Original Research

Primary care in post-conflict rural northern Afghanistan

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SUMMARY

Objective: Little is known regarding the nature of primary care in post-conflict communities for several reasons, including: data collection is often given a lower priority than the immediate medical care needs in emergencies; and dynamic changes in a patient population and their needs make it difficult to collect data over the long term. Kinderberg International, e.V. is a German humanitarian organization that has been providing primary care in northern Afghanistan for the past 3 years. The aim of this article is to provide demographic data, pattern of clinic visits and descriptive epidemiology of the large data set from the primary care units.

Study design: Observational study.

Methods: Patient data gathered using the standardized government tally sheet were reviewed for 1 January to 31 December 2008. The data contained information from 12 primary care clinics and mobile clinics in three northern provinces in Afghanistan.

Results: In 2008, the 12 primary care clinics had more than 250,000 clinical encounters. There were significantly more visits due to diarrhoea and dehydration during the summer months. Overall, the number of primary care clinic visits showed clear seasonal variation, while the number of visits to mobile clinics remained stable throughout the year. Forty-three percent of all clinic visits were due to acute respiratory tract infection and diarrhoeal diseases, and 43% were due to uncategorized diagnoses.

Conclusion: Based on the data from three provinces in northern Afghanistan, mobile clinics can be an effective method to provide medical care in remote areas. A substantial proportion of diagnoses in patients at the clinics was not classified into pre-defined disease categories; these patients presented with numerous symptoms needing treatment. The high volume of ill-defined visits with various complaints to primary care clinics in emergencies may support the claim that primary care clinics are providing more than medical solutions, but also provide care for various complaints and an indispensable safety net to communities under stress. From this standpoint, primary care clinics in post-conflict communities should be considered as a vital element of peace building.

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Introduction

The Basic Package for Health (BPH) approach was implemented in Afghanistan immediately after the current government took office in early 2002 to ensure the coverage of primary care for the entire population. The BPH approach is based on a tier system to redistribute and decentralize the healthcare resources at district or village level to reach the people. The
majority of the population in Afghanistan live in rural remote villages where transportation is tenuous and often disrupted due to security reasons or adverse weather in the winter months. The provision of BPH is marked as the essential initial step to rebuild the healthcare system in Afghanistan after the war.

KinderBerg International e.V. (KBI) is a German humanitarian aid organization that was founded in 1994. The mandate of KBI is to implement humanitarian aid and development projects in post-conflict and post-natural disaster environments, with particular focus on the fields of primary health care, education, conflict management and psychosocial support for vulnerable populations including children, adolescents and women. KBI projects in post-conflict contexts are specifically designed to support transitional societies in their efforts at peace and community building. Former countries of operation include Rwanda, Bosnia, Serbia, Kosovo, Macedonia, Cote d’Ivoire, Nepal and Sri Lanka.

KBI Afghanistan

KBI launched its humanitarian aid operations in Afghanistan in February 2002. Initially, project activities focused on Kabul, the capital of Afghanistan, and the surrounding Parwan and Logar provinces. In 2006, KBI expanded its operations to include the northern provinces of Kunduz, Takhar and Badakhshan. The main objective of the community-based projects is the improvement of human security at local level by supporting locally driven civil society efforts. Four pillars implemented to fulfill these goals are community building, assistance in development of the healthcare system, human resource development and training, and aid distribution programmes.

The main target groups of the projects are internally displaced persons, and patients in remote rural areas with insufficient access to outpatient primary medical care services, including malnourished children, pregnant women and newborn infants. Remoteness and subsequent poor access to healthcare facilities often delay timely medical consultations, leading to a high mortality rate in mothers and babies. Overall, the aim of the projects is to help lower the markedly high maternal and child mortality rates.

Since 2008, KBI has employed 164 doctors, midwives, nurses and administrators to fully support the implementation of a basic package of health services (BPHS) in agreement with the Ministry of Public Health, Afghanistan. In addition to the basic health centres (BHCs), two other types of venues were developed to deliver primary care, taking into account the tenuous geographic conditions that affect the access of care: mobile clinics and medical container systems. The KBI health facilities, including the mobile teams, provide medical services for 6 days per week. Treatment and medication through KBI medical services are provided free of charge.

Basic health centres

KBI is in charge of managing five BHCs with staff and medication, as well as covering their respective running costs. The BHCs provide a wide variety of primary care consultations for both children and adults, including prenatal care and vaccinations. The BHCs generally comprise two treatment rooms, a delivery room and a pharmacy. Each facility is staffed by one doctor, one nurse, one midwife, two vaccinators and one pharmacist.

