Operation Safe Haven: an evaluation of health surveillance and monitoring in an acute setting

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Abstract

From May to June 1999, 3,920 ethnic Albanians from Kosovo arrived in Australia as part of *Operation Safe Haven*. These people were evacuated from refugee camps in the former Yugoslav Republic of Macedonia. Initial processing in Australia occurred at East Hills Reception Centre, and accommodation for the duration of stay was provided in eight Haven Centres in five States. The arrival of a large number of refugees in a short time frame is unprecedented in Australia. A health surveillance system was developed and critical health data were collected to assess health status and needs, plan care, monitor for potential outbreaks of communicable diseases, track service use, to meet international reporting requirements and document our response to this crisis.

In this article the health surveillance system is evaluated and suggestions are offered for the formulation of specific guidelines necessary for health surveillance in acute settings. *Commun Dis Intell* 2000;24:21-26.

Introduction

As the conflict in Kosovo escalated in early 1999, hundreds of thousands of ethnic Albanians were driven from their homes into neighbouring countries. In response to a request from the United Nations High Commissioner for Refugees, Australia agreed to provide temporary safe haven for 4,000 refugees at short notice. This was the beginning of *Operation Safe Haven*, the largest single humanitarian evacuation that Australia has ever undertaken.

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Evacuation to Australia was voluntary. Over a 6 week period from 7 May 1999, a total of 3,920 refugees were flown to Australia in 11 groups, ranging in size from 50 to 450 people, arriving at 2-7 day intervals. Each group of evacuees was received at East Hills Reception Centre in Sydney before transfer to Haven Centres for the duration of their stay. The Centres were at Army bases in five Australian States and included East Hills once its role as a Reception Centre had been completed.

Advance planning for health services was based on available information on refugee health status in Kosovo and in the Macedonian camps.[1, 2, 3] This indicated that the main health issues would be tuberculosis, chronic conditions where management had deteriorated or lapsed over recent times, and pregnancies with little or no ante-natal care.

Although international standards were available,[4, 5, 6] there were no pre-existing Australian guidelines for the establishment of health surveillance in a rapid response setting. Screening for immediate communicable disease concerns was established early. As the need for more formalised reporting systems and comprehensive monitoring of evacuee health data became apparent, we were invited to establish a health surveillance and monitoring system to meet this need. This article describes the health aspects of *Operation Safe Haven*, documents the initial development of the system and the difficulties encountered, and makes recommendations for improving our response to future crises of this kind.

Health aspects of *Operation Safe Haven*

Prior to departure from the Macedonian camps, refugees were assessed for fitness to travel by Australian doctors temporarily based in Skopje. Health checks and immigration formalities were undertaken at the Reception Centre before transfer to Haven Centres.

Shortly after arrival at the Reception Centre, all evacuees completed a triage questionnaire devised by the South Western Sydney Area Health Service *Operation Safe Haven* Working Group. Evacuees were asked to indicate if they had specific symptoms (cough, sputum, blood in the sputum, fever, night sweats, diarrhoea, rash), needed to see a doctor, or were in need of urgent dental treatment. Triage nurses reviewed responses to identify those with urgent health problems, or possible communicable diseases, and to prioritise those in need of tuberculosis screening.

Immigration health screening of the evacuees was undertaken by Health Services Australia (HSA), the national organisation contracted by the Department of Immigration and Multicultural Affairs (DIMA) to undertake immigration health screening for onshore applicants. Screening was in accordance with a protocol specifically developed for the Kosovar evacuees by the National Centre for Disease Control in consultation with DIMA, HSA and the Communicable Diseases Network Australia New Zealand (CDNANZ).

All evacuees had a physical examination and urinalysis. Those identified as having health problems in need of immediate care were referred to the on-site primary health care clinic. Evacuees aged 16 years or older, except for pregnant women, had a chest X-ray to screen for tuberculosis. Children less than 16 years of age with a cough or other symptom consistent with tuberculosis also had a chest X-ray. No other routine screening tests were undertaken but primary care medical practitioners were encouraged to have a low threshold of suspicion for testing for possible communicable diseases.* Laboratory confirmed notifiable conditions were reported in the usual way to the New South Wales Notifiable Diseases Database.

