ANTHROPOLOGY Vienna Evaluation Unit MEDECINS SANS FRONTIERES

“They eat it like sweets”

Perceptions of antibiotics and antibiotic-use of patients, prescribers and pharmacists in a district hospital in Kabul, Afghanistan

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Carrying out this study on perception of antibiotics and antibiotic-use in Ahmad Shah Baba (ASB) hospital in Kabul, Afghanistan was an enormous experience for me. I could learn from all the respondents in the social context, which helps me to better understand patients' and people's practice and perception of medication intake and antibiotic use. I was able to add many aspects to my medical anthropological knowledge during this field research, especially the overuse of antibiotics in a context of three decades of war.

I would like to thank all the people in Ahmad Shah Baba who worked with and talked to me in order to make this study possible and constructive. It was an enriching and in all cases touching experience to listen and learn. I would especially like to thank them for all the openness, which enabled sharing personal experiences of dealing with ill-health conditions and using medicines, especially antibiotics. Personal life stories were all overlain by the insecure living conditions in the Afghan context and how to best keep not only their bodies healthy and strong but also maintain a general holistic well-being.

A researcher cannot give immediate assistance but I hope that the information I gathered and the conclusions I have drawn will enable us to strengthen our interventions in order to create a successful dialogue with the patients, caregivers, families and health staff to decrease antibiotic overuse and increase public awareness of antibiotic resistance as well as trust in health care providers' consultations and prescriptions.

I would like to thank the MSF teams in ASB and Kabul coordination as well as at the headquarters in Brussels and Vienna for their valuable support. I am especially thankful to Yasmine al Kourdi, who encouraged me to take on this study. This way I encountered wonderful people with a painful history. I particularly want to thank my national and international MSF colleagues of the project in ASB for their professional attitude, their in-depth knowledge of the country and its people and our enlightening discussions. A big thank-you goes to my dear colleague Maren Jeleff, who did an excellent literature review in the preparation phase of this study.

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My experiences with MSF, my colleagues and the people of Ahmad Shah Baba are precious to me; they have all my respect for their ability to cope with their difficult living conditions. To all those who may continue to work in Afghanistan.

Table of contents

Executive summary

This report provides an analysis of the perception of antibiotics and antibiotic use in a district hospital in Kabul. The major findings will help to answer the following questions: how do patients, caretakers, doctors and pharmacists perceive antibiotics and antibiotic use? What do they know about medication in general and antibiotics specifically? For which illnesses do they take them and how do they use them? How do they recognise access to health care? Why do they come to Ahmad Shah Baba hospital? How do they perceive this health care facility and how do they see health personnel and their performance? What is the antibiotic seeking behaviour like? Who and what influences a decision? And how is antibiotic resistance driven?

In this project in Kabul MSF-OCB is focusing on reducing mortality and morbidity among the population of District 12 in the area of Ahmad Shah Baba by providing free quality curative and preventive health care services in a district hospital.

Over- and misuse of antibiotics increases the spreading of antibiotic resistance. Underlying reasons for misuse include limited understanding by health-care providers and patients, unregulated dispensing, circulation of sub-quality antibiotics and incorrect usage. Preliminary data indicates that over-prescription of antibiotics is a regular occurrence in Ahmad Shah Baba hospital in Kabul, despite programmatic measures being taken to rationalise antibiotic prescription behaviour.

This mixed method study of the community in the OPD of Ahmad Shah Baba hospital (patients, prescribers and providers) was undertaken to better understand:

- Public knowledge of purpose and action of antibiotics
- Drivers of choice of medicines prescribed on the level of patients, prescribers and providers
- The way antibiotics are used and why
- Associations of putative antibiotic seeking behaviour with patient characteristics
- Perception of antibiotics and drug intake (medication) in general
- Perception of ASB hospital and the doctor-patient-relationship

A flexible participatory technique was applied, i.e. the researcher gathered data using non-participant observation, field notes as well as in-depth interviews guided by topic-led questions. The questions posed were based on themes relevant to the research question and the literature research appraisal. The study engaged in purposive sampling. Respondents were chosen with the help of MSF team members. Data analysis was inspired by a qualitative content analysis in an inductive and deductive way. Transcriptions were screened for relevant information, organised, coded (manual and using Nvivo), categorised and interpreted. A methodological triangulation was applied; in-depth individual interviews (33) were combined with group discussions (4), non-participant observations and document reviews and additionally by presenting deviant cases.

The extent of knowledge and the way people perceive antibiotics have major influence on people's 'antibiotic behaviour'. Lack of knowledge is one of the reasons why people think they need antibiotics to clean the body as well as the blood from dirt and to protect and strengthen the body. The perception of antibiotics as powerful, famous and rapid-acting medication additionally reinforces the problem of over- and misuse.
An aspect that highly contributes to antibiotic resistance is the way patients 'deal' with their antibiotic medication. The level of education again strongly influences how patients take the medication and if they follow the doctor's prescription or not. Most patients stop medication intake when they feel cured, and do not finish the prescribed antibiotic drugs. Leftover antibiotics are stored at home and used for the next illness course.

In terms of health-seeking behaviour self-medication is the first step people undertake to treat ill-health conditions. Medication and also (leftover) antibiotics are stored at home or bought in the

pharmacy nearby. Only when the condition does not improve the family decides to consult a doctor or to go to the hospital. Ahmad Shah Baba is chosen because the drugs are free and of good quality, 'foreign' people are working there, 'foreign' drugs are prescribed or because it is close to the place where the people live.

From the doctors' and prescribers' perspective patients expect to receive antibiotics when seeing a doctor. Generally, doctors working in Ahmad Shah Baba hospital are obliged to work according to the MSF guidelines. However, all these doctors also work in their private clinics. Under these conditions peer pressure plays an important role in terms of fulfilling patients' expectations. The fear of losing patients when refusing to prescribe antibiotics is crucial. Patients who come from far or deprived areas, female patients and poor people are prescribed antibiotics more readily. Today doctors at Ahmad Shah Baba hospital mainly have to deal with patients' expectations and patients' frustrations in case they are not receiving the anticipated antibiotics.

The findings in this report clearly suggest that the majority of the general population coming to Ahmad Shah Baba hospital lacks knowledge about the risks using antibiotics incorrectly. Cultural factors are powerful influencing factors for Afghan people in terms of the usage of antibiotics. Therefore, these factors need to provide the basis in awareness-raising on antibiotic use and resistance.

Recommendations

The recommendations are categorised and presented in regard to the study objectives. They are to be understood as general recommendations for antibiotic use and prescription practices in Ahmad Shah Baba hospital, i.e. they are addressed to MSF and the MoPH in Kabul.

Ministry of Health policies

- Discuss with the MoPH and raise awareness on antibiotic over-use and resistance in Ahmad Shah Baba hospital (and in the country at all)
- Work together with the MoPH on solutions how to address antibiotic use inside ASB hospital and the Afghan health system in general
- Impose stricter guidelines for doctors on antibiotic use
- Work on antibiotic protocols together with the MoPH
- Discuss with the MoPH on pharmaceuticals – which antibiotics to import – and restrict the sale of certain antibiotics in the pharmacies

For patients and caretakers

- Raise awareness through health promotion in the OPD of ASB hospital on consulting a doctor before going to the private drugstore
- Raise awareness through health promotion in the OPD of ASB hospital on the quality of drugs in private and governmental drug stores and market
- Focus on the dangers of expired drugs
- Explain the characteristics of antibiotics in general
- Explain the difference of viral and bacterial infections and when to use an antibiotic
- Elaborate on the risks of antibiotic use and development of resistance
- Explain why it is dangerous to over-use antibiotics
- Refer to previous experience of antibiotic use as this is an influencing factor for future demand of the same antibiotic
- Give information on negative effects of medication and encourage patients to talk about their fears and perceptions and daily struggles which lead to antibiotic use
- Show empathetic understanding of patients' difficult living conditions and discuss these constraints with them (patients adjust intake of drugs to their perceptions, life, situation, social, cultural and economic context)

For doctors and prescribers

- Continue trainings and workshops on indications that justify the prescription of antibiotics
- Continue trainings and workshops on antibiotic resistance
- Continuously monitor the prescribing practices and use of MSF guidelines
- Discuss solutions with the doctors in case there is no reference which drugs to use in the MSF guidelines
- Discuss solutions with the doctors for the high demand of antibiotics of other hospital staff
- Train the doctors on their influence on patients – 'good' words and 'good' behaviour are very much appreciated
- Train the doctors on how to deal with the pressure of patients to prescribe antibiotics

For pharmacists and dispensers

- Train external pharmacists on the dangers of antibiotic over-use
- Train external pharmacists on antibiotic resistance
- Train external pharmacists on indications that justify the prescription of antibiotics
- Train MSF dispensers on how to deal with frustrated patients who do not receive antibiotics – which answers they can give
- Discuss with MSF dispensers on their daily experiences with unsatisfied patients and find solutions about how to deal with them

Abbreviations

AB	antibiotic
ABR	antibiotic resistance
ASB	Ahmad Shah Baba hospital
BPHS	Basic Package of Health Services
CPP	country policy paper
ERB	Ethics Review Board
EPI	Enlarged Programme of Immunisation
HP	health promoter
IMF	International Military Forces
MoPH	Ministry of Public Health
MD	medical doctor
MoU	memorandum of understanding
MSF	Médecins Sans Frontières
NGO	non-governmental organisation
OCA	Operational Centre Amsterdam
OCB	Operational Centre Brussels
OCP	Operational Centre Paris
OPD	outpatient department
OTC	over-the-counter
WHO	World Health Organisation

1 Introduction

1.1 Brief description of the historical background

Afghanistan is a country at war and not one in a 'war like' situation. It is so today and it has been like this since late 1979 when the Russian Army invaded the country.
As a nation state, Afghanistan was created by King Ahmad Shah Durrani in 1747, when he unified the Afghan tribes. Afghanistan has always been prone to war; given its strategic location the country served as a buffer between the Persian, the Russian and the British Empire, hence during the 19th and 20th century, it was a battle ground for regional ambitions of the Russian and British empires, the so called 'Great Game'. Finally, it won independence from national British control in 1919.
In 1989 a defeated Russian army left the country; Moscow continued to support the communist government of Najeebullah until 1992; then the Mujahedeen entered Kabul and took over power. The country engaged in a brutal civil war. This crisis led to the formation of the northern Alliance and the Taliban movement of Mullah Omar. The crisis ended when the Taliban took control over the city in 1996. Until 2001 the Taliban government provided a period of relative tranquillity, achieved through a repressive and conservative rule of law. Following the 9/11 attacks and the 'refusal' of Mullah Omar to extradite Osama bin Laden, the US under George W. Bush invaded Afghanistan under the concept of 'the war against terror'. In less than six weeks the Taliban were defeated and massacred. In December 2004 Hamid Karzai became the first 'democratically' elected president.
The frustration about the lack of reconstruction and development and the fact that the international military forces (IMF) relied on warlords to control some areas of the country had opened the door for a re-emerging of the Taliban. With the strong support of Pakistan, with their claims of justice and anti-corruption, the Taliban gained popular support, once again mainly amongst Pashto ethnic groups, which were suffering the most from the terror and their often brutal revenge towards previous Taliban supporters by the Northern groups.[1]
Political instability and insecurity continued to hamper peace in Afghanistan, showing its magnitude in the exhausting and contentious election process of the new president. Results were only declared after a long period of stonewalling tactics. Finally the new president, a US-educated anthropologist, Ashraf Ghani was sworn in on 29th September 2014. In his inauguration speech he said: "We are tired of this war" and asked the Taliban and the Hezb-i-Islami to prepare for political negotiations.