Mobile teams

Four mobile medical teams offer outpatient medical care in remote villages that lack access to medical services. Moreover, the mobile teams provide healthcare advice and organize transport for seriously ill patients to the nearest hospitals. Each mobile team contains one doctor, one midwife and one nurse (optional). The medical container systems consist of two to three converted cargo containers and are staffed by one doctor, one nurse, one midwife, one vaccinator and one eye technician, depending on need.

Medical container systems

Forty-foot cargo containers were converted into medical container clinic systems with the help of the German military. These systems enabled KBI to offer outpatient basic medical care in remote yet high traffic areas, such as the intersections of paths to several villages. In total, KBI runs three medical container systems, each of which is staffed by two doctors, one midwife, one nurse, one eye doctor and one vaccinator. The containers allow for separate examinations and treatments for men and women, and feature a small pharmacy, a vaccination unit and a prenatal/gynaecological examination table.

Methods

The medical staff at all KBI health facilities collected relevant medical patient data on a daily basis using the Afghan Health Management Information System (HMIS) data template, and transferred the data to the provincial KBI offices. Data entry clerks collected and drew together the field data and produced monthly reports. These reports were checked and analysed by the medical director and the deputy director. Data entry was conducted on an ongoing basis every day at the regional office as soon as the teams came back from their clinics. The field medical director conducted monthly tabulation and data quality checks.

In order to compare the number of patients seen for different conditions and for different care delivery locations, a one-sample Chi-squared statistic was used to test for seasonal variation. In addition, Chi-squared tests for two independent samples were used to compare the proportion of patients seen over 6 winter months compared with 6 summer months by medical conditions and by location of services.

Results

Over a period of 12 months (1 January 2008 to 31 December 2008), 280,313 patient encounters were recorded, with 265,523 new patient visits and 14,790 return visits.

The demographic breakdown for the 265,523 new patients was examined (Fig. 1). Children under 5 years of age constituted
33% of total visits, and female and male patients over 5 years of age constituted 41% and 26% of visits, respectively. Overall, approximately 75% of visits were made by adult women and children under 5 years old. There was no gender difference in children aged less than 5 years, but among adults, there were more female than male patients.

Based on 267,147 medical diagnoses made on this population, the disease categories were analysed and are shown in Fig. 2. Nearly 30% of the visits were related to acute respiratory tract infection (ARI), including coughs and colds, pneumonia and ear, nose and throat complaints (pharyngitis, otitis and tonsillitis). Diarrhoea and dehydration constituted 12% of the visits. Forty-three percent of visits were for other or unlisted diagnoses.

Among the 280,313 medical encounters, the seasonal variation in patient visits was examined. There was seasonal variation in patients’ visits to the BHCs and the mobile teams, although the mobile teams provided a more consistent number of patient consultations throughout the year (Fig. 3). Fig. 3 shows the number of cases treated over a 12-month period for the BHC&SC and the mobile teams. For the BHC&SC, the number of patients seen ranged from 10,392 in January to 21,570 in August ($P < 0.001$ based on a one-sample Chi-squared test). For the mobile teams, the number of patients seen ranged from 5469 in March to 8759 in August ($P < 0.001$). Comparing the two sources of care, it was noted that 40% of visits to the BHC&SC occurred during the winter months of November–April, whereas 47% of the visits to the mobile teams occurred during the same 6 winter months. Given the large sample sizes involved, this 7% difference was statistically significant ($P < 0.001$).

Lastly, the seasonal variation of ARI and diarrhoea was analysed. Fig. 4 shows the number of patients seen over a 12-month period for ARI and diarrhoea. For ARI, the number of patients seen ranged from 4577 in July to 8101 in December ($P < 0.001$). For diarrhoea, the number of patients seen ranged from 823 in February to 5341 in August ($P < 0.001$). Contrastingly, the two conditions, 47% of the ARI cases were seen during the summer months of May–October compared with 78% of the diarrhoea cases; a difference of 31% ($P < 0.001$). Overall, ARI was more common in the winter months while diarrhoea was more common in the summer months (Fig. 4).

**Discussion**

This is one of the few studies to examine the characteristics of primary care in post-conflict communities with a large number of patient encounters through ongoing data collection for 12 months. This study helped to elucidate several key questions in primary care delivery in post-conflict communities, such as who is attending for care, what type of problems they have, and if there is any seasonal variation in the number of visits.

