati

Kiritimati (Christmas Island) was a significant candidate island for the investigation being an island in a different group to Tarawa (the Line Group) with a small influx of visitors through tourism and a growing population (by 1,684 (49%) between 2000 and 2005).

The island was also of interest given the number of migratory birds visiting the island. While the potential for such birds to act as a vector for AI/PI into Kiribati is undefined, it as considered that it would be useful to discuss the migratory species and recent experience with the Wildlife Service and to record the types of birds present.

1.6. Reflections on design factors

In large measure the factors identified in the preliminary research proved to be useful design criteria. Perhaps the one with least effect was the environmental issues on South Tarawa. There was recognised to have been a discerable improvement in the situation, particulalrly through the collection of metals (a fully laden barge wass in port at the time of the fieldwork exporting a significant quantitiy of car bodies aqnd other metals) but there is a cosidewrable plastcis problem yet to be addressed, readily apparent on the beaches of Betio. The was some evidence of the solid waste recovery programme through posters and recall of some people in interviews and discussions. However, this was less significant than might have been anticipated as the same techniques for information dissemination are already employment in health promotion by the MH&MS.

The decision to include Kiiritimati in the fieldwork paid an unexpected "dividend" in terms of the research findings when the researchers were introduced to the problem of poaching from bird reserves. This opens up a possible channel not otherwise seen in Kiribati as there is little exvidence of the mixing of wild birds with poultry as seen in the paddy fields in some Asian countries.

1.7. Key research questions/hypotheses/assumptions

The research is underpinned by a set of key research questions, hypotheses and assumptions:

(1) that all risk factors will be present to a greater or lesser extent;

[4] Tiaeke, N., et al. (2002), *Kiribati National Report To The World Summit On Sustainable Development*, 59pp DRAFT

(2) that existing modes and networks of communications, including established social structures, have a critical role to play in developing a concerted response to the threat posed by avian influenza;

(3) that the predominance of "village chicken" culture in the islands will present particularly challenges to identification and notification;

(4) that there will be sufficient variation in the circumstances between the five countries that appropriate measures and indicators will only be established through comparative analysis;

(5) that there are, to a greater or lesser extent, established programmes in related fields in each country that will provide information and/or models to assist implementation of effective Avian Influenza/Pandemic Influenza readiness and response.

1.8. Protection of human subjects

Dialogue Consultants subscribes to the principles of ethical socio-economic research developed by the RESPECT project under funding by the European Commission IST Programme[5] that:

- The research aims of any study should both benefit society and minimise social harm.
- Researchers should endeavour to balance professional integrity with respect for national and international law.
- Researchers should endeavour to ensure that research is commissioned and conducted with respect for, and awareness of, gender differences.
- Researchers should endeavour to ensure that research is commissioned and conducted with respect for all groups in society, regardless of race, ethnicity, religion and culture.
- Researchers should endeavour to ensure that research is commissioned and conducted with respect for underrepresented social groups and that attempts are made to avoid their marginalisation or exclusion.
- Researchers should endeavour to ensure that the concerns of relevant stakeholders and user groups are addressed.
- Researchers should endeavour to ensure that an appropriate research method is selected on the basis of informed professional expertise.
- Researchers should endeavour to ensure that the research team has the necessary professional expertise and support.
- Researchers should endeavour to ensure that the research process does not involve any unwarranted material gain OI loss for any participants.
- Researchers should endeavour to ensure factual accuracy and avoid falsification, fabrication, suppression or misinterpretation of data.

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[5] Dench, S., Iphafen, R., Huws, U., (2004), *An EU Code of Ethics for Socio-Economic Research*, RESPECT: Project Professional and Ethical Codes for socio-economic Research in the Information society: a project funded by the European Commission's Information Society Technologies (IST) Programme, Institute for Employment studies, Brighton 118 pp

- Researchers should endeavour to reflect on the consequences of research engagement for all participants, and attempt to alleviate potential disadvantages to participation for any individual or category of person.
- Researchers should endeavour to ensure that reporting and dissemination are carried out in a responsible manner.
- Researchers should endeavour to ensure that methodology and findings are open for discussion and peer review.
- Researchers should endeavour to ensure that any debts to previous research as a source of knowledge, data, concepts and methodology should be fully acknowledged in all outputs.
- Researchers should endeavour to ensure that participation in research should be voluntary.
- Researchers should endeavour to ensure that decisions about participation in research are made from an informed position.
- Researchers should endeavour to ensure that all data are treated with appropriate confidentiality and anonymity.
- Researchers should endeavour to ensure that research participants are protected from undue intrusion, distress, indignity, physical discomfort, personal embarrassment, or psychological or other harm.

2. IMPLEMENTATION

2.1. Islands visited

The research was undertaken in three significantly different island settings in the Gilbert Group and on Kiritimati (Christmas Island) in the Line Group.

In the Gilbert Group the research was conducted on:

- **South Tarawa:** being the major "urban" concentration in the country;
- **North Tarawa:** which has a "peri-urban" setting, with ready access across the Lagoon to South Tarawa; and
- **Maiana**: a "rural" island some 20 NM due south of South Tarawa.[6]

It was recognised that there are variations within and between the Northern, Central, and Southern Gilbert Group but advice was received that Maiana was suitably representative.