1.1.1 Socio-demographic data

Afghanistan, officially the Islamic Republic of Afghanistan, is a landlocked country located in central Asia and south Asia. It has a population of approximately 32 million people, making it the 42nd most populous country in the world. It is bordered by Pakistan in the south and east; Iran in the west; Turkmenistan, Uzbekistan, and Tajikistan in the north; and China in the far northeast. Its territory covers 652 000 km^2 making it the 41st largest country in the world.[2]
Due to its historical status as a country at crossroads, Afghanistan is a multi-ethnic society. The two main ethnic groups are the Pashtu (42%) in the south and southeast (Sunni Muslim and Pashtu speaking), the Tajik (27%) in the northeast mainly, north and west (Sunni Muslim, Dari speaking). Other important ethnic groups are the Turkmen ethnic groups (9%) in the north (Uzbek, Turkmen, who speak Uzbek or Turkmen and are Sunni Muslim), Hazara (9%; an ethnic group with Asian roots living in the central region of Afghanistan, speaking Dari and being Shia Muslim). Sunni Muslim account for 80%, Shia Muslim 19% and other confessions represent 1%. Outside these main divisions, the Afghan society is further fragmented into clans and sub-clans. It is so that one of the roots of the

[1] This introduction part is adapted from the MSF Country Policy Paper 2014, Afghanistan.
[2] http://en.wikipedia.org/wiki/Afghanistan (accessed 2 December 2014)

current conflict can be found in Afghanistan's complex ethnic and linguistic fault lines, which are dividing the country between competing political and armed factions.[3]

1.1.2 Health situation in Afghanistan

The country developed a framework of health services with universal free access at a very basic level during the USSR presence. Some health structures were built, mainly in urban centres. Until 2002 health services were only provided by hospitals and a few health structures, supported by NGOs (among them MSF) and the private sector. In 2002, the WHO started developing and implementing a functioning country wide primary health care system, the 'Basic Package of Health Services' (BPHS). The Ministry of Public Health (MoPH) set the target of 95% coverage to be achieved by 2015. Viewing the lack of capacity of the MoPH to run the health system, it was decided to subcontract the health services to private actors, meaning NGOs. Currently, most of the secondary and tertiary hospitals are managed by the MoPH while some are supported by donors or by NGOs.
The health system is under-resourced (with 2.7 MDs and 4.6 other medical staff per 10 000 people and with 2025 people per hospital bed) and underfunded. Despite indicators that show an overall increased utilisation rate of health services from 1.2 consultations per person per year in 2010 to 1.6 consultations per person per year in 2012 the access to health care remains uneven between urban and rural areas and challenged by several factors such as security, difficult geographic terrain as well as financial barriers.[4]
In 2013, the ongoing war and its consequences continued to restrict people's access to quality medical services – in particular to specialist healthcare. Private clinics are unaffordable for most Afghans and many public hospitals are understaffed and overburdened. Many rural health clinics are dysfunctional, as qualified health staff has left the insecure areas, and the supply of reliable drugs and medical materials is irregular or non-existent. Insecurity can also prevent entire communities from travelling to hospitals. Afghanistan has some of the worst health indicators in the world according to the World Health Organization, and is still one of the riskiest places to be a pregnant woman or a young child. MSF focuses on ensuring people have better access to free, quality healthcare in some of the most conflict affected areas.

1.1.3 Drug regulations

To regulate drug importation, a central pharmacy and a quality control service were set up. There is no technical capacity to test the drugs. 80% of drugs are smuggled in from Pakistan or Iran and more than 50% are fake or substandard. The fact that two major health donors, European Commission and the World Bank, choose low-quality local suppliers, does not set the example. In most health structures (supported or not), the patients are sent by the MD's to buy their drugs with pharmacies who offer the MD's a commission. Likewise, the control over the private sector, who provide around 70% of the health services, is very weak and there is considerable evidence of widespread medical malpractice, such as power abuse and overmedication, leading to severe anti-biotic resistance.[5]

1.2 Background of antibiotic resistance

There are high proportions of antibiotic resistance (ABR) in bacteria that cause common infections (e.g. urinary tract infections, pneumonia, bloodstream infections) in all regions of the world (WHO, 2014).
Over- and misuse of antibiotics does not only increase the spreading of antibiotics resistances but induces resistance. Reasons for this misuse are complex and varied, including factors as diverse as a

[3] For more details see MSF CPP 2014, Afghanistan.
[4] Source Central Statistic office of Afghanistan, Health Information System report 2012.
[5] For more details see MSF CPP 2014, Afghanistan.

lack of comprehension by health care providers and patients, illegal or unregulated dispensing, the circulation of poor quality or expired antibiotics, incorrect usage, and economics (WHO, 2011; Okeke et al., 2005). In an effort to address this problem, research has focused on educating providers and patients on correct antibiotic usage, while less focus has been on understanding the reasons behind this incorrect or irrational antibiotic usage –often it is reduced to a "lack of education" on the part of the prescriber or the patient. While prescribing practices of health care providers have been shown to account for a substantial portion of irrational antibiotic use globally (Curriea et al., 2009; Nguyen et al., 2011), patient perception and choice are also strong determinants of antibiotic overuse and misuse. This has been well documented in the context of self-medication studies in many diverse contexts (Kristiansson et al., 2008; Hussain et al., 2006; Okumara et al., 2002; Parimi et al., 2004; Al-Azzam et al., 2007), but it has also been shown to have an influence on patient-provider dynamics, often determining whether antibiotics are ultimately prescribed and how they are administered (Pechère, 2001; Reeler, 2000). In the end, efforts to curb the incorrect usage of antibiotics must take into account public attitudes and expectations.
Particularly in resource-poor settings , little is known about the attitudes of patients and prescribers towards antibiotics. Nevertheless, antibiotic use is widespread in settings such as Central Asia, with many drugs being available over-the-counter. This, combined with the unmapped local attitudes towards antibiotic usage, creates a major challenge for health providers in the region, who need to develop locally adapted strategies to reduce irrational drug use and safeguard the arsenal of the world's antibiotics against the growing threat of microbial resistance. The international NGO Médecins Sans Frontières (MSF) is such a health provider.

1.3 Background of MSF in Afghanistan

MSF has been present in Afghanistan since the 1980ies, throughout the civil war from 1992 to 1996 and the Taliban years from 1996 until 2001. After a temporary evacuation following 9/11, MSF re-entered Afghanistan with a strong emergency response in the North (Balkh, Sar-e-Pul, Baghlan, Takhar and Kunduz) and now continues its work in Bamyan, Badakshan, Kandahar, Badghis and Herat.
Following the killing of five MSF workers in Bhadgis in June 2004, all five sections closed their missions. In 2009 MSF returned to Afghanistan after heavy internal debates on the question of resuming operations. In order to gain access, MSF negotiated to work first in two MoPH-run hospitals. After beginning in the District hospital in Ahmad Shah Baba, in District 12 in Kabul, MSF started activities in the provincial Boost Hospital in Lashkar Gah, Helmand province. After initial difficulties in identifying MSF's role and responsibilities, the patient loads in both projects kept on growing, resulting in remarkable acceptance by the population and goodwill from the authorities. In September 2011, MSF opened the trauma hospital in Kunduz province and in March 2012 the first baby was born in the maternity in Khost. At the beginning of October 2012, MSF-OCA took over Helmand under the management of MSF-OCB. On the 25th of November 2014, MSF-OCP started its activities in Dasht-e-Barchi hospital in Kabul – a similar assignment as Ahmad Shah Baba hospital project.

The added value of MSF in Afghanistan is growing year by year, not only due to the size of the operations, but also due to the principled nature of the work. The 2011 CPP quote still stands firmly that "MSF financial independence, single mandate medical humanitarian nature and extensive, positively perceived history in the country gives MSF a unique position to negotiate presence in areas that are no longer assumed to receive meaningful healthcare due to the conflict." MSF is primarily in Afghanistan to address the medical needs of populations caused by the armed conflict and the consequent lack of health care.
Secondary health care is best provided in referral hospitals (at district level or above), often located in populated areas, in provincial capitals, which means that MSF is working in government controlled areas. Today all four projects are located in government controlled cities, while the most affected populations are mainly located in conflict/non-governmental areas.

1.3.1 MSF in Ahmad Shah Baba Hospital

From 2001 to 2003, MSF OCP ran a comprehensive health centre in the Ahmad Shah Baba public health facility. MSF added an emergency room and a maternity ward to a small OPD existing there. After the killing of five MSF workers in Bhadgis in June 2004, MSF returned to Afghanistan under a single representation model, led by OCB. Ibn Sina[6] took over the support until June 2009.
The Ahmad Shah Baba project is the first project opened following MSF's return to Afghanistan in 2009. A two-year renewable bilateral MoU was signed between MSF and the Ministry of Health in June 2009 and extended until end of 2016. Its proximity to Kabul served to facilitate the acceptance of MoPH towards MSF programmes in the country.

Fig. 1 Ahmad Shah Baba hospital

Fig. 2 street market next to ABS hospital

In Ahmed Shah Baba the population has increased significantly during the last decade, but the health structures have not developed accordingly, just as little as in the rest of Kabul. The number of public health facilities in District 12 is not enough to cover the entire population, especially since the facilities are all understaffed and the quality of care and services provided do not meet acceptable standards.
MSF has been upgrading Ahmad Shah Baba hospital to become a reliable district hospital and has trained Afghan staff from the Ministry of Health and MSF, so that they can provide emergency and maternity services around the clock. A new waiting area, the relocation of the female outpatient department and the opening of a new maternity ward with 21 beds offering labour, delivery and post-delivery care were completed in 2013. At present up to 1400 births every month are assisted by the staff. The hospital also provides treatment for malnourished children. From April, MSF operated mobile clinics in the Ahmad Shah Baba area to carry out antenatal and postnatal consultations as well as vaccinations for children.[7]

1.3.2 MSF response and strategy of intervention

The Ahmad Shah Baba project is located in one of the most underserved areas of the city. The number of health facilities covering the total population is insufficient and with the growing population this imbalance is likely to increase. Kabul's population has tripled in size since late 2001 to approximately 5 million people, making it the world's fifth fastest growing city.
The figures speak for themselves: returning refugees, displaced persons and migrants – both economically motivated and forcibly displaced – account for 80% of population growth in Kabul since

[6] Ibn Sina is an independent Afghan NGO running a private public health institute.
[7] MSF International Activity Report 2013.