Evacuees with possible tuberculosis were further investigated and managed under the clinical supervision of the local specialised tuberculosis clinic. A range of other medical, dental, public health, mental health and counselling services were provided through the South Western Sydney Area Health Service and the New South Wales Service for the Treatment and Rehabilitation of Torture and Trauma Survivors (STARTTS). Services were either on-site or at a nearby public hospital (Liverpool Hospital).

Interpreter services were provided on-site and were critical to all aspects of health screening and service provision. Written information and questionnaires were translated into Kosovar Albanian and interpreters assisted those with language or literacy difficulties.

A medical record, containing hard copies of all health documentation, was created for each evacuee at the Reception Centre and forwarded to the relevant Haven Centre medical service when the evacuee was transferred.

Immunisation was undertaken at the Haven Centres, where follow-up and continuing health care, including torture and trauma counselling and maternal and child health services, were also provided. Those with active tuberculosis were only transferred once they were stabilised on treatment and considered to be non-infectious.

Aims of the Surveillance System

The aims of the surveillance system were established following consultation with the Commonwealth Department of Health and Aged Care, relevant State health authorities, and medical service providers at the Reception and Haven Centres, and reflected the identified health data needs for the agencies involved in providing health care.

Primary aims were to:

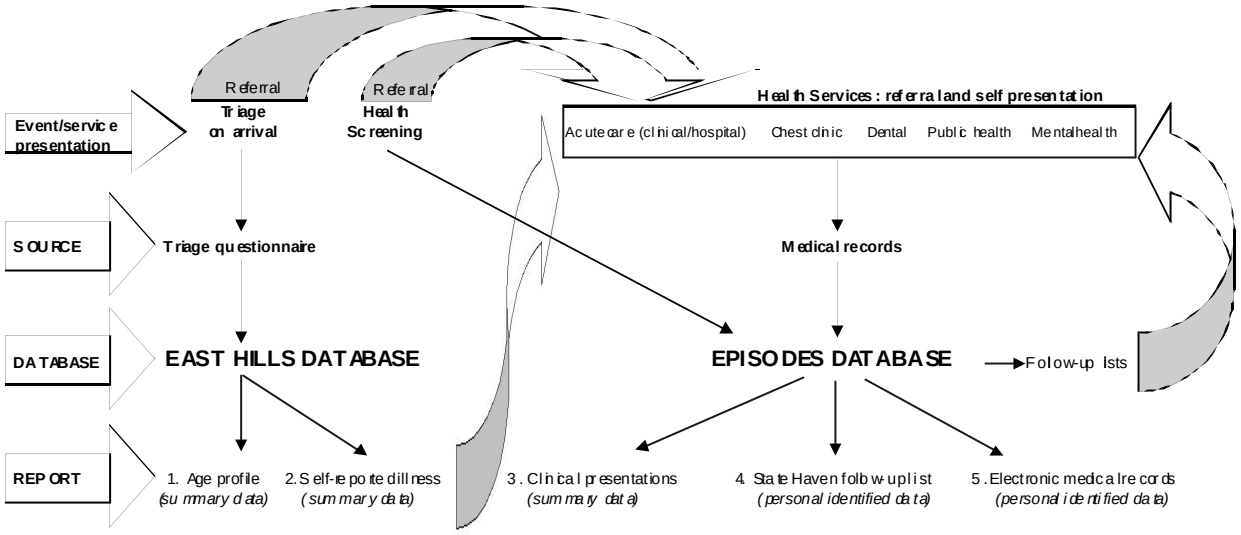
- determine the health status of incoming evacuees to plan for appropriate care;
- ensure timely ascertainment of active cases of tuberculosis; and
- monitor for potential outbreaks of communicable diseases.

Secondary aims were to:

- document health status over the duration of stay, including communicable disease incidence, prevalence of chronic disease, mortality and births;

* Pregnant women were offered routine ante-natal screening for hepatitis B (HBsAg), rubella immunity, syphilis (VDRL/TPHA), and (where indicated) HIV as well as a full blood count, blood group and midstream urine examination. Pregnant women did not have a chest X-ray, but were examined by a chest physician. In the absence of clinical evidence of tuberculosis, pregnant women were allowed to travel on to their Haven Centre, but were required to sign an undertaking to have a chest X-ray following the birth of the baby.