2.2. Duration and timing of fieldwork

The work programme allowed for two persons for 14 days each in the Gilbert Islands and two persons for seven days each on Christmas. The fieldwork was undertaken between 18th September and 11 October 2007.

2.3. Fieldwork logistics

Quantitative surveys were undertaken with care-givers and school children supervised by Murray Ellis.

The survey of **care-givers** was the key element of the work programme in establishing a quantitative baseline for the key behaviours related to AI/PI and related aspects. An approach was made to the Kiribati National Statistics Office to recruit people who acted as enumerators at the last Census as interviewers as it was considered that they would have both the required survey and language skills.

The care-giver survey was undertaken on four islands using a reproducible sampling technique appropriate to local circumstances. The basic sampling unit was the village. The selection on South Tarawa was designed to to cover the range of situations of both formal and informal (i.e. squatter) settlement.

A systematic sampling procedure was used within the villages in the absence of an accessible sampling frame (such as street addresses). This generated a non-random

[6] During project planning the possibility of flying to another island was considered. The final selection of Maiana was influenced in part by logistical issues. It was not possible to secure suitable flights (one of the two Air Kiribati planes was out of commission some of the time). Advice was received from the Secretary of the AI Task Force that Maiana would meet the requirements of the research design. An open ocean crossing was made in a small boat owned by Tianuare Taeuea to meet the timing requirements of the project.

but well distributed sample which was considered to be the most appropriate in the circumstances. The possibility of quota sampling procedure to ensure that the proportion of households with and without poultry was appropriately captured was considered but did not prove necessary. The villages/islands covered were:

Island	Village	Sample size
South Tarawa	Betio	40
	Bairiki	40
	Nanikai	40
	Eita	44
	Ambo	41
North Tarawa		60
Maiana		60
Kiritimati	Tabwakea	53
	London	30

The **school children** questionnaire was designed for supervised self-completion. Co-operation of the Education Department was sought so that the forms could be administered in the junior secondary schools on each of the islands visited. In some cases a researcher participated in the sessions when the forms were completed. In other cases, training in the administration of the survey was given to the teachers who administered the forms. Selected teachers were also interviewed using the targeted semi-structured interview schedule. The schools covered in the survey were:

Island	School	Sample size
South Tarawa	Betio	64
	TUC 1	71
	TUC 2	110
North Tarawa	Tabororio	40
Maiana	Animwarao	47
Kiritimati		72

The qualitative research was primarily be undertaken by Peter Phillips with Murray Ellis interviewing Agriculture Department staff, poultry farmers and teachers. Three core methods were used:

(1) semi-structured interviews used a standard set of questions about avian influenza and related behaviours with a range of customised questions.

(2) unstructured observation will be undertaken in the range of settings covered by the study segments covering households, schools, government offices, NGO offices, clinics, hotels, motels, cafes, food stalls, and rural and urban settlements. These observations used the checklists in Appendix 3.

(3) the focus group discussion using open ended questions and participatory tools principally getting the group to build up a collective “day in the life”.

Consistent with the participatory orientation of the overall approach the initial contacts with the AI Task Force, the health sector, and the NGOs all sought to ensure that the qualitative research was appropriately framed to ensure that the results were usable.

3. SEMI-STRUCTURED INTERVIEW PROTOCOLS

3.1. Cross-segment questions

The semi-structured interview used a standard introduction describing the study as an important study for the United Nations Children's Fund and explaining that UNICEF has been working with the government of Kiribati for some time to improve the health of children in Kiribati. The introduction explained that UNICEF had recently launched a new study on poultry and people's health. The study was prompted by events overseas where some people have caught a disease carried by poultry.

The core cross-segment questions were as follows:

Have you heard of "Bird Flu", also called "Avian Influenza"?

<IF YES> What can you tell me about "/Bird Flu"?

If birds carry an illness that you can catch from them, what are some of the things you can do when keeping poultry to reduce your risk of getting sick?

If birds carry an illness that you can catch from them, what are some of the things you can do when preparing/cooking poultry to reduce your risk of getting sick?

3.2. AI Task Force

The responsibilities of the Kiribati National Preparedness/Response to Emerging Disease Outbreak Committee (NPREDOC) include co-ordinating sectoral contributions to the National Strategic Plan (NSP) on Preparedness for Emerging Disease Outbreaks. The committee comprises:

1. Ministry of Health and Medical Services
   - Director of Public Health
   - Director of Hospital Services
   - Director of Nursing
2. Ministry of Environment, Lands and Agriculture Development
   - Head of Quarantine
3. Ministry of Information, Communication and Transport
   - Director of Aviation
   - Kiribati Port Authority - Manager
   - Kiribati Shipping Services - Manager

4 Ministry of Foreign Affairs

5 Attorney's General Office

6. Ministry of Finance and Economic Planning:
   - Kiribati Customs
7. Public Utilities Board
   - Water Engineer
   - Sanitation Engineer

The membership of the Avian Influenza Task Force includes:

- Dr Airam Metai — Ministry of Health & Medical Services
- Dr Tianuare Taeuea — Ministry of Health & Medical Services
- Dr Aloli Cati — Ministry of Health & Medical Services
- Ms Tanimakin Nooti — Ministry of Health & Medical Services
- Mr Kirieata Reretu — Ministry of Health & Medical Services
- Ms Rakentai Kairea-Kabotoa — Ministry of Agriculture (Animal Health)
- Mr. Itibwebwe — Air Kiribati
- Mr. Tebwaatoki Taawetia — Ministry of Education, Youth and Sports
- Ms. Veronica Karea — Airlines Agent
- Mr. Kimaere Abiata — Ministry of Agriculture (Quarantine)
- Ms Buraieta Tookare — BPA

Discussions with the Committee and the Task Force specifically explored:

- the role, relations and resourcing of the AI Task Force;
- their concepts for communications strategies for AI/PI preparedness; and
- the status of AI/PI preparedness planning in terms the following:

	Advocacy	Social mobilisation	Communication
Border controls			
Quarantine procedures			
Disaster planning			
Legal authority			
Organisational characteristics			

3.3. Advocacy

For the purposes of this investigation, advocacy was taken to be the action of delivering an argument to gain commitment from political and social leaders and to prepare a society for a particular issue.

The discussions explored the extent to which there has been any of the following steps:

- selection and organisation of information to create a convincing argument about AI/PI preparedness;
- delivery of this message through various interpersonal and media channels;
- public pressure to address AI/PI preparedness;
- acceptance by government and senior civil servants of the need to address the AI/PI issue; and
- actions undertaken to date in relation to AI/PI preparedness.

Where any actions are identified every endeavour was made to collect supporting evidence in the form of reports, or other documents.

3.4. Social mobilisation

Social mobilisation is the process of bringing together allies from various sectors to raise awareness of and demand for a particular development programme or policy change. The process mobilises allies at different levels in society to assist in the delivery of resources and services, to strengthen community participation for sustainability and self-reliance, and to bring about transparent and accountable decision-making.

The discussion explored:

- the extent to which NPREDOC, the AI Task Force, or any other agency has undertaken any steps to raise awareness of, and demand for, AI/PI preparedness with NGOs, local community leaders and/or others; and
- the perceptions of members of NPREDOC and the AI Task Force of the prime motivators for successful behavioural change which could be used in social mobilisation.

3.5. Project communications

It was not anticipated that any specific communications related to AI/PI wiould have been prepared or used in Kiribati to date, but this was verified with the Committee. In practice this project is designed to identify a suitable segmentation of the population so that at a later stage it will be possible to target specific groups and audiences with particular strategies, messages or training programmes; and reach them through various mass media and interpersonal channels, both traditional and non-traditional.

3.6. Public awareness campaign on Tarawa

According to Tiaeke et al. (2002) there have been successful information/awareness programmes on the environmental issues on South Tarawa. Lessons learned from these programmes were sought during the key informant interviews.

3.7. Media and government communications officials

Five topics will be investigated through discussions with representatives of the media and government communications officials:

(1) whether they are aware of AI and related preventative behaviours (cross segment questions);

(2) what media are available across the country (mode, frequency and reach) and extent of access to international media; and

(3) lessons learned from public health information campaign and emergency management information experience including programmes related to environmental issues on Tarawa, cyclones and health matters such as dengue;

(4) results of/lessons learned from government projects and programmes seeking to develop social mobilisation; and

(5) their concepts for communications strategies for AI/PI preparedness.

3.8. Teachers

The semi-structured interviews with teachers were designed to explore the following:

(1) whether they were aware of AI and related preventative behaviours (cross segment questions);

(2) what was the general standard of hygiene habits of pupils particularly in terms of hand washing (both frequency and access to water, soap, and/or disinfectant);

(3) were children sent to school when they have normal flu/respiratory infections;

(4) what resources would assist them to educate pupils on AI/PI.

3.9. Public Health workers

Interviews were undertaken with nurses and medical assistants in the Kiribati health system to cover the following topics:

(1) whether they were aware of AI and related preventative behaviours (cross segment questions);

(2) their understanding of sources used by the community for health information

(3) potential sources of negative rumours/misinformation about health-related matters;

(4) how they currently handled an outbreak of disease in their communities identifying policies and practical procedures;

(5) what they advocated to households to manage normal flu/respiratory infections

(6) how they would diagnose a case of AI – ability to specify key symptoms;

(7) their views on the process which could be followed on diagnosis of a case of AI/PI and suggestions for control and containment of AI.

3.10. Animal Health workers

Interviews were undertaken with animal health workers to cover:

(1) whether they were aware of AI and related preventative behaviours (cross segment questions);

(2) availability to community of information on poultry health;

(3) potential sources of negative rumours/misinformation about poultry keeping and diseases;

(4) existing monitoring programmes on health of poultry around the country and disease/death reporting procedures and, if available, reported incidents;

(5) current health status of poultry including prevalent diseases (checked against Saville's survey results from 1992-4 – explore comparable/confounding symptoms to AI from other diseases seen in Kiribati);

(6) how they currently handle an outbreak of disease in poultry;

(7) how would recognise an outbreak of AI;

(8) their views on the process which could be followed on diagnosis of a case of AI/suggestions for control and containment.