2001. Experts foresee that the implacable influx of IDPs, migrants and refugees will continue to shape the spatial development of the city for many years in the future, as it is the case for ASB and the neighbouring districts. Many of the displaced communities have been subject to violent threats over land and resources. Moreover, Pashtun IDPs from the southern provinces are associated with the influx of drugs, arms and insurgents into the districts. Similarly, Pashtuns and Jogi nomads[8] reportedly suffer discrimination on the basis of their ethnicity and cultural practices. Women and children are also exposed to a range of threats related to poverty, survival strategies and restricted mobility. MSF's objectives aim at reducing mortality and morbidity among the population of district 12 in providing free quality curative and preventive health care services in a district hospital.[9]

1.4 Rationale for the study

Preliminary data indicates that over-prescription of antibiotics is a regular occurrence in Ahmad Shah Baba hospital in Kabul, despite programmatic measures being taken to rationalise antibiotic prescription behaviour. Very few studies have been conducted on this topic among the local communities in Afghanistan (Morikawa, 2005; Khan et al., 2008), with most studies in the country focusing on antibiotic use and resistance among the international armed forces, but little or no attention was so far devoted to the Afghan population. Considering the dearth of knowledge on attitudes towards antibiotic usage among Afghan patients, prescribers and providers, a qualitative study was conducted to map the perceptions and attitudes concerning antibiotics among the clinical staff and the patient population of this hospital.

[8] An ethnic minority in Afghanistan, accounting for 100 000 people.
[9] See also the MSF Project Document ASB 2013.

2 Objectives of the study

2.1 General objective

In parallel with a quantitative study on antibiotic usage at the ASB district hospital, the qualitative part of the research aims to develop a contextual understanding of public attitudes and expectations surrounding antibiotics in the outpatient department (OPD) of ASB hospital.

2.2 Specific objectives

This mixed method study of the community in the OPD (patients, prescribers and providers) was undertaken to better understand the following aspects:

- Public knowledge of purpose and action of antibiotics
- Drivers of choice of medicines prescribed for patients on the level of patients, prescribers and providers
- How antibiotics are used and why
- Associations of putative antibiotic seeking behaviour with patient characteristics

To these agreed objectives in the study protocol two more were added in order to better understand peoples' motivation and influencing factors in using antibiotics:

- Perception of antibiotics and drug intake (medication) in general
- Perception of ASB hospital and the doctor-patient-relationship

2.3 Main outcome measures

The main themes of the qualitative study will include:

- Public knowledge of purpose and action of antibiotics
- Drivers of choice of medicines prescribed for patients:
  - For patients:
    - Perceived link between illness and antibiotics
    - Role of health promotion/education
    - Previous experience with antibiotics
    - Health care provider influence
    - General/cultural understanding of specific medications
    - Cultural perceptions of the method of receiving medications
    - Role of market forces/costs/availability
  - For prescribers
    - Perceived link between illness and antibiotics
    - Role of patient choice or desire
    - Availability of antibiotics
    - Risk/benefit analysis
    - Market/economic forces
    - General/other cultural perceptions/practices
  - For pharmacists/dispensers
    - Perceived link between illness and antibiotics
    - Role of patient choice or desire
    - Market/economic forces
    - Availability
    - General/other cultural perceptions/practices

The main outcomes of the questionnaire survey will include:

- How are antibiotics used and why:
  - Are they used as prescribed?
  - Are regimens completed?
  - Are they 'repurposed'?
  - Did patients have recent previous experience with antibiotics and in what context: who prescribed, for what, regimen completed, did it work, 'repurposed'?
- Does reported antibiotic seeking behaviour and usage correlate with the following aspects? And if yes, how?:
  - Demographic profile of patient
  - Demonstrated knowledge of antibiotics
  - Other factors: e.g. market, cultural perceptions, relation with prescriber

3 Methods

3.1 Study setting and population

The qualitative part of the study was conducted at the OPD of the ASB district hospital in Kabul, Afghanistan. With a capacity of 69 beds, the ASB hospital has inpatient wards including surgery, maternity, paediatrics and internal medicine. In addition, the hospital has an emergency department, an operation theatre, an OPD and a dental clinic. Laboratory and X-ray services are all available at the hospital. There is also a central pharmacy. The OPD is one of the busiest departments in the hospital, performing on average 6000 consultations a month. Consultation services include general OPD, TB clinic, staff clinic, wound dressing, postnatal care, antenatal care, post-surgical follow-up and family planning. Patients attending the OPD receive their drugs from the dispensary located inside the hospital premises, which is supplied by the MSF ASB central pharmacy. There are eight Ministry of Public Health (MoPH) doctors in total[10] and one MSF doctor acting as OPD supervisor, all trained on MSF treatment guidelines. All services in the hospital are provided free of charge.

The study population for the in-depth interviews was a subset of patients and caretakers (male and female) attending the OPD of ASB hospital as well as all doctors and pharmacists (male and female) who prescribe and/or dispense medication in the OPD.

For the quantitative part of the study the validated questionnaires developed from the patient/caretaker interviews were administered to a broader patient/caretaker population (three groups: female patients, male patients and male and female caretakers of children; n≈315) in the male and female OPD.

3.2 Study design

This qualitative study is part of a cross-sectional, mixed-methods study based on in-depth interviews to understand the perceptions and attitudes of prescribers, providers and patients/caretakers. The quantitative part of the study consists of validated questionnaires to describe the patients' knowledge and use of antibiotics.

The research design of this study is qualitative. Its aim requires an exploratory approach to understand knowledge and perceptions of antibiotics and antibiotics use from the perspective of the patients and caretakers, prescribers (doctors) and dispensers (pharmacists) in ASB hospital in Kabul (Pope & Mays, 2006).

A flexible participatory technique was applied, i.e. the researcher gathered data using non-participant observation, field notes as well as in-depth interviews guided by topic-led questions. The questions posed were based on themes relevant to the research question and the literature research appraisal. Following standard qualitative interview procedures, the order of questions was driven by the nature of each participant's answers, which means that both the wording of questions and the order they were asked during interviews were likely to be modified.

With a few participants group interviews were conducted; in some circumstances they happened naturally in other situations participants asked to be interviewed together. A triangulation of findings was undertaken to enhance the interpretation of data. Triangulation enables an accurate representation of reality through use of multiple methods or perspectives for data collection (Brikci, 2007). For this study a methodological triangulation was applied; in-depth individual interviews were combined with group discussions, non-participant observations and documents.

[10] At the time of the study.

The qualitative study team consisted of the principal investigator, a medical anthropologist, and two male translators who assisted also in transcribing recorded interviews. A volunteer supported the study team throughout the analysis process using Nvivo.
The quantitative study team was composed of two translators, Ahmad Shah Baba Health Promotion (ASB HP) supervisor, HP coordinator and HP coordinator assistant and an operational researcher.

3.3 Study sampling

Initially it was planned to conduct approximately 10 in-depth patient/caretaker interviews to serve as groundwork to develop the questionnaires for the quantitative study. Additionally, individual in-depth interviews with prescribing staff (≈8) and pharmacists/dispensers (≈7) should complete the qualitative study. Finally, it was decided to continue interviewing patients and caretakers until saturation was reached resulting in 21 interviews with patients and caretakers.[11] All interviewed individuals were asked beforehand if they agreed to an interview and where they preferred to be interviewed. Interviews with female patients and caretakers were organised through the translators and with the help of the health promoters (HP) in the waiting area of the female OPD1 and 2, triage and EPI. Discussions with male patients and caretakers were arranged in the male waiting area at the entrance of the hospital and in the male OPD together with the HP. To conduct the interviews a separate room available from 8am to 3pm, where confidentiality could be guaranteed, was provided. Only in a few cases interviews were carried out in the afternoon in the triage area in an empty space. Conversations with doctors (7) took place in the same room. Interviews with dispensers (3) were carried out either in the MSF office or in another empty space in the hospital area, as they were conducted in the afternoon. Additionally, all MSF health promoters (4 interviews, 6 participants) were included in the study. Two private pharmacies were visited in the building next to the hospital and the owners were interviewed.

Respondent characteristics	**Total interviewees = 39; n (100%)**
Patients female	6 (15%)
Patients male	4 (11%)
Patients total	**10 (26%)**
Caretakers female	5 (13%)
Caretakers male	6 (15%)
Caretakers total	**11 (28%)**
Doctors female	2 (5%)
Doctors male	5 (13%)
Doctors total	**7 (18%)**
Health promoters female	4 (10%)
Health promoters male	2 (5%)
Health promoters total	**6 (15%)**
Prescriber female	1 (3%)
Prescriber male	2 (5%)
Prescribers total	**3 (8%)**
Private pharmacy owner male total	**2 (5%)**

Table 1: Target groups and interview characteristics

A purposive sampling technique was applied. The sample size of purposive sampling is determined built on the notion of saturation. Based on this logic the sample size cannot be planned beforehand. It was feasible to interview between 3 to 11 people of any homogenous group.

[11] Please refer to table 1 for more details on how many interviews were done with whom.

Categories for the choice of participants for the study included age, sex, education level, marital status, ethnical background and setting (urban and rural).

Respondent characteristics	**Total interviewees = 39; n (100%)**
Age	
Younger than 30 yrs	19 (49%)
Older than 30 yrs	20 (51%)
Gender	
Male	21 (54%)
Female	18 (46%)
Ethnicity	
Tadjik	14 (36%)
Pashto	23 (59%)
Gujjiri	2 (5%)
Education	
educated	29 (74%)
uneducated	10 (26%)
Interview type	**Total interviews = 36; n (100 %)**
Individual interview	33 (92%)
Group Interview	3 (8%)

Table 2: Respondent and interview characteristics

The quantitative patient questionnaires were administered to a wider group of patients and caretakers: assuming a 30% prevalence of the conditions of interest to be assessed – specific knowledge of antibiotics, specific attitudes to certain drugs, etc. – (Yu et al., 2014), a 5% confidence interval and 95% confidence level will require 315 individuals to be surveyed. These individuals will be stratified as groups of females, males and caretakers (male/female) of children, ≈105 each, allowing us to describe potential differences between the populations. The study will not be powered to detect specific differences between such populations, as this is not the primary objective of the study.