Figure 1. Health surveillance data sources and reports generated



- record preventive health care activities, such as immunisation;
- collate health status data for repatriation; and
- provide data to assist in monitoring costs of health services for the evacuees.

The secondary aims assumed that data collected and collated at the Reception Centre would form a core data set that would be transferred to, and maintained at, the Haven Centres.

Methods

The Kosovar Refugee Medical Surveillance Group, comprising representatives of the Commonwealth Department of Health and Aged Care and DIMA, State health authorities and health service providers at the Reception and Haven Centres, was established as a communication forum for surveillance and other health issues. Following a rapid assessment of data needs and the quality of available health service information, a surveillance system was developed with mechanisms to link data from a number of sources (Figure 1).

The DIMA database linked personal information (name, date of birth and sex) with the 'CampID' number. This was a unique identifier given to each evacuee on arrival at the Reception Centre. It comprised the flight number (1 to 11) combined with a number allocated sequentially from 1 (for example, 5/012 was the 12th person from Flight 5). These data were downloaded from the DIMA database into Excel 97 for incorporation in the 'East Hills' database.

Responses from the triage questionnaires were entered into the 'East Hills' database, which was originally created in Access 97 and subsequently converted to Excel 97 to facilitate the incorporation of DIMA data. Age and self-reported illness profiles were generated from this database.

A second database ('Episodes') was created in Access 97 to record information from the primary health care clinic records and immigration health screening summaries. For confidentiality, individuals were identified in this database by CampID number and, for those who had attended the primary health care clinic, their Medical Record Number (MRN). For clinic presentations, presenting symptoms, diagnoses, investigations and hospitalisation details were entered as free text. Diagnoses and investigations were also entered as predetermined categories. All records indicated whether follow-up was required at either the Reception Centre clinic or at the Haven Centre.

As well as creating an electronic medical record for each person, the database was used to generate lists of those needing follow-up and summary reports on clinical presentations. As neither of the identifiers used in this database was subsequently used in the Haven Centres, the preparation of follow-up lists required linkage of this database with the personal identifying information in the 'East Hills' database. The two databases were also compared to ensure individuals were followed up for assessment and/or treatment and to evaluate the usefulness of the self-reported triage information.

The data entered into the surveillance system for each flight varied in completeness and only the summary data for selected flights can be provided. The tuberculosis data were entered in a separate database managed directly by the South Western Sydney Public Health Unit and will be described elsewhere.

The surveillance system was evaluated,[7] both for demonstrable effectiveness achieved in the current setting, and the system potential.

Results

Practicality and usefulness

The system was designed to operate with minimal resources: one person with data entry assistance, one computer, printer, phone, fax and e-mail access. The health services were operating at maximum capacity and the methods of operation and the networking among agencies continued to evolve with each incoming flight. It was important in this setting to identify direct practical benefits of the system to build acceptance and ensure that the appropriate data were fed into the system.

Practical benefits of the surveillance system included assisting in tracking medical records, clarifying record number duplications, linking immigration screening follow-up recommendations to clinic attendance records, and supporting self-reported symptoms data by monitoring medical records for symptoms of possible public health significance. These benefits resulted from having the ability to link data, and the system having the only on-site computerised health databases permitting timely searching, sorting and collating of data.

Table 1. Age profile for Flights 1 to 9 (N=3,397)

Age (years)	<1	1 - 5	6-15	16-64	65+
Number	62	489	863	1,997	45
%	1.8	14.4	25.4	58.8	13.0

Note: Date of birth information was not available for all persons

Resources

Despite fulfilling critical information needs, resources were not committed to maintaining the health surveillance system for the entire period of evacuee intake. Similarly, health surveillance at the Haven Centres was not coordinated centrally to generate data that were compatible with data from the Reception Centre or across Havens. Consequently, the surveillance data presented are incomplete and confined to those collected and collated at the Reception Centre.

Reports generated

Lists of individuals requiring public health and clinical follow-up were created from the information in the triage questionnaires. Lists of those requiring further clinical follow-up at the Reception Centre or at the Haven Centres were also prepared. The following tables are examples of the collated data that were reported to the Reception and Haven Centres and State and national health agencies.