3.11. Food handlers in cafés, hotel/motels, food stalls

The semi-structured interviews with food handlers were designed to explore the following matters:

(1) whether they were aware of AI and related preventative behaviours (cross segment questions);

(2) use of poultry covering all aspects from sourcing/purchase, transport, slaughtering, storing, and cooking. Specific questions from the quantitative surveys were used as prompts including those related to safe poultry handling practices and hand-washing.

3.12. Community groups and community leaders

The community groups (including churches and NGOs) and community leaders were seen as a potentially very significant element in social mobilisation and a source of informed commentary on a range of matters based on both the organisations' activities and the personal experiences of the members. It was anticipated that they would be able to assist in the organisation of focus groups to canvass care-givers on issues that are better dealt with in a qualitative rather than quantitative setting. In practice this was typically arranged through the Womens Interest Workers.

The topics explored with the NGOs were:

- awareness of AI and related behaviours in prevention and reporting;
- suggestions for control and containment of AI/PI;
- key values and cultural norms to which the materials and messages must conform;
- what would be controversial/uncomfortable/offensive/irritating topics/ modes of expression which should be avoided in developing the communications programme strategy and materials;
- identification of at-risk segments;
- perceptions of prime motivators for successful behavioural change;
- sources used by the community for health information;
- potential sources of negative rumours/misinformation about health-related matters;
- what would make AI/PI information materials easy to understand?
- what complementary actions need to be undertaken to ensure that recipients can use the information in their own lives?
- who would be respected/credible authorities/change agents to promote messages about AI/PI in the community?
- what health programmes do they have, or have recently been promoting?
- what are their expectations of their role in AI/PI preparedness and in the event of an AI/PI pandemic what resources do they have available for deployment in education/awareness – how could they participate in or support a communications programme?

3.13. Unstructured observation checklists

1. At any time during the household visit record spontaneous observations of…<MORE THAN ONE IS POSSIBLE >

- ☐ Children playing with or handling poultry
- ☐ Poultry in living areas
- ☐ Barriers at doors
- ☐ Safe disposal of used tissues
- ☐ Coughs and sneezes covered (by hand/hanky/tissue)
- ☐ Wears gloves when handling chickens
- ☐ Barefoot in area with chickens
- ☐ Washes hands with soap and water after handling poultry
- ☐ Washes eggs before cooking

AI/PI Communications Baseline Research:
Kiribati: Child Care-giver survey
Poultry and people's health survey
Consent Form & Information Sheet

Hallo, my name is <state name>. I am visiting you today to ask the person who looks after the children in the household to help us in an important study for the United Nations Children's Fund. We are surveying a number of people in the village. We are stopping at regular intervals along the road asking people to take part.

Let me first tell you what the study is about. UNICEF has been working with the government of Kiribati for some time to improve the health of children in Kiribati. It is now doing a new study on poultry and people's health.

What I would like to do is to first ask for your permission to carry out this interview. I will then ask you some simple questions about poultry keeping and health. Taking part is entirely voluntary. It will take about 20-30 minutes. The results will come out in a report but no-one will know what you told us today because it will be added to all the other interviews. We will not publish your name, or release the answers you give us to anyone else. Your answers will be combined with everyone else's so no-one can tell who said what.

Are there any questions you would like to ask about the study or the survey?

<write in topics asked> _____

_____

If you are willing to take part I have to get you to sign below to show you understand and agree.

This document is to certify that I, <write in name>_____

hereby freely agree to take part in this study and that:

- The research project and my role in it have been fully explained to me by the interviewer
- I have been given a chance to ask questions about the study and the survey, and I am happy with the answers I have been given.
- I understand that my name is not recorded on the form.
- My answers will not be shown or given to anyone outside the research team.
- I understand that taking part in this research project is voluntary and that I am free to stop the interview at any time.

Date:_____ Signature:_____

I, the undersigned, have fully explained the investigation to the interviewee.

Date: _____

Signature of researcher:_____

Village _____ (1) Island _____ (2)

Questionnaire No:_____(3) Country _____ (4)

Household composition

1 How many people live regularly in your household? WRITE NUMBER ..... _____(5)

2 Which age groups do they fall into?

Years	Male	Female	Total
0-4	(6)	(7)	(8)
5-9	(9)	(10)	(11)
10-14	(12)	(13)	(14)
15-19	(15)	(16)	(17)
20-29	(18)	(19)	(20)
30-39	(21)	(22)	(23)
40-49	(24)	(25)	(26)
50-59	(27)	(28)	(29)
60 and over	(30)	(31)	(32)

Household stock

3 Do you keep any pigs, chickens or ducks?

☐ No [go to question 6 on next page]
☐ Yes (33)

4 How many pigs, chickens or ducks do you have?

Animal	Number	
Pigs		(34)
Chickens		(35)
Ducks		(36)

5 Where are the chickens kept during the day and night <WRITE IN "1" FOR MAIN LOCATION, "2" FOR SECONDARY IF USED >

Birds kept	Day	Night
Free range outdoors	(37)	(38)
Outdoors in a partially enclosed area (top open)	(39)	(40)
Outdoors in a completely enclosed area (top, sides and bottom)	(41)	(42)
Completely indoors	(43)	(44)
Other	(45)	(46)

OBSERVATION: Confirmed?

☐ Yes
☐ No (47)

6 In the last month, have any poultry entered your living areas (cooking, sleeping, etc.)?

- ☐ No
- ☐ Yes (48)

7 How risky to your health do you think it is to let poultry walk around in your living areas? Do you think it would be….