A minimum of 24 questionnaires were administrated daily (minimum 12 questionnaires per translator). It was agreed with the translators and the ASB HP supervisor to go to specific locations (female OPD1, female OPD2 and EPI; male OPD and dispensary) with a weekly rotation. Initially it was planned to also include the male caretakers waiting area at the entrance of the hospital but it was decided not to do interviews there as the men waiting there are usually caretakers of patients being hospitalised or of women coming to deliver or accompanying female patients or female caretakers of children coming to the OPD. In total, 351 questionnaires have been administrated:

- 142 with adult women
- 97 with adult men
- 112 with caretakers of children (male and female)

Some supplementary questionnaires have been done beyond the initial 315 in order to be able to replace eventual unusable questionnaires due to reporting mistakes.

Inclusion and exclusion criteria

The qualitative part of the study included all medical staff in the OPD who were involved in the prescription pathway, comprising doctors, pharmacists and dispensers, as well as purposively selected key informant patients/caretakers (all adult patients and/or caretakers of consulting children) attending the OPD over the course of September 2014.

The quantitative part of the study included randomly selected, adult patients and caretakers of consulting children attending the OPD from 19 October to 10 November 2014.

3.3.1 Interviews

For data collection related to knowledge and perception of antibiotics and antibiotic use, in-depth individual interviews were conducted. This qualitative method provides an emic perspective of people who are using antibiotics themselves, of families who care for patients and provide medication, of doctors who prescribe antibiotics and pharmacists who dispense medication. Specific aspects related to the research question were explored through semi-structured interviews. In this case the researcher followed a topic guide of open-ended questions. These were structured to build trust and rapport, encourage openness and honesty of respondents, with more emotive questions coming later on in the interview. This topic guide was held flexible to avoid the conversation taking on a 'vertical' nature. The researcher followed up on the answers and information the interviewees gave.

3.3.2 Participant observation

Observations were carried out as part of the data collection. Participant observation is a crucial qualitative method as it gives an account of what people say and what they actually do (Burgess 1984). It is therefore an essential method in combination with interviews.
Participant observation allowed the researcher to learn about details that the participants themselves would not have come up with during the interview. This is the case when interviewees do not consider information as worth speaking about or essential for the context. Thus, the strength of this method is that it gives an account of the "mundane and unremarkable features of everyday life" (Green and Thorogood 2004:148). To give an example, at the hospital the researcher could observe conversations and behaviours among patients, feelings of patients when receiving treatment, communication between patients and health care providers, the condition of the hospital, etc.
Covert observation was helpful to understand patients' complaints about ASB staff's rude conduct towards female patients. The room, where the interviews were conducted, was in the middle of the female OPD1 and 2. From the room's window it could be observed what happened while the women were waiting for their turn.
Nevertheless, in some situations it was experienced that the presence of the interview team influenced the setting in the sense that people deviated from their 'normal' practices due to the presence of an 'outsider' who was conducting the study (Burgess 1984). For example, some doctors were showing a friendly attitude towards the patients when they saw us, which was in contrast to what patients described in the interviews.

3.4 Data management and analysis

The crucial first step was to fully transcribe all interviews and notes taken during the observations. Data is stored without any information identifying the respondents and are only accessible by the principal investigator. The two research assistants who transcribed the recorded interviews signed a confidentiality agreement. At the end of the transcription process all data was deleted from the assistants' computer and is only stored on the PI computer.
A memo, one to two pages long, was written for every interview to summarise what was said in a more cohesive way for each theme. These memos formed the base of the qualitative data analysis using Nvivo. After finishing the initial coding of the memos, the results were broken down by demographics (age, education and gender) and put into a code report.
The manual analysis of these memos was inspired by a qualitative content analysis by Mayring (2010). This means that the transcriptions were screened for relevant information, which was then organised, coded, categorised and interpreted. This implies to reduce the material to only those passages essential for the work and to generalise the statements. A category (label) was attached to the statements in order to structure the data (Mayring 2010:67f). The content was analysed in

two ways: descriptively by describing data without reading anything into it and interpretively by focusing on what might be meant by the responses (Hancock 2002:17).
The empirical data was analysed in an inductive and a deductive way. This means that for the main part categories/codes were generated on the basis of data that was gathered. However, codes were also developed based on anthropological theory known prior to the research. For example, anthropological theoretical concepts that may occur as a code could be treatment-taking behaviour, illness perception, side effects and health-seeking behaviour etc.[12]
Continuous reflection on data is part of the creative process of analysis and necessary for contextualising and linking findings with anthropological theory. In order to work with the principles of good practice, the research process is clearly described in this report; validity of data is therefore ensured by a 'thick' description[13] of the research context and also by presenting deviant cases. The quantitative data was double entered into an EpiData database and analysed using EpiData Analysis (v2.2.1.183) software (see report in the annex).

3.5 Study limitations

This short-term study is designed to provide answers to current operational questions. Gathered data will not amount to long-term or multi-sited[14] anthropological fieldwork.
One limitation of this study might have been that the study team was restricted to the ASB hospital premises and could not conduct interviews in the communities in order to better understand living conditions of patients and caregivers and to have a more neutral stand. The study team was connected to the MSF network. This bias was tried to be balanced by carefully explaining the role of the anthropologist and her neutrality and strict assurance of anonymity and confidentiality. Additionally, the interviews with the doctors cannot be generalised for the Afghan context, as these doctors work according to the MSF guidelines and have to follow the MSF prescribing procedures. The doctors get further training on antibiotics and antibiotic resistance regularly.
Another limiting element of data collection was the fact that the team had to ask the health promoters and guards in the waiting area to find key informants for the interviews. After the first interviews the study team realised that all the respondents were educated and of younger age. However, after discussing with the health promoters and guards we could manage to collect experiences and opinions of respondents that were not educated and of older age.
Working with translators can also be limiting since the quality of the translation depends very much on the translator's soft and hard skills. This limitation was reduced to a minimum as both translators transcribed the interviews they had done and double-checked the translation while transcribing.
Finally, qualitative data is not a reflection of reality but always influenced by the presence of the researcher at the field site. In addition, the background of the researcher (gender, age, social status, origin etc.) will shape the research process. The researcher is well aware of this characteristic and therefore took a critical stance towards her position in the data gathering process and while analysing the findings.

[12] See Munro et al. (2007)
[13] Originating from Geertz (1973), a 'thick' description of human behaviour is one that not only explains the behaviour but also its context, so that the behaviour becomes meaningful to an outsider.
[14] Multi-sited fieldwork takes a comparative approach and studies phenomena at different sites and time periods.

4 Ethical aspects

Authorisation

Authorisation to conduct the study was obtained from the Ministry of Health of Afghanistan and from the MoPH Ahmad Shah Baba hospital director Dr Abdul Sattar.

Ethical review

The study protocol was submitted to the International MSF Ethical Review Board and to the Ministry of Health, Afghanistan.

Informed consent

Informed consent was ensured for all respondents of the study. This was done orally and written. In all the interviews respondents gave written consent.

The written informed consent was sought at the beginning of the conduct of individual interviews and group discussions. The research team explained the purpose of the study and its aim. All the questions of the interviewees were answered and clarified. It was assured that non-participation in this study would neither impact on their future care nor on treatment provision in any way.

The information sheet and informed consent form were translated into Dari. The questionnaires for the quantitative study were translated into Pashto and Dari. Every participant could read and sign the form in their preferred language.

5 Major Findings

This chapter concentrates on the major findings that will help to answer the following questions: how do patients, caretakers, doctors and pharmacists perceive antibiotics and antibiotic use? What do they know about medication in general and antibiotics specifically? For which illnesses do they take them and how do they use them? How do they recognise access to health care? Why do they come to Ahmad Shah Baba hospital? How do they perceive this health care facility and how do they see health personnel and their performance? What is the antibiotic seeking behaviour like? Who and what influences a decision? And how is antibiotic resistance driven?
Since all the gathered information is analysed from the perspective of patients, caregivers, health care providers and drug dispensers, the results will be presented according to these different understandings. The findings are underlined with quotations to give the voice to the people that were interviewed during the field stay.
This study will help to better adapt MSF's and MoPH's interventions to the needs of the population. The main question of how to better leverage patients' antibiotic seeking behaviour is to be answered and translated into appropriate action. In this sense the study not only benefits MSF's and MoPH's operations but also encourages discussions on decision makers' level regarding drug regulations in general and antibiotic use in particular.

5.1 Knowledge and perception of antibiotics and antibiotic use

5.1.1 General state of knowledge

The level of knowledge about antibiotics varied greatly among patients and caretakers. The most important characteristic in this regard is the level of education. Educated respondents spoke about the use and benefits of antibiotics but could also explain the risks and dangers in taking them. They did not talk so much about resistance, but mentioned the side effects of antibiotics.

> "It has side effects, in fact all medicines have side effects, though antibiotic has direct risk on humans; nowadays I myself have cold and little fever that if I see my health problem getting worse, I will start to take antibiotics."[15]

Educated respondents referred to the notion that if they use too many antibiotics, later on their body will get weak, in contrast to those who have a low level of education who want to take antibiotics to get rid of the problem 'quickly'. Again, others with a less educated background take antibiotics to strengthen the body in order to protect it.

> "Antibiotic is very strong medicines and also it make a little bit weak the body but if we use fruit with it, the side effect will be low and if we don't use with it, then the side effect will be so high to heart and other part of body. We use it [the antibiotic] for bacterial infection, if we get the fruit or vegetables, it is ok, if not then we have to use it because the other medicine does not work effectively to our body, and our people use different type of antibiotics, like injection. Two days before my sister–in-law came to this hospital, they gave her the pill form of antibiotics."[16]

Most respondents who lack knowledge because they "are illiterate" refer to another family member or relative who is educated, a doctor or has in one way or another knowledge and experience in using antibiotics. Uneducated interviewees did not possess knowledge acquired in

[15] Interview 9, MSF health promoter
The respective interview partner is consistently mentioned in footnotes. If more or other people were involved, it is directly stated before the respective quote.
[16] Interview 11, female patient

schools or universities but drew on empirically developed knowledge in terms of antibiotics. If they used a certain antibiotic with a positive outcome, they would want to use the same medication again when experiencing the same or a similar condition. If a family member or a relative was using an effective antibiotic, they would want to use the same one. Most of them could not cite the name of the antibiotic but described it by its shape, colour, form, packaging or consistence.

> "They usually bring the package of Amoxicillin and Azithromycin and tell them [the pharmacist] give this medication and when we [doctors] give them Paracetamol they don't accept it […]."[17]

Doctors explained that they stopped mentioning the name or showing the package of an antibiotic when prescribing it in order to avoid patients requesting the antibiotic again directly in the pharmacy without a prescription.