The first information summaries prepared after the arrival of each flight were age profiles. Age categories were chosen to identify relevant groups for health planning purposes, such as those with paediatric needs and those who had undergone chest X-ray (16 years and older). Collated data for the first 9 flights are shown in Table 1.

Summaries of self-reported illness from the triage questionnaires were the next reports created for each flight. The proportion of people reporting a need to see a medical practitioner differed between flights, ranging from 6% to 26%. Data from Flights 1 to 9 are collated in Table 2.

Linking the self-reported illness database with the medical records/immigration screening database did permit more systematic and complete public health surveillance. For example, some diarrhoeal illness was detected from medical records that had not been self-reported.

Table 2. Self-reported health information for Flights 1 to 9 (N=3,397)

	Cough >2 weeks	Cough with sputum	Sputum with blood	Fever	Night sweats	Diarrhoea	Rash <4 days	Need to see a doctor	Urgent dental treatment
%	2.9	2.0	0.3	0.8	2.4	0.8	0.9	16.0	8.8

Note: categories were not mutually exclusive, for example about half of those coughing up sputum also reported a cough of > 2 weeks duration.

Table 3. Clinic presentations by condition category for Flights 3 to 5 (N=350)

Condition	%	Condition	%	Condition	%
Upper respiratory infection	15	Minor injury/trauma	5	Eye	2
Gastrointestinal	13	Lower respiratory infection	5	Endocrine	2
Dental	12	Mental health	4	Motion sickness	2
Ear/Nose/Throat	11	Pregnancy	4	Central nervous system	1
Skin	9	Musculo-skeletal	3	Other	2
Genitourinary	6	Cardiovascular	3		

Table 4. Evacuees needing follow-up in Haven Centre (Flight 5, N=224[#])

	Ante-natal	Dental	Mental health	Ophthalmic	General medical	Public health	Specialist
%	2.7	14.3	1.3	3.1	22.7	7.6	15.2

#	Total people seen in clinics and/or who had HSA referrals to East Hills or Haven Centre clinics
Dental:	this is grossly under-estimated as evacuees were advised to wait until reaching their Haven Centre before seeking dental assessment if there was no acute dental problem.
Mental Health:	only acute mental health problems or self-presentations were assessed at East Hills.
Ophthalmic:	evacuees reported having glasses broken or taken at borders, this category only identifies those with severe vision impairment or who identified the need for replacement glasses.
General Medical:	most common follow-up needed was repeat (usually post-menses) urinanalysis.
Public Health:	mostly scabies or head lice. Very few communicable diseases were reported among evacuees apart from tuberculosis, which generally delayed transfer to Haven Centres and is not included in this table.
Specialist:	this category includes evacuees referred to other specialist areas, most commonly for review of cardio-vascular, orthopaedic or diabetic problems.

Clinical presentations for Flights 3 to 5 are summarised in Table 3 according to medical diagnosis category. The majority of presentations were for upper respiratory infections. Most gastrointestinal symptoms were attributed to stress, fatigue and/or motion sickness after air and bus travel.

Finally, summary information was prepared for all people identified as needing follow-up at the Haven Centre. The data for Flight 5 are presented in Table 4.

Discussion

Developing and operating the surveillance system at the Reception Centre demonstrated that such a system could be established in an acute setting and that the primary aims, assessing evacuee health on arrival and monitoring for potential outbreaks, could be achieved. However, the central role that health surveillance has in disease screening, monitoring and surveillance, and in planning, operating and evaluating the health response in such settings needs to be recognised. Effective health surveillance systems can only be established with the appropriate planning, cooperation and commitment of resources.

A number of factors limited the success in achieving the aims of the surveillance system. Planning for meeting national surveillance needs was not incorporated into overall health planning for *Operation Safe Haven* from the outset, and staff were not allocated with specific responsibility for surveillance development and coordination at the Commonwealth level. As a result, advance work was not undertaken with other agencies, such as DIMA, HSA, State health authorities and clinic staff GPs to establish agreed unique identifiers, compatible electronic data collection methods, data linkages and communication and reporting networks.

Time and resource constraints also delayed the implementation of the system at the Reception Centre and impeded the development of a national surveillance system. As a consequence, the secondary aims to document, collate and report health status and service provision for duration of stay and on repatriation could not be achieved. The lack of coordinated database capability and reporting mechanisms between agencies or Haven Centres was a barrier to communication. Time was wasted keying in duplicate data or transferring data from one database to another (for example, Excel to Access).