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (49)

<GO TO QUESTION 10 IF DOES NOT KEEP CHICKENS OR DUCKS (SEE QU3)>

8 Who in the household does the following tasks? <WRITE IN "1" FOR MAIN PERSON AND "2" FOR OTHER(S) FOR EACH TASK>

Task	Male child	Female child	Male adult	Female adult	No-one	
Feeding chickens/ducks						(50)
Cleaning cages or roosts						(51)
Disposing of dead birds						(52)
Killing chickens/ducks						(53)
Cleaning innards						(54)
Plucking						(55)
Cooking						(56)
Collecting eggs						(57)
Washing eggs						(58)

9 Do you usually wear footwear when you are looking after the chickens and/or ducks? <only one answer possible>

- ☐ No, (go to question 11)
- ☐ Yes

10 What footwear do you usually wear when you are looking after the chickens and/or ducks? <only one answer possible>

- ☐ Jandals/ open sandals (use local term)
- ☐ Boots/shoes
- ☐ Other <write in>_____ (59)

11 Have you done any of the following in the last month? <**ASK EACH ONE**, TICK FOR YES>

- ☐ Bought or been given live poultry (60)
- ☐ Sold or given away live poultry (61)
- ☐ Bought or been given freshly-slaughtered (uncooked) chicken (62)
- ☐ Sold or given away freshly-slaughtered (uncooked) chicken (63)
- ☐ Seen your neighbour's poultry mixing with your poultry (64)
- ☐ Seen wild birds mixing with your poultry (65)
- ☐ Had any of your poultry go missing (66)
- ☐ Had any of your poultry die from sickness (if had not, go to Question 15) (67)

12 What did you do with the bird that died from sickness? <ONLY ONE ANSWER>

- ☐ Buried it
- ☐ Burned it
- ☐ Fed to household animals
- ☐ Cooked it for food
- ☐ Gave it away
- ☐ Put in rubbish collection
- ☐ Other <WRITE IN> _____ (68)

13 Did you report the bird dying from sickness to anyone?

- ☐ No [go to question 15]
- ☐ Yes (69)

14 To whom did you report the dead bird?

- ☐ <WRITE IN> _____ (70)

Hand washing

15 How many times a day do you usually wash your hands? WRITE NUMBER .... _____ (71)

16 Before or after what activities do you usually wash your hands? <AFTER EACH RESPONSE ASK: "Any other time?">

- ☐ Before eating (72)
- ☐ After working outside (73)
- ☐ Before going to bed (74)
- ☐ After coughing (75)
- ☐ After using the toilet (76)
- ☐ After sneezing (77)
- ☐ After tasks with chickens and/or ducks (78)
- ☐ Other <WRITE IN OTHER TIMES HERE>_____ (79)

17 How do you usually wash your hands? <TICK ONLY ONE>

- ☐ With water only (80)
- ☐ With water and soap (81)
- ☐ With water and disinfectant (82)
- ☐ Other <WRITE IN THE OTHER WAY HERE> _____ (83)

18 How regularly do you wash your hands straight after contact with chickens or ducks? <only one answer possible>

- ☐ Every time
- ☐ Most times
- ☐ Some times
- ☐ Rarely
- ☐ Never (84)

OBSERVATION: Can you see ready access to soap and water for hand washing?

- ☐ Yes
- ☐ No (85)

Cooking poultry

19 About how many times did you or someone in your family cook chicken or duck for food in the last month?

- ☐ None
- ☐ Don't know
- ☐ <WRITE IN NUMBER> _____ (86)

20 What ways do you usually cook poultry? <AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Grilled (87)
- ☐ Roasted (88)
- ☐ Boiled (89)
- ☐ Umum (use local term) (90)
- ☐ Other <WRITE IN> _____ (91)

21 How do you tell when poultry is cooked?

WRITE IN_____ (92)

22 How risky to your health do you think it is to eat cooked poultry when the meat is still pink?

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (93)

23 If birds carry an illness that you can catch from them, what are some of the things you can do when preparing and cooking poultry to reduce your risk of getting sick? <RECORD ORDER OF RESPONSE (1, 2, 3 etc). AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Wear gloves (94)
- ☐ Boil entire bird with feathers on (95)
- ☐ Wash hands with soap and water after preparation (96)
- ☐ Separate raw meat from cooked meat (97)
- ☐ Use different chopping boards for raw and cooked food (98)
- ☐ Wash the area where poultry meat is prepared (99)
- ☐ Don't know (100)
- ☐ Other <WRITE IN> _____ (101)

24 Did you or someone in your family cook eggs for food in the last month?

- ☐ No
- ☐ Yes
- ☐ Don't know (102)

25 What ways do you typically cook eggs? <AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Boiled (103)
- ☐ Fried (104)
- ☐ Scrambled (105)
- ☐ Omelette (106)
- ☐ Don't know (107)
- ☐ Other <WRITE IN> _____ (108)

26 If you boil eggs, do you usually have them soft-boiled or cook them till they are hard?

- ☐ Soft- boiled
- ☐ Hard-boiled (109)