> "When we say to them that you don't need to take it [the antibiotic], they will accept and some people got from us that medicine; the next time they came and asked us for a different sickness the same medicine; there wasn't need for the same medicine and they pressured on me I had to tell them that we don't have it, […] or we hide the medicine; we try to not tell them the name of medicine, as there should be assistance of pharmacy that we don't have when we are hiding the medicine after asking from pharmacist they come back to me and they again ask …"[18]

In general, knowledge about antibiotics is related to experience and usage. Antibiotics that were effective and helpful are requested again by patients and caretakers regardless of their disease.

5.1.2 Cleaning the body from dirt

The word antibiotic was only understood by respondents who were educated or had heard the scientific term from the doctor or pharmacist. As a starting point the researcher 'learned the language' and used words people were familiar with when talking about antibiotics. Respondents employ terms like 'dirty drier medicine', 'zedi cherk' (anti-dirt or anti-inflammation) or 'zedi microbe' (anti-microbe), the 'orange pills' (Amoxicillin), the 'capsules' (Amoxil), 'capsules for dirt' or when the medication is for children, they call it 'powder syrup' (Amoxicillin for children). Likewise some referred to the packaging and number of capsules in the medication box, as this doctor experienced it:

> "They say like 'powder syrup', 'orange pills'. When they want to have Azithromycin, which is six capsules in one package, they say write us the 'SIX capsules'."[19]

Asking about expressions for antibiotics in the 'local language' – and these are mostly not literal, but metaphorical terms – gives insights into perceptions. The words 'anti-dirt' and 'anti-microbe' in the local terms for antibiotics imply that the medication is supposed to clean the body from dirt, i.e. microbes. In the families people just say "go and get the dirty drier medicine".
One respondent pointed to the image of a 'storehouse of microbes' that people live in in Afghanistan referring to the polluted, dusty and dirty environment.

> "Because of bad and polluted weather and dusty society, we always face dirt here, they most often like dirt drier medicine."[20]

[17] Interview 24, MSF doctor
[18] Interview 6, MSF doctor
[19] Interview 6, MSF doctor
[20] Interview 16, male patient

The dirty and dusty environment is believed to cause the 'disease' in the body, which results in the necessity to use antibiotics to 'clean' the body. Doctors and pharmacists likewise referred to the lack of hygiene, pollution, dirt and impurity of the society they live in as a reason why people used antibiotics. If the environment was clean, there would be less microbes and less disease. Respondents explained that by keeping their houses and compounds clean, they avoided getting sick. Many interviewees referred to the 'poor' people living or working with animals to be more prone to attracting microbes, getting sick and needing antibiotics. The human body is seen like the environment: When the body is 'clean', the body is healthy.

5.1.3 Cleaning the blood

Bacteria and microbes are considered to manifest in the blood, which results in illness. As explained in the chapter before, this is connected to purity and cleanliness; impurity is dangerous and makes a person sick. To effectively treat this ill-health condition antibiotics are needed. In the following quotation a man explains that microbes in the blood are responsible for the infertility of his wife:

> "We use anti microbe for the reason, the blood microbe should be killed that she could effort pregnancy Sometime it is used to make healthy that disease which we take from cows and animals and we use anti microbes medicine against blood microbes. When you do not have clean blood, you could not get pregnant."[21]

An MSF doctor explained that in some cases there might be a relation between bacterial infection and infertility. Both chlamydia and gonorrhoea can cause ascending pelvic infections and infertility, which can be cured by antibiotics.
Most respondents viewed antibiotic injections to be more powerful because they bring the medicine directly into the blood circulation. Only a few interviewees, and among them more women, preferred pills as under normal circumstances no medical assistance is needed to swallow a tablet. Additionally, every ill-health condition that is connected to blood – an injury, a wound, an infection, bleeding from the nose or the ears – needs to be treated with antibiotics. For example, internal and external injuries which do not require a hospital consultation are treated with antibiotics.,

The perception of using antibiotics after deliveries and menstruation is connected to the idea that blood is more likely to get infected with bacteria. During these times a woman's body is considered to be 'open', hence susceptible for dangers and infections. Loosing blood is seen as a harming factor weakening the body. Therefore, antibiotics are used to make the person "feel good". The intention of the doctor prescribing and the woman demanding it is to stop the bleeding as such, to stop the blood loss and weakness of the body, to protect the woman from infection and to purify the body from impure blood.
An elder female patient mentioned that she uses antibiotics for body pain, throat pain and women's health issues like menstruation and after delivery.

> "It [the antibiotic] is good medicine such as you have women's issues, body pain and throat pain, it cures them. I have good memories of that medicine, like when I had delivery I took it, I am very happy of it.
> Do you remember the name or shape of it?
> It was Ampicillin and capsules, one side was brown the other white.
> Those were for bleeding after delivery, that my parts of body were open on that time, for this reason they [doctor and family] took me medicine.

[21] Interview 20, male caretaker

[…]
It [the antibiotic] is good for our throat pain and period [menstruation] of my daughters, I have two young daughters at home, one of them is engaged, when we take this [Ampicillin], we feel ok."[22]

People think that menstrual blood and blood after delivery is impure. Purifying the intimate body parts is therefore considered most important, not only for body hygiene and good health but also for social, ritual and religious reasons – to be ritually pure for prayer and sexual intercourse.

All the interviewed women who mentioned that they use antibiotics after delivery emphasised that they do not get it in the Ahmad Shah Baba hospital but either outside the hospital premises in a private pharmacy or from another doctor. One woman had eight children and confirmed that after every delivery she took antibiotics. One of the MSF health promoters explained that people going to the pharmacy and asking for 'delivery problem medicine' will receive antibiotics from the pharmacist.

5.1.4 Protecting and strengthening the body

The idea of using antibiotics to protect and strengthen the body was a common feature found in numerous interviews. Respondents referred to antibiotics as a powerful medication against dirty things not only during disease but also for ill-health conditions without a doctor's diagnosis.
Also, antibiotics are believed to treat internally caused malaises. A low immune system and general body weakness were mentioned as reasons to use antibiotics.

"The antibiotic is making the body powerful against the disease, as I have learned in Pakistan that when bacteria entered to our body it will affect different parts of the body but when we use antibiotics it will easily remove it and will increase the level of efficiency in our body."[23]

An MSF doctor said that people want to take antibiotics because they think it is the only way to keep them healthy. Taking antibiotics became a normal thing; people got used to it, as this doctor describes:

"People are using a lot of antibiotics […], they take allergic and other medicines for their health they take antibiotics, they take Amoxicillin, Azithromycin. They themselves take them from the drugstore and they know the medicines' names; when we ask them, they tell us that I took capsules which have red and black cover.
[…]
They think that if we take [antibiotics], we will be healthy, if we won't take, we won't be healthy, if you give them other medicines, they don't take it, it is why they think we won't be healthy, if you don't give me antibiotics; they used to get habit with antibiotics."[24]

Another conception found in the interviews was the tendency that people generally overuse medication. In Afghanistan this is not only with pain killers and sedatives but also with antibiotics.

5.1.5 Powerful and famous medication

Another phenomenon related to the use and overuse of antibiotics is the fact that antibiotics became famous; the most famous one is Amoxicillin for adults and the powder syrup (Amoxicillin) for children. People take this antibiotic because they have either used it themselves or they have heard that it is a powerful and effective medication; or they got a recommendation from others or

[22] Interview 35, female patient
[23] Interview 4, male caretaker
[24] Interview 21, MSF doctor

the pharmacist or doctor prescribed it. Some people don't know any other medication but Paracetamol and Amoxicillin.

> "They take most often Amoxicillin and Amoxil or Ampiclox as I am in the area, they ask a lot for, and they are famous there. [25]

> "Because I am illiterate and my husband is also illiterate, for example, when we have headache, I usually ask for Paracetamol because it is pain killer and we have stomach, we say please give us the medicine that can easily kill the bacteria."[26]

5.1.6 Rapid-acting medication

Antibiotics are believed to 'quickly' cure illnesses. In an environment where people endure social suffering because of instable and insecure living conditions and where bad weather and dirt are believed to cause illnesses a medication that gives quick relief is seen as an important characteristic.

> "Whenever we feel pain in our body we take antibiotic and it affects very quickly and is effective to our body.
> […]
> Because the people knew that it effect quickly; even those village people when they get antibiotics it affect them they came frequently and ask the same medications."[27]

> "It is so powerful and when there is a problem it quickly effect to it and also when there is a problem in my urine it also effect quickly to that part of my body. There is also another kind of medication in the name AUGMENTINE and is used for wounds."[28]

> "It affects quickly that is why we use antibiotics to get rid of the problem.
> How can you compare antibiotics with other medication? What is the power of antibiotics?
> Antibiotics quickly effect on the problem rather than other medication."[29]

5.2 Health-seeking behaviour

Health-seeking behaviour in terms of illness refers to those activities individuals undertake in response to symptoms. Health-seeking behaviour is influenced by a large number of factors apart from knowledge and awareness. Among different populations, this behaviour, particularly in the rural communities, is a complex outcome of many factors operating on individual, family and community levels including their bio-social profile, their past experiences with the health services, influences on community level, the availability of (alternative) health care providers including local practitioners and last but not the least their perceptions regarding efficiency and the quality of services.

Before people decide on the treatment, they need to evaluate their ill-health condition. Normally every illness of any family member is discussed among the married couple or inside the nuclear family; in more serious conditions the elders from the extended family will be consulted. In the context of Afghanistan the decision what to do and where to go is taken by the male head of the family or by a male (elder) person. Women's health issues are discussed and decided among the female family members. An unmarried woman talks to her mother, a young married one is supposed to consult her mother-in-law.

[25] Interview 25, health promoter
[26] Interview 13, female patient
[27] Interview 11, female patient
[28] Interview 15, male caretaker
[29] Interview 27, female patient

5.2.1 Self-medication

On the lay, non-professional level of society ill-health is first recognised, defined and health activities are initiated. Self-medication at home is the first step taken. It might have the advantage that the visit to the doctor becomes unnecessary but it could delay health-seeking for more serious conditions. Almost all respondents confirmed that they have medication at home and many store leftover antibiotics to have them right away when they need them. This characteristic is related to the insecure environment Afghan people live in; curfews are a daily reality and women, when they do not have a male person to buy the medication or to go to the health facility, cannot access health care. Additionally, self-medication is saving time and at a first glance avoiding costs. When it was not the 'right' treatment, people weigh if they have enough financial resources, time and convenience to visit a doctor. Time is often a major factor, but mainly for women, as waiting and being seen by a doctor is not compatible with household responsibilities and with culturally defined gender perceptions. Especially at Ahmad Shah Baba hospital all female patients and caretakers we talked to complained about the long waiting hours; in the worst case they are sent back home and asked to come again the next day. Apart from this 'going to a health centre' as such is a problem for women. They need a male companion and suffer from the pressure they experience from their husband, father, brother or other male family members. In numerous cases, while interviewing younger female caretakers or patients, they received calls and asked after 10 to 15 minutes if the interview would be finished as they had to rush home. Some women do not even receive permission at all to come to the hospital as this health promoter recounts from her experience:

> "Here in ASB area usually women are not allowed to seek health facility, two days before I was discussing with a woman having a malnourished baby, which did not have a good health condition, and I asked her why she did not bring her child a bit early and she replied that 'my husband did not give the permission to go and seek health facility for my child'."[30]

> "There is also other influence that the patients face; it is family problems. The husbands do not let them to come for check-up and of course the far way of home has other impact on patient. I had before coming here a patient who was certainly very sick; she came secretly from her husband and said that 'my husband did not let me to come here for therapy'."[31]

The same doctor recounts an incident when one of her patients was picked up from the ASB hospital and beaten by her brother-in-law:

> "[…] we had a patient whom her brother-in-law had come and beaten her in ASB hospital [in asking her] why you are late."[32]

People also try to keep former medication packages to be able to request the same one again directly in the pharmacy without a doctor's consultation.