Limited time and resources are common in emergency settings. The advance development of templates for linked databases would facilitate the process of establishing systems in a crisis. It is anticipated that the evaluation of the health data gathered for the Kosovar evacuees will inform the design and data fields of future data systems. While the experience is recent and the memories are clear, we need to capitalise on the expertise developed during the health responses to recent refugee intakes. We need to plan for future emergency responses, building on the lessons learnt, and develop and trial database templates and reporting mechanisms.

There is a continuing need for health surveillance in acute settings in Australia. In addition to the recent intakes of evacuees from Kosovo and East Timor, Australia has had a sharp rise in the number of illegal immigrants reaching its shores. Many of these are from countries that have not been traditional sources of such arrivals. Between January and November 1999, there were more than 2,700 unauthorised arrivals by air or sea.[9] Pending evaluation of their situation by immigration authorities, such unauthorised arrivals are held in detention facilities, generally placed in remote areas of Australia.

Health surveillance and reporting mechanisms are essential, whether responding to organised or unauthorised refugee intakes. However, while local and State based data arrangements are in place, there is currently no specific collection of national refugee health surveillance data. The establishment of a nationally coordinated acute refugee health surveillance system would provide valuable data for developing refugee health screening protocols and planning refugee health services. It would also ensure that relevant refugee health surveillance expertise was available for future emergency refugee evacuations to Australia.

Recommendations

Health surveillance of the kind developed during *Operation Safe Haven* has not been attempted before in Australia. It has provided us with valuable experience that should underpin our responses to future acute situations, ensuring that we meet international standards with surveillance as an integral part of urgent health responses.[4, 5, 6, 8]

To consolidate this experience and assist in planning, we recommend that policy and guidelines on health surveillance in acute settings be developed. From the

Box 1. Essential requirements for health surveillance in future acute health responses

Requirements for preparation:

- development of policy and guidelines for acute health responses in Australia that recognise nationally coordinated surveillance as an integral part of the response;
- dedicated position(s) at the Commonwealth level to oversee health surveillance;
- development and evaluation of database templates and reporting mechanisms using the experience and knowledge accumulated during recent refugee intakes; and
- national agreement among health departments on the resources expected to be available to support a surveillance system in a crisis, including computer hardware, software and expertise.

Requirements for an acute health response:

- immediate identification of key agency and personnel roles, responsibilities and networks;
- communication networks established early to inform and manage health surveillance;
- collaboration and cooperation among key agencies in the development and operation of information networks and data systems to ensure efficient and consistent data collection, collation, interpretation and reporting;
- a Commonwealth health surveillance officer to oversee the customising of database templates and the linking of databases and reporting systems;
- defined protocols identifying individuals, with designated responsibility to provide or receive surveillance information at each State or centre involved in the health response;
- simple systems for data entry, collation and reporting, that are operational at all centres within expected resource capacity, including computer hardware, software and expertise;
- commitment of resources for the duration of the health response (personnel, computer hardware, and access to telephone lines and the Internet) to permit data entry, management and reporting at State and Commonwealth levels;
- timely data entry and reporting mechanisms to permit effective public health action and/or health service planning and provision;
- data entry systems that include clinically useful information to be established at first point of clinical contact, to ensure timely and complete capture of health information in the clinical setting and reduce the need for duplicate data entry by clinical staff; and
- unique identifiers for each person to identify and link health records for the duration of stay.

experience gained in *Operation Safe Haven*, we have identified key recommendations for planning and operating effective surveillance in the acute setting in Australia (Box 1).

Such preparation, commitment and cooperation among key agencies will be essential to guarantee world standard health surveillance and protection for the people who are the focus of humanitarian exercises such as *Operation Safe Haven*.

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Comment

The changing pattern of arrivals has prompted a decision to review the 1992 NHMRC *Protocol for health screening of boat people arriving in Australia*. These guidelines, which have recently been rescinded, were specifically developed for unauthorised arrivals from South East Asian refugee camps. The review is being undertaken by a Task Group of the National Public Health Partnership, chaired by the Director of the National Centre for Disease Control, Commonwealth Department of Health and Aged Care, Professor John Mathews.