27 What are some of the things you can do when preparing eggs to reduce the risk of getting sick from any illnesses carried by the birds? <AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Wash eggs with soap (110)
- ☐ Boil until completely solid (111)
- ☐ Don't know (112)
- ☐ Other <WRITE IN> _____ (113)

Human flu

28 What are the signs when someone has the flu? <AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ High temperature/fever (114)
- ☐ Chills (115)
- ☐ Sore throat (116)
- ☐ Coughs and sneezes (117)
- ☐ Don't know <WHEN FIRST RESPONSE> (118)
- ☐ Other <WRITE IN> _____ (119)

29 How does flu pass from one person to another? <AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ By coughs and sneezes (120)
- ☐ By contact with surfaces someone has sneezed or coughed on (121)
- ☐ Don't know <WHEN FIRST RESPONSE> (122)
- ☐ Other <WRITE IN> _____ (123)

30 Has a child or anyone in your family fallen sick with a high fever, chills, sore throat, and cough in the last month?

- ☐ No [go to question 32]
- ☐ Yes (124)

31 If yes, what did you do immediately? <RECORD ORDER OF RESPONSE "1" FOR FIRST, "2" FOR SECOND, ETC. AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Nothing, just waited for a few days (125)
- ☐ Saw a doctor or nurse (126)
- ☐ Took medicine bought without seeing a doctor or nurse (127)
- ☐ Used traditional or herbal medicine (128)
- ☐ Saw traditional health practitioner (129)
- ☐ Minimised contact between sick family member and others (130)
- ☐ Made sure sick family member kept physical distance (> 1 m) from everyone (131)
- ☐ Made sure sick family member covered coughs and sneezes (132)
- ☐ Disposed of tissues safely (133)
- ☐ Cleaned all contaminated surfaces (134)
- ☐ Don't know <WHEN FIRST RESPONSE> (135)
- ☐ Other <WRITE IN> _____ (136)

32 If you or one of your family falls sick with high fever, chills, sore throat, and cough, what would you do immediately? <RECORD ORDER, AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Nothing, just wait for a few days (137)
- ☐ See a doctor or nurse (138)
- ☐ Take medicine bought without seeing a doctor or nurse (139)
- ☐ Use traditional/herbal medicine (140)
- ☐ See traditional health practitioner (141)
- ☐ Minimise contact between sick family member and others (142)
- ☐ Make sure sick family member kept physical distance (> 1 m) from everyone (143)
- ☐ Make sure sick family member covered coughs and sneezes (144)
- ☐ Dispose of tissues safely (145)
- ☐ Clean all contaminated surfaces (146)
- ☐ Don't know <WHEN FIRST RESPONSE> (147)
- ☐ Other <WRITE IN> _____ (148)

33 When you are sick with a flu-like illness, how risky for others do you think it would be if you:

.....did nothing, just waited for a few days? Do you think it would be…

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (149)

.....don't cover your coughs and sneezes? Do you think it would be…

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (150)

34 When you are sick with a flu-like illness, how beneficial would if be if you:

.....stayed home till you were better? Do you think it would be…

- ☐ No benefit at all
- ☐ Some benefit
- ☐ Big benefit
- ☐ Don't know (151)

.....stopped other people coming close (under 1 metre) to you? Do you think it would be…

- ☐ No benefit at all
- ☐ Some benefit
- ☐ Big benefit
- ☐ Don't know (152)

Flu following contact with dead/sick birds

35 Has a child or anyone in your family fallen sick with a high fever in the last month after contact with sick or dead birds?

- ☐ No [go to question 37]
- ☐ Yes (153)

36 If yes, what did you do immediately? < RECORD ORDER OF RESPONSE. AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Nothing, just waited for a few days (154)
- ☐ Saw a doctor or nurse (155)
- ☐ Took medicine bought without visiting a doctor or nurse (156)
- ☐ Saw a traditional health practitioner (157)
- ☐ Used traditional/herbal medicine (158)
- ☐ Don't know <WHEN FIRST RESPONSE> (159)
- ☐ Other <WRITE IN> _____ (160)

37 If you or one of your family falls sick with high fever after contact with sick or dead birds, what would you do immediately? <RECORD ORDER OF RESPONSE (1, 2, 3 etc.) AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Nothing, just wait for a few days (161)
- ☐ See a doctor or nurse (162)
- ☐ Take medicine bought without visiting a doctor or nurse (163)
- ☐ Visit a traditional medicine practitioner (164)
- ☐ Use traditional/herbal medicine (165)
- ☐ Don't know <WHEN FIRST RESPONSE> (166)
- ☐ Other <WRITE IN> _____ (167)

38 When a child has a fever after coming into contact with a sick/dead bird, how risky do you think it would be if you leave the child at home for a few days to see what happens. Would it be…

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (168)

Major flu outbreak

39 If many people are becoming sick from a dangerous flu, what are you going to do to prevent you and your family catching this flu from others? <RECORD ORDER OF RESPONSE (1, 2, 3 etc). AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Nothing, just wait for a few days (169)
- ☐ Avoid crowded places (170)
- ☐ Wash hands frequently (171)
- ☐ Stop my children playing with other children (172)
- ☐ Only visit a small number of friends and family who do not visit others (173)
- ☐ Other <WRITE IN> _____ (174)

40 How risky would be if many people are becoming sick from a dangerous flu if you:

.....still visit crowded places

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (175)

.....allow your children to play with poultry?