5.2.2 Doctors and pharmacies

Numerous drug stores are spread all over the country. In the building near the Ahmad Shah Baba hospital alone are five private pharmacies located (Fig. 4). However, governmental pharmacies are less widespread. In Afghanistan there are no drug regulations. People can get any drugs in any pharmacy without a doctor's prescription. Furthermore, the black market flourishes as the drugs are cheapest there.

[30] Interview 22, MSF health promoter
[31] Interview 21, MSF doctor (Her husband went to Pakistan, so she could go to see the doctor)
[32] Interview 21, MSF doctor

In most interviews participants emphasised the fact that in private pharmacies drug vendors without pharmaceutical education hand out drugs, which is a major driver for antibiotic overuse.

> "These private pharmacists do not know anything regarding the power of drugs, even they give addictive drugs like Morphine to the people, which caused them untimely sleeping; in these kind of pharmacies the people which are working as a pharmacist [here a drug vendor is meant] they don't have primary education, they just know the name of drug and finish."[33]

Governmental pharmacies are said to be better in terms of educated staff. The quality of drugs is also higher, even though international standards are not met and the drugs are more expensive.
Also in remote villages drugs are available, as all respondents confirmed. However, this does not necessarily mean that a drug store or a pharmacy is available, rather that people sell drugs in their homes; the critical point, according to the respondents is in which quality.
It is again a financial decision to buy directly in the drug store or at the black market. People would in the majority of cases prefer to see a doctor if they could afford it. But in the Afghan and especially ASB context doctors are used to seeing patients that come with a whole bundle of drugs (Fig.3) already in their pocket.

Fig. 3 drug supply of a patient

Fig. 4 private pharmacy near ASB hospital

Respondents continuously emphasised the differences in the quality of drugs. The best quality comes from 'abroad', from Western countries and 'America'. Medication of worst quality is from Pakistan. This perception might be related to the bad relationship between Afghanistan and Pakistan. However it was also reported that for serious conditions people went to Pakistan for treatment. The better drugs come from India and China. In reply to the question where people can buy drugs, a pharmacist explained:

> "If it is possible [financially] they would buy from governmental pharmacies because it has higher quality medicine than private pharmacies and those people who come from far away, like different provinces, it is difficult for them to find their way to governmental clinics or pharmacies, mostly they go to private clinics for therapy where they get their prescription for private drugstores.
> […]
> Where do the private drugstore owners buy their drugs?
> In Parwaan hotel there are wholesalers who import drugs from Pakistan, India and China. The pharmacists according to society interest, they bring medication from there.
> What about the quality of medicine?
> It is visibly written on top of the medicine, made in Pakistan, which has the lowest quality, unless the medicine which is high quality, it is extraordinary expensive such as: Beecham Company[34] which

[33] Interview 1, male patient
[34] The Beecham Group plc was a British pharmaceutical company. It was once a constituent of the FTSE 100 Index. Beecham, after having merged with SmithKline Beecham, merged with Glaxo Wellcome to become GlaxoSmithKline (GSK). GSK still uses the Beechams brand

> produces high quality medicine; its medicine is very expensive and the China and India medicine are good as well."[35]

When patients go to see a private doctor, they generally buy the drugs in the private drug store attached to the doctor's cabinet. If people need or search for a special drug, they go to many drug stores until they can find it. In most cases they start at the nearest pharmacy to their homes or where they had their consultation.

5.2.3 Ahmad Shah Baba hospital

What are the reasons and why do patients, caretakers or family members decide to come to Ahmad Shah Baba hospital? Since MSF started working in the hospital (2009) it was understood that 'foreign' doctors are working there and that drugs are of good quality. People come to ASB hospital for different reasons:

- The drugs are free.
- The drugs are of good quality.
- 'Foreign' people are working there.
- 'Foreign' drugs are prescribed.
- It is close to the place where the people live.

These factors can be stratified into patient characteristics as it became clear that poor and uneducated people are coming because the medication is free, wealthier people come because ASB provides good quality medication. And for both groups it is important that 'foreign' people are working there. During the interviews with doctors they revealed that in order to reach the same effect in treating patients in their private clinic, they have to prescribe more tablets because the quality is so bad:

> "[…] there are much differences between ASB and my private clinic; for example you could find good quality medicine here, like for burning thighs you need to take half of tablets that we give them three tablets but I give them in my private clinic 10 tablets according to quality it differs, like for gonorrhoea here in ASB hospital we prescribe three tablet but in my private clinic according to quality I prescribe six tablets, there we try to prescribe them the good quality medicine and I used to try to write for them from good company products."[36]

Free medication is a driver for people to come to the hospital – not only because they are sick and cannot afford it but also because they want to have drugs they can store at home in case they need it urgently. Doctors have observed that people are coming without any ill-health condition.

> "[…] also some are asking for antibiotics a second and a third time after consultation in ASB hospital but they are not sick, in fact they are asking for themselves but they take them [the antibiotics] to their other members of family or relatives."[37]

ASB has also some negative reputations. In several interviews mostly female patients complained about the long waiting hours in the hospital and proposed to increase the consultation rooms in order to serve more patients. Rough and unfriendly behaviour of women guards in the waiting area was negatively observed by patients, caretakers and others including myself.

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name in the UK for its over-the-counter cold and flu relief products. http://en.wikipedia.org/wiki/Beecham_Group (accessed 23 December 2014)

[35] Interview 30, MSF pharmacist

[36] Interview 21, MSF doctor

[37] Interview 6, MSF doctor

> "Financial is a factor that influences our decision making where we should go for treatment because we are poor people if we had money we would never come here because here the women guard are not doing their works honestly [in the meaning of friendly]."[38]

Some patients decide to leave the hospital before it is their turn to see a private doctor, even if they came here for financial reasons, because of the long waiting hours and the pressure from their family. . In regard to the medical consultations, patients complained about doctors not taking enough time to talk to them and not listening to their worries. In their opinion they should improve their behaviour in dealing with the patients and should prescribe 'more' medication.

5.2.4 Visiting a *Mullah*

In the Afghan context of Ahmad Shah Baba hospital patients and caretakers and medical personnel confirmed that alternative therapies do not play a significant role. They only mentioned the *Mullah.* Mullahs are Islamic clerics or Mosque leaders. In Afghanistan it is said that less educated people in the cities and especially from remote villages go to Mullahs who read koranic verses for the mental and physical well-being. They also treat ill-health conditions such as epilepsy, jaundice, headache, weakness, flatulence, the child that cries a lot etc. Mullahs are consulted for infertility problems, to help finding a lover, for unemployment reasons and very generally to find good luck. However, for medication and especially antibiotics no one would go to see a *Mullah*.

5.3 Drugs, medication and antibiotics

People usually get antibiotics from a governmental pharmacy, a private pharmacy, at the black market or in hospitals such as ASB hospital. Where they go depends on their financial situation. Amoxicillin is easy to get at the pharmacy:

> "Maybe 30% of antibiotic is available there [private pharmacy] but in ASB the doctors don't pay attention to the wrong expectation of the patient, they are not acting to the patient what they say that they prescribe for them; but outside of here whatever you want you can get it because there the money is the issue."[39]

In most circumstances the male members of the family go to buy the drugs at the pharmacies. It depends very much on the family structure and family composition. In some cases elder female respondents confirmed that they can go to buy medication themselves. For younger ones this is not the case.

> "Here are a lot of people who don't want their women and sisters to go out or for medication. It is the common problem that we have now …."[40]

In very general terms it is not at all a problem to get drugs. The crucial points are in which quality people are able to buy the drugs, what the financial possibilities are, how they get the drugs – with or without a doctor's prescription – where they buy them, which distances people accept to cover, if security allows them to go at all and finally if the drug store is open at any time.
Concerning the opening hours it seems that some private drug stores are only open in the afternoon as they are attached to a private clinic and the doctors working there open the store right after they have finished working in the public or governmental health care sector. On the other side many of these drugstores serve their clients until late in the night.

[38] Interview 13, female patient
[39] Interview 19, health promoter
[40] Interview 21, MSF doctor

5.4 Antibiotic (mis)use

Antibiotics appear to have power even before they are used. The sole idea of getting an antibiotic with its innate healing power makes it the most favourite medication. Receiving such a powerful medicine makes people confident in getting cured. In Afghanistan the cultural value put on antibiotics lies in this meaning of being an effective strong medication. Antibiotics free the patient and the health care provider of their fears.

5.4.1 Determinants influencing patients' antibiotic (mis)use

Lack of knowledge

A major factor influencing people's antibiotic use is patients' and caretakers' knowledge and behaviour**.** First of all, most of the respondents did not differentiate between viral and bacterial infections, neither were they aware of the fact that antibiotic misuse can cause resistance.

In all discussions it was emphasised from patients', caretakers', health care providers' and pharmacists' perspective that especially less educated people lack knowledge, use more antibiotics and use antibiotics for 'everything'. Their drug intake is allegedly incorrect. It was insisted on the fact that educated people would rather believe in the doctor and follow doctor's instructions.

Higher educated interviewees knew about resistance. But in most cases it was thought that the body or person gets resistant against the antibiotic rather than the bacteria. If the antibiotic did not bring about positive effects anymore, people would request 'more pills' at the pharmacy

Even minor diseases or ill-health conditions, like sore throat, pain in the chest, pain in the belly etc., people want to treat with antibiotics.

Demographic profiles of patients and caretakers did not correlate with the decision to use an antibiotic or not, unless people come from far away and wanted to be on the safe side in using an antibiotic.

Environment

In all the interviews the 'dirty', 'dusty' and 'poor hygienic' environment was mentioned as the primary reason why people 'should' use, 'need', and 'want' to take antibiotics.