Seasonal variation was found in the number of patient visits to the clinics; substantially more visits were made during the summer months than the winter months. Poor access to the clinics is predictable due to heavy snow in the
winter. In the mobile clinics, however, there was no obvious seasonal variation in the number of patient visits. In one study, a distance from the clinic of 3.5 km accounted for a 50% decline in mean attendance. Considering the tenuous access during the winter months in northern Afghanistan, access of care would be better addressed by mobile teams than regular clinics. In fact, the most recent guidelines by the Ministry of Public Health in Afghanistan incorporated mobile clinics as a modality to deliver primary care.

There were clear seasonal variations in disease distribution: diarrhoea and dehydration was more common in the summer months, and ARI was more common in the winter months. ARI did not diminish completely during the summer months, compared with the clear seasonal fluctuation for diarrhoea. This result suggests the possibility that other aetiologies are leading to ARI symptoms; for instance, asthma/chronic obstructive pulmonary disease secondary to exposure to bio-fuel combustion, which is fairly common world wide, could be misclassified as ARI.

There are numerous limitations in interpreting the data in post-conflict communities. This is certainly true for the present data and there are several caveats. First, many basic variables are often difficult to obtain. For example, the ascertaining of age, particularly in young children, was difficult in many remote communities where they are not familiar with the Gregorian calendar. As such, there are uncertainties regarding the reliability of age data. Local event calendars, as often used to ascertain chronological events in reference to the Gregorian calendar, were not provided. In addition, the BPHS data tally sheet only uses two age categories: ≤5 years or >5 years. More detailed age categorization in the BPHS tally sheet would help to address numerous conditions among adolescents and adults.

Second, data collection at the time of the study (i.e. immediately after the war) depended exclusively on the preformatted government tally sheet (HMIS). It was primarily designed to capture the most important childhood illnesses, including pneumonia and diarrhoea, prenatal visits and several surveillance diseases that have serious epidemiological significance (e.g. measles and polio). Due to this design effect, the data looked like the ‘IMCI illnesses’ vs others. Subsequently, it was extremely difficult to delve into analytical discussions of the types of diseases other than a descriptive overview of the distribution of index diseases. Therefore, this study should be interpreted as a hypothesis-generating study, rather than an analytical study.

Third, the diagnoses were purely based on clinical grounds and there were no national guidelines for diagnoses and management other than the IMCI approach. In conflict and post-conflict communities with a lack of appropriate diagnostic modalities, making a diagnosis for each patient is difficult. Under these circumstances, there are always concerns regarding misclassification. Two examples of these potential misclassifications are urinary tract infection (UTI) and unlisted diagnosis. In this study, for example, the disease distribution of UTI was fairly high (11%). However, in the majority of clinics, the availability of urinalysis kits was erratic. There is a high prevalence of bladder stones in the area, so other conditions may easily have been misclassified as UTI. There is a need to examine exactly what is being categorized as UTI, as it can be a manifestation and interpretation of completely different types of illnesses or conditions. The study data were collected from 12 clinics in three provinces and diagnoses were made by more than 40 different healthcare providers; therefore, it is highly unlikely that any condition in the analysis is skewed in one direction than the other.

A large proportion of diagnoses in this study were unlisted (43%). These were recorded as numerous symptoms that were not captured in the pre-selected conditions on the government tally sheet. The proportion of unlisted diagnoses equalled the proportion of diarrhoea and ARI diagnoses combined (43%). A recent study claimed that primary care problems in post-conflict communities are not simply a matter of diseases and appropriate treatments for diseases, but require public health interventions. One of the public health implications of the present findings would be that primary care clinics in post-conflict communities provide not only medical care dealing with diseases, but also serve as an...
important buffer by responding to numerous complaints throughout the year, and providing care and offering a crucial safety net to the community under stress. If this is true, basic primary care in emergencies and post-conflict should be considered as a vital element of peace building in the community.

Lastly, numerous reports have indicated the high prevalence of mental disorders in post-conflict communities. The low prevalence (2%) found in the present study is a concern. Somatization of mental disorders, such as body ache, pain and fatigue, are commonly reported in many parts of the world, including Afghanistan; these disorders can be easily misclassified as simple pain symptoms and captured as an unlisted diagnosis. Future refinement and training should incorporate mental health care and care of chronic medical conditions for both children and adults.

In conclusion, this large data set over a 12-month period gives an overview of the nature of primary care in post-conflict northern Afghanistan. The data also provide useful information for future refinement of primary care delivery strategies.

**Ethical approval**

None sought.

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**Competing interests**

None declared.

**References**