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (176)

.....allow your children to play with many other children

- ☐ No risk at all
- ☐ Some risk
- ☐ Very risky
- ☐ Don't know (177)

41 If many people are becoming sick from a dangerous flu….

(a) would you still visit many of your friends and family?

- ☐ Don't know (go to 41b)
- ☐ No (go to 41b)
- ☐ Yes (178)

Would you still do this if the government advised against it?

- ☐ Don't know
- ☐ No
- ☐ Yes (179)

(b) would you still go to church?

- ☐ Don't know (go to 41c)
- ☐ No (go to 41c)
- ☐ Yes (180)

Would you still do this if the government advised against it?

- ☐ Don't know
- ☐ No
- ☐ Yes (181)

(c) would you still send your children to school?

- ☐ Don't know (go to question 42)
- ☐ No (go to question 42)
- ☐ Yes (182)

Would you still do this if the government advised against it?

- ☐ Don't know
- ☐ No
- ☐ Yes (183)

42 How could you protect your children from a dangerous flu passed on from poultry? <RECORD ORDER OF RESPONSE (1, 2, 3 etc.). AFTER EACH RESPONSE ASK: "Anything else?">

- ☐ Keep children away from poultry (184)
- ☐ Teach them not to play with or near poultry (185)
- ☐ Teach them to wash their hands with soap (186)
- ☐ Don't know (187)
- ☐ Other <WRITE IN> _____ (188)

43 Have you received any information about keeping healthy from a health worker in the last three months?

- ☐ No [go to question 47]
- ☐ Yes (189)

44 What was the information about?

WRITE IN_____

_____ (190)

45 Who could you trust if you wanted to find out more about how to protect yourself from a dangerous flu that could be passed on from poultry to people ?

- ☐ Health professional (191)
- ☐ Traditional healer (192)
- ☐ NGO <ASK WHICH ONE AND WRITE IN> _____ (193)
- ☐ Other <WRITE IN> _____ (194)

46 What have you done in response to this information?

WRITE IN_____

_____ (195)

47 Have you heard of “Bird Flu”, also called “Avian Influenza”?

- ☐ No [go to question 49]
- ☐ Yes (196)

48 <IF YES> What can you tell me about “Bird Flu”? <AFTER EACH RESPONSE ASK: "Anything else?">

_____ (197)

_____ (198)

_____ (199)

_____ (200)

_____ (201)

Personal profile

49 Tick box to record respondent's gender

- ☐ Female
- ☐ Male (202)

50 In which of the following age groups are you? <IF NO RESPONSE, MAKE AN ESTIMATE>

- ☐ 10-19 years
- ☐ 20-29 years
- ☐ 30-39 years
- ☐ 40-49 years
- ☐ 50-59 years
- ☐ 60 years and over (203)

51 How many years of schooling/education did you have? <WRITE NUMBER> _____ (204)

52 What is your religion? <WRITE IN> _____ (205)

53 What is your ethnic group? <ONLY ASK IF NOT APPARENTLY I-KIRIBATI> _____ (206)

54 What is the job/occupation of the main breadwinner in the household?

<WRITE IN>_____ (207)

TELL THEM ABOUT AVIAN INFLUENZA/HAND OVER FLYER

THANK FOR PARTICIPATION

AI/PI Communications Baseline Research:
Kiribati: School children survey

Poultry and people's health survey
Consent Form & Information Sheet

Your school has agreed to take part in an important study for the United Nations Childrens Fund which could help the long term health of people in Kiribati.

UNICEF has been working with the government of Kiribati for some time to improve the health of children in Kiribati. It is now doing a new study on poultry and people's health.

What you are asked to do is answer some simple questions about poultry keeping and health. Taking part is entirely voluntary. If you don't want to fill it in, that's ok. If you do it will take about 5-10 minutes. Your teacher can help you if you have any questions about filling in the form.

The results will come out in a report but no-one will know what you told us today because it will be added to all the other surveys. We will not publish your name, or release the individual information you give us to anyone else.

If you are willing to take part write your name on the line below and then sign at the bottom of this page to show you that understand and agree.

This document is to certify that I, _____

hereby freely agree to take part in this study and that:

- The research project and my role in it have been fully explained to me by the teacher
- I have been given a chance to ask questions about the study and the survey, and I am happy with the answers I have been given.
- I understand that my name is not recorded on the form.
- My answers will not be shown or given to anyone outside the research team.
- I understand that taking part in this research project is voluntary and that I am free to stop the interview at any time.