> "Everyone knows that the weather and our hygienic systems are not good, that so they come and always ask for antibiotics, they think we can treat bacteria only with antibiotics, nothing else."[41]

Antibiotics are strong and fast

Antibiotics are believed to be the strongest drugs and to react faster and quicker than other medication. Poor people's motivation to have 'strong' medication is related to saving time and money. A pharmacist explains the motive of getting quick relief with people's fear of the worsening of their condition, which would result in a longer course of disease and an additional financial burden for the family.

> "Because the people around here are mostly poor people, they want to get rid of the problem quickly, so they ask for it because they are worried if the bacteria become more and more and cause a big problem to them at that time they can't go to see the private doctor and pay the fees and drugs."[42]

Previous experience

[41] Interview 2, MSF doctor
[42] Interview 34, MSF pharmacist

Patients and caretakers repeatedly mentioned that they would try to get the same antibiotic again, if they made positive experiences with it in the past. Others said they remember what the health care provider advised to take and ask for the same one. Doctors confirmed that patients come with their package and insist on getting the same drug again. Patients likewise follow recommendations from others who share their knowledge and positive experience with antibiotics.

> "[…] when they are communicating with their families and their relatives, [they] tell them this medication was so strong, go and use this medication for your health condition."[43]

Over-the-counter medication and street vendors

Private drug stores and drug vendors working in these pharmacies are one of the major drivers for antibiotic overuse. Findings clearly showed that in most private drug stores untrained drug vendors are working who lack proper knowledge and recommend using antibiotics in any case. This result is especially interesting as in most low-income countries, and also in Afghanistan, people first approach the pharmacist before they consult a doctor. Therefore the drug dispensers have a great deal of influence on community drug use and often 'act' and 'replace' the doctor.

Pharmacists' recommendation

People who directly go to the drugstore depend on what the pharmacist explains and recommends. Selling drugs in a private pharmacy has monetary interests and benefits. People also perceive that a bigger amount of drugs is better.

> "Yeah, they [the pharmacists] give us the recommendation which drugs we have to use and they also tell us, if you don't get better with these medications you can come back to us to do revision on the medications."[44]

> "I ask the pharmacist and he gives me that [antibiotic], when I take that my disease gets cured, […] the pharmacist will know what I need; he will know."[45]

Symbolic value of being sick

People say that it is important to 'get' medication, to get 'good' medication; and by good medication they do not refer to the quality but to the quantity.

> "Because our people have wrong expectation and our doctors were not specialists in their fields when I was working at IBN SINA [governmental training hospital in Kabul centre]. There were doctors that usually prescribed the patients antibiotic for sore throat, which is not the correct treatment […] in the villages if you write one kind of medicine for patients they will not accept, they says: "I am not getting better with this please write down three or four kinds of medication", otherwise they will not accept it."[46]

Apart from the importance to get many drugs, it is crucial for the people to get many antibiotic drugs. In a metaphoric way this means that the doctor has recognised, accepted and confirmed the condition of the patient being sick. To get a diagnosis and a treatment and to receive prescribed antibiotics has a symbolic meaning for the patient. He or she is 'allowed' to suffer. In an environment where people deal with insecurity, deprivation, political pressure and daily suffering being sick has its own significance. Seeing a doctor is an important step in active coping with this

[43] Interview 24, MSF doctor
[44] Interview 26, male patient
[45] Interview 16, male patient
[46] Interview 2, MSF doctor

situation. Receiving treatment represents mitigation and is an important sign for the individual and the people around them.

5.4.2 Indications for antibiotic use from the patient's perspective

In a very general sense the desire to use antibiotics in Afghanistan results from the idea that the dirty environment is responsible for illness and disease; with the antibiotics people intend to 'kill' this dirtiness and 'fight' the bacteria inside and outside the body.[47] To get cured and to be in good health people desire to use antibiotics.
Antibiotics are used

- to 'kill'/'dry' bacteria and microbes
- to treat infections inside and outside the body

  "AB is kind of medicine when it is contagious disease definitely AB is the only answer as preliminary assistance of the disease, they like to use serum and injection, AB is the first step of therapy whenever it is needed, the contagious microbial disease would not be cured other than with AB, for example for pneumonia or tuberculosis is compulsory to use AB but fever and flue can be cured automatically."[48]

- to treat wounds

  "We use it for child and adult chest dirt and we also use it for body wound that dries the fresh wound or where your head crash we use for the wounds the dirt drier medicine that avoid the wound form watery condition."[49]

- to treat fever
- to treat coughing
- to treat sore throat
- to treat common cold
- to treat diarrhoea, vomiting and disgorge in children
- to comfort pain in general like chest pain, throat pain, bone pain, teeth pain, pain in the stomach and worms in the stomach etc.

  "Whenever we have intensive pain we use antibiotic one time, two or three times a day after meal"[50]

  "A person who has toothache or is injured or a person who was beaten by knife and any problem or injury which is connected with blood of course they us AB, they ask for the capsules which is for wound, they know it."[51]

- to treat illnesses such as pneumonia, tuberculosis etc.

Doctors state that patients use antibiotics for any symptoms or any disease, for minor infections or a common cold; the importance is to use an antibiotic. As one doctor put it to explain the 'universal' use of antibiotics, "they eat it like a sweet."[52]

5.4.3 Factors influencing doctors' prescriptions

The doctors also attributed the high antibiotic use to the dirty and dusty environment with poor hygienic living condition which is an influencing factor in their prescribing practice. The external

[47] Please refer to chapter 5.1
[48] Interview 37, pharmacist
[49] Interview 16, male patient
[50] Interview 5, female caretaker
[51] Interview 25, health promoter
[52] Interview 6, MSF doctor

and internal causes are interrelated; respondents view the external factors as a cause for the low immune system and vice versa a low immune system needs antibiotics to get stronger.[53]

Knowledge, opinion and behaviour of medical professionals

Factors that influence inappropriate prescription of antibiotics by medical professionals comprise insufficient knowledge, incertitude in diagnosing the patients, available time for a consultation (in Ahmad Shah Baba doctors take around 4 to 5 minutes per patient)[54], fear of complications, criticisms of patients, fear of reputation (more relevant in the private clinic of the respective doctor) etc. and most of all the perceived expectations of patients receiving antibiotics.

Regarding lack of knowledge, wrong diagnosis, fear of complications and wrong medication the interviewed doctors confirmed the changes they can see in their own prescribing practice. Some talked about their former experience in other hospitals or explained how they prescribed before MSF came to Ahmad Shah Baba hospital. All of the doctors confirmed that they had prescribed a lot more antibiotics due to lack of knowledge and in most cases to fulfil the patients' expectations.

Compliance with the patient

Generally, doctors working in Ahmad Shah Baba hospital are obliged to work according to the MSF guidelines. However, all these doctors also work in their private clinics.[55] Under these conditions peer pressure plays an important role in terms of fulfilling patients' expectations. The fear of losing patients when refusing to prescribe antibiotics is crucial.

Patients who come from far or deprived areas, female patients and poor people are prescribed antibiotics more readily.

Today doctors at Ahmad Shah Baba hospital mainly have to deal with patients' expectations and patients' frustrations in case they are not receiving the anticipated antibiotics.

> "Most often people ask me about antibiotics but we do our own job; but it is better than before because they asked a lot about. Now with our advice it got better."[56]

Doctors also spoke about patients and caregivers that expect to be treated in a different way than the other patients. They put pressure on the doctors by telling them what they 'have to' prescribe them. Doctors characterise these people as influential, such as people working with the police, military, advocates etc.

> "The pressure mainly comes from police and elders of the area; they have wrong expectation from us and they say doctor write down this and this medication.
> Before just two groups of people influenced our decision making; they were police and elder of the area because there was no control before but now there is too much restriction and control; in that time there was just triage ward and most of the staff of the hospital they were coming with their books and saying doctor please write down these kinds of medication to me and there was no stamp and registration number on it and in that time there was more expectation toward antibiotics."[57]

> "I have seen those people who are not accepting doctor's advice who are influential people in the society such as: attorney alley, who says I am a person were you have to accept my word, several times we have faced this problem, or those people who are working with security issues or police who ask us inevitably give me those medicines."[58]

[53] Please refer to the chapter 5.1.4

[54] MSF insisted that doctors take more time with each patient, which means they would have double the time but do not take it. High patient load, lack of intellectual challenge and falling back into a routine without proper individual consideration of a patient's condition play a role too.

[55] The way doctors work in their private clinics was not assessed but these experiences were certainly incorporated in their answers.

[56] Interview 21, MSF doctor

[57] Interview 12, MSF doctor

[58] Interview 6, MSF doctor

Another difficult feature seems to be the MSF staff working at Ahmad Shah Baba hospital. Doctors complain that they cannot refuse giving antibiotics to them as it would interfere with their working-relationship.

> "[…] another major problem that we face comes from the MSF staff; they come for check-up with their prescription letter [from another doctor] to give them those medicines."[59]

What MSF doctors do and prescribe in their private clinics was not asked during the interviews. Doctors spoke about how they work at Ahmad Shah Baba hospital and reflected on their experiences with patients' demands for antibiotics inside the hospital and on antibiotic prescription practices in general in Afghanistan.

Reducing antibiotic prescriptions

Doctors are torn between the prescription practices according to the MSF guidelines and the expectations of the patients. They make strong efforts to reduce antibiotic overuse. All the doctors explained elaborately how they talk to patients and try to explain the medical indications for antibiotics.

> "I am telling them that they should not take antibiotics much because taking a lot of AB can harm; it is poison and it damages microbes like this taking further than its extent can damage your blood cells, make you anaemia and weak and it would decrease your resistance, this is the time when they ask us medication.
> How do you explain it to the patients because they are not medical people?
> In our own language without mentioning the medical terms, I am telling them that frankly that the medicine is poison which microbes during competition are killed and can dry blood and can make your blood cell damage and resistance decrease, if your body resistance decreases you become weak than medicine can makes impact on your body, this is the words we tell them in our common language."[60]

All the MSF doctors confirmed that they have improved their knowledge on antibiotic use and antibiotic resistance through the MSF trainings and workshops. Working according to the MSF guidelines seems to be convenient for most of the consultations. Regarding some ill-health conditions when the doctors diagnose more than one disease, they complained that the MSF guidelines do not give the appropriate treatment.

> "We have different and complicated diseases that we don't have them in MSF guideline like one patient needs to take for his two different diseases different medicines but in MSF guideline we have just one disease prescription which for the second disease we don't have; overall here we have restrictions over medicines or we can say that we have limitations on medicines, for example one comes and say us that I have sore throat whenever we check them here we find second disease like fever and vocal problem in patient as well, that in MSF guideline says you should take them one disease medicine and for the other diseases there is no prescription."[61]

> "There are some pathologies which are not mentioned in MSF protocol especially in ear and throat wards we can work according to MSF protocol but if there is a patient which in the MSF protocol there is nothing for him/her then we refer to governmental protocol."[62]

[59] Ibid.
[60] Interview 21, MSF doctor
[61] Interview 6, MSF doctor
[62] Interview 12, MSF doctor

5.4.4 Perceived risks and side effects of antibiotics

Respondents revealed that antibiotics have to be taken according to the doctor's prescription and that incorrect use may cause health risks or even death.