Date: _____

Signature: _____

School _____ (1) Island _____ (2)

Questionnaire No: _____ (3) Country _____ (4)

Your household

1 How many people live regularly in your household? <WRITE NUMBER> ..... _____ (5)

2 Which age groups do they fall into? <WRITE THE NUMBERS IN THE BOXES>

Years	Male	Female	Total
0-14	(6)	(7)	
15 and over	(8)	(9)	

Household stock

3 Does your family keep any pigs, chickens or ducks? <TICK ONE>

☐ No [go to question 8]
☐ Yes (10)

4 How many pigs, chickens or ducks do you have? <WRITE THE NUMBERS IN THE BOXES>

Animal	Number	
Pigs		(11)
Chickens		(12)
Ducks		(13)

5 Do you help with looking after your chickens or ducks? <TICK ONE>

☐ No [go to question 8]
☐ Yes (14)

6 Which of these tasks do you do, or help with? <TICK BOX FOR EACH ONE YOU DO>

☐ Feeding chickens/ducks (15)
☐ Cleaning cages or roosts (16)
☐ Disposing of dead birds (17)
☐ Slaughtering chickens/ducks (18)
☐ Cleaning innards (19)
☐ Plucking feathers (20)
☐ Cooking (21)
☐ Collecting eggs (22)
☐ Washing eggs (23)

7 What do you usually wear on your feet when you are looking after the chickens and ducks <TICK ONLY ONE >

☐ Nothing, go barefoot
☐ Jandals/open sandals
☐ Other <WRITE IN> _____ (24)

8 Have you come into direct contact with any chickens or ducks in the last week? <TICK "YES" IF YOU HAVE TOUCHED A BIRD OR BIRD DROPPINGS WITH YOUR HANDS OR FEET >

☐ No [go to question 10]
☐ Yes (25)

9 IF Yes, where did this happen? <TICK BOX FOR EACH ONE YOU HAD DIRECT CONTACT>

- ☐ In our house when a duck or chicken came inside (26)
- ☐ At school (27)
- ☐ While playing outside (28)
- ☐ When helping my family care for our chickens and/or ducks (29)
- ☐ When helping to get a chicken or duck ready to cook (30)

Washing hands

10 Tick the box which shows the times when you almost always wash your hands during the day <TICK EACH ONE YOU ALMOST ALWAYS DO>

- ☐ Only when they are dirty (31)
- ☐ After eating (32)
- ☐ After playing outside (33)
- ☐ Before going to bed (34)
- ☐ Before eating (35)
- ☐ After coughing (36)
- ☐ After playing with chickens or ducks (37)
- ☐ After using the toilet (38)
- ☐ After sneezing (39)
- ☐ After tasks with chickens and/or ducks (40)
- ☐ Other <WRITE IN OTHER TIMES HERE> (41)

11 How do you usually wash your hands? <TICK ONLY ONE>

- ☐ With water only (42)
- ☐ With water and soap (43)
- ☐ With water and disinfectant (44)
- ☐ Other <WRITE IN THE OTHER WAY HERE> _____ (45)

Human flu

12 Have you been sick with a high fever, chills, sore throat, and cough in the last month?

- ☐ No [go to question 15]
- ☐ Yes (46)

13 What did your parents and you do while you were sick? <TICK EACH ONE THAT WAS DONE>

- ☐ Nothing, just waited for a few days (47)
- ☐ You saw a doctor or nurse (48)
- ☐ Took medicine bought without seeing a doctor or nurse (49)
- ☐ Gave you traditional or herbal medicine (50)
- ☐ You saw traditional healer (51)
- ☐ Kept you away from the rest of your family, friends and others (52)
- ☐ Made sure you kept at least a metre from everyone (53)
- ☐ Made sure you covered up your coughs and sneezes (54)
- ☐ Don't know (55)
- ☐ Other <WRITE IN> _____ (56)

14 What do you do when you sneeze or cough? <TICK ONLY ONE>

- ☐ Nothing
- ☐ Cover mouth or nose with hand
- ☐ Cover mouth or nose with arm
- ☐ Use a tissue or handkerchief
- ☐ Other <WRITE IN> _____ (57)

Major flu outbreak

15 If many people are becoming sick from a very bad flu that people said came from poultry, what could you do to protect yourself? <TICK WHETHER YOU THINK EACH ONE OF THESE STATEMENTS IS TRUE, NOT TRUE, OR DON'T KNOW>

What you could do	True	Not true	Don't know	
Not eat chicken or duck				(58)
Not touch chickens or ducks				(59)
Not play with or near chickens or ducks				(60)
Wash your hands with soap/disinfectant after touching chickens or ducks				(61)
Stay away from chicken or duck droppings				(62)
Wear a mask over your face when near chickens or ducks				(63)
Stay away from people who have the flu				(64)
Burn dead chickens				(65)
Keep chickens and ducks away from living areas at home				(66)
Report sick or dead chickens and ducks				(67)
Stop going to church				(68)
Stop going to school				(69)

16 How risky do you think it would be if many people are becoming sick from a very bad flu from poultry if you:

.....did not wash you hands after handling chickens or ducks?

- ☐ No risk at all
- ☐ Some risk
- ☐ Big risk
- ☐ Don't know (70)

.....did not report it when you found a sick/ dead chicken or duck?

- ☐ No risk at all
- ☐ Some risk
- ☐ Big risk
- ☐ Don't know (71)

.....visited many of your friends and family?

- ☐ No risk at all
- ☐ Some risk
- ☐ Big risk
- ☐ Don't know (72)

17 Have you heard of “Bird Flu”?

☐ No [that is the last question you need to answer]
☐ Yes

18 <IF YES> Write down what you know about “Bird Flu”?

_____ (73)

_____ (74)

_____ (75)

THANK YOU

dialogue
consultants ltd

Research - Planning - Consultation - Communications
Auckland and Wellington, Aotearoa-New Zealand