> "For me everybody has resistance against antibiotics; if there are people who take more antibiotics in this case their body develop resistance against the antibiotic then the antibiotic will not affect well in their body and also people exist in the society when they take one pill of antibiotics their body will show sensitivity against it ,even there are people who take antibiotics their temperature will definitely go down and blood will come out from their mouth.
> What do people do when the antibiotic does not work effectively?
> Then the peoples will take more and more."[63]

> "If you take antibiotics irregularly or from extent which doctor prescribed of course there you find risk; eventually it will cause you death."[64]

> "The risk of the medicine [antibiotic] is when you use it continually contrary to doctor consultation it has bad risk on the body which even results in human death."[65]

Most uneducated people did not understand resistance but said that antibiotics may have some risks or bad impact on the body. Some experienced that the antibiotic did not work and came back to the doctor or pharmacist with the prescription to ask for another one. They did not attribute it to any resistance but thought they needed additional and stronger medication.
Other respondents talked more about the side effects when taking antibiotics as in their opinion "every medication has certain side effects". They mentioned that one can get weak when using too many antibiotics over the course of several years. Others said that antibiotics should be taken during or after the meal as it might cause pain in the stomach. One respondent emphasised the fact that it would cause problems in the stomach, if a healthy person swallowed antibiotics. Another respondent explained the negative effect of using antibiotics over years:

> "As much as I know my child had disease when he was one year old, the doctor gave him antibiotics. We gave him antibiotics till his thirteen years, now I see some big problems on his body like he has memory weakness and he gets fever in every winter."[66]

In other interviews respondents did not see any risks in taking antibiotics; in contrast they considered it strengthening the body:

> "Antibiotic in general is a good medication; there is no risk while taking antibiotics. My classmate was a body builder and he used antibiotics, now his body gets enlarged day by day.[67]

However, the idea that medication in general and antibiotics especially have side effects or may cause some risks did not bias the positive perception and reputation of antibiotics.

5.4.5 Dealing with antibiotics – leftovers

A phenomenon that highly contributes to antibiotic resistance is how patients 'deal' with their antibiotic medication: Do they follow the doctor's prescription? Do they finish the drugs prescribed

[63] Interview 1, male caretaker
[64] Interview 20, male caretaker
[65] Interview 32, male caretaker
[66] Interview 9, health promoter
[67] Interview 4, male caretaker

or do they stop when they feel cured? What do they do with the remaining medication? Answers to these questions will give insights into the problem of antibiotic resistance.
Findings suggest that rather uneducated people do not take the medication according to doctors' prescription or pharmacists' recommendations. In all the interviews patients and caretakers as well as health care providers had the same opinion that the educational level plays a major role in adhering to doctor's prescription, hence finishing the prescribed antibiotic drugs. They all agreed that educated people better understand what the doctor says and trust him more.

> "Those who are educated people they always follow the doctor's instruction and who are uneducated they usually deny the doctor instruction and use according what themselves want. And Afghanistan peoples mostly are not following up the instructions."[68]

> "90 % of the people do follow our instructions and the rest 10% don't follow our instructions due to their low level of education."[69]

Patients and caretakers confirmed in the interviews that they would stop the intake of drugs if they felt cured and would not continue taking pills until the package or prescribed amount is finished; this is also because they think there is no need to take medication when feeling healthy. Some even feared that it could harm them.

> "It is the problem that the people whenever felt healthy they stop taking medicine; for example when they get healthy of fever they stop taking medicine, it is few people who take their medicine to end, here we face those who are coming to take medicine; when we take them the medicine they told me don't give this medicine because I have it a lot at home; this is due to stopping of medication when they felt cured but there are some people they do as we said to them."[70]

To the question what they would do with the leftovers, all of them said "just keeping it". For the people it is important to have some medication at home to be prepared in case a family member gets sick. Others bring the drugs to their relatives back home in their villages or hometown.

> "What do people do with leftovers?
> They keep it. I also faced a person who had been coming to take medicine; before there was no triage, eventually I got tired of her, I told the foreign MSF staff that we have this kind of patient who comes in a day two or three time for medicine; when I asked she said, 'in summer I will go to Jalalabad and I take all those medicine there to my relatives'."[71]

Leftovers are mostly used for the same ailment again, but sometimes irrespective of the age of the patient. Interviewees underlined that they reduce the dosage for children. People who cannot afford it just buy less drugs or they stop as soon as they feel cured in order to be able to store the leftovers for the next course of illness.
Only in a few interviews respondents said they throw antibiotics away if they are expired. One young educated woman said she throws leftovers away in any case against her father's plea in order to take the medication according to the doctor's prescription.

> "I will keep it away from the hand of children, if it is already expired then I will throw it away, but if it is useful then we will keep it in a safe place for future problems."[72]

> "I don't like to have medication at home, but my father usually gets angry when I throw it away."[73]

[68] Interview 15, male caretaker
[69] Interview 33, pharmacist
[70] Interview 30, pharmacist
[71] Ibid.
[72] Interview 1, male caretaker
[73] Interview 27, female patient

5.5 Doctor-patient-relationship

Due to poverty, lack of education and out of practical reasons many people first approach a pharmacy to purchase drugs, only when they do not get better they might consider consulting the doctor. When people decide to see a doctor they prefer to go to a private clinic if they can afford it as the doctor there pays more attention to them and their suffering. But generally, every patient has the same expectation when consulting a doctor, be it at a private clinic or at a governmental health care facility: patients expect the doctor to pay attention to them as a person and not as a 'case of illness'.
Spontaneously respondents said that good words and good drugs are equally important for them. When asking deeper it became clear that patients value more receiving drugs.

> "It is up to the culture of the people, those who have high educations level they just listen what the doctor says and they act upon it and those who have less education level they just get happy with the drugs."[74]

> "In my view a good doctor should treat their patient very kindly.
> In your view what is a good behaviour between doctor and patient?
> A good behaviour of doctor with his/her patient is that when they give a good medication to them."[75]

In an informal discussion with an MSF employee he recounted that people said "a good doctor gives more time and more drugs" or "he [the doctor] has checked me with many machines – he is a good doctor".

Patient perception of MSF and ASB hospital
As doctors follow the MSF guidelines and significantly reduced the prescription of antibiotics, patients and caretakers started to doubt what MSF doctors and MSF pharmacists (dispensers) would do with the drugs. They are accused of keeping them for themselves or for richer people.

> "So if you can change the doctor and bring someone else instead because this doctor is neither paying attention to the patient nor well behaviour, as you [MSF] bring the medication for the people and they [the doctors] are not giving it to the people and also the same problem in the pregnancy [maternity] ward."[76]

> Police and elder of the area were also coming too much and also they were saying that the medicines are coming from the foreign people and you are not giving it to us, you are so jealous; we can't compare that time [before MSF worked in ASB hospital] to this time [now]."[77]

> "When they see a patient they should have enough patience, because there are doctors whenever the rich person who come for check-up the patient who is poor and it is his turn the doctor gives his turn to the rich person and the poor one comes as second."[78]

Findings also suggest that many patients complain about the long waiting hours and the medical consultations. Most said that the doctor does not even look at them and just prescribes a medication and tells them to go. Patients have certain expectations regarding the doctor's behaviour.

[74] Interview 22, health promoter
[75] Interview male patient
[76] Interview 11, female patient
[77] Interview 12, MSF doctor
[78] Interview 32, male caretaker

> "A good doctor should show sympathy to his/her patients, good word of mouth, good explanation of the drugs and discussing the problem of the patients.
> What do you mean by good behaviour of the doctor?
> Means when you go to him/her and you discuss your problem and he/she prescribes you the medication and tells you please take your medication on time, in case you don't get better you can come back to us."[79]

It was repeatedly underlined that the medication is highly valued by the patients but they also want to be treated with dignity.

[79] Interview 13, female patient

6 Discussion and recommendations

6.1 Discussion

This study focuses on perception of antibiotics and antibiotic use in the district hospital Ahmad Shah Baba in Kabul, Afghanistan. It is one of the few qualitative studies representing the perspective of patients and caretakers, doctors and pharmacists and their way of dealing with medication. The data speaks of the socio-cultural dimension of everyday life of the communities around ASB hospital that explains the extraordinary desire for antibiotics.

Ideas people have about the causes of all kinds of ill-health conditions and ailments depend very much on their socio-cultural environment. Do people attribute them to external causes (like in ASB area to the environment they are living in) or to internal causes like a weak immune system? The external and internal causes are interrelated; the external factors are the causes for the low immune system and vice versa; a low immune system needs antibiotics to get stronger. Associated to the interpretation of the cause of illness is how people deal with it: letting the disease run its course or taking medication.

Most of the patients and their families initiate self-treatment with medication they have stored at home or bought in a private pharmacy. The decisive factor is the financial and educational situation of the patient. Initially it seems money-saving to buy medication directly at the pharmacy and to refrain from consulting a doctor but when the patients do not get cured because they received the wrong drugs it most certainly results in spending more money at the end.

Private drug stores and drug vendors working in these pharmacies are one of the major drivers for antibiotic overuse. In most private drug stores untrained drug vendors lack proper knowledge and recommend using antibiotics in any case. This is especially interesting as in most low-income countries, and also in Afghanistan, people first approach the pharmacist before they consult a doctor. Therefore, the drug dispensers have a great deal of influence on community drug use and often 'act' and 'replace' the doctor. This is due to "[…] a variety of reasons, including the fact that more value is placed on drugs than on the medical consultation" (Radyowijati and Haak 2003:738). Over-the-counter medication (OTC) is a possibility when professional care is not available or affordable (Vuckovic and Nichter 1997). The authors suggest, knowing that many people take OTC medicines, it is worth researching how long patients wait to see a doctor, what are the criteria for doing so and how physicians react when patients reveal their self-medication efforts.

In general, people would prefer to see a doctor. Ahmad Shah Baba hospital is one of the places financially deprived families can access; in most cases people choose it because of the free consultation and medication; a few other, better educated families appreciate the quality of the drugs and the 'foreign' doctors. What all of them have in common is their high expectation of receiving many (antibiotic) drugs. It is common that people try all available resources to get cured. When people consult several types of different health sectors[80] at the same time or in sequence, they might be acting on the pragmatic basis that 'two or more heads are better than one' (Helman 2000:69). The aim of the patient is to become cured – and for that a person tries to access all available resources.

Poor education is a driving factor for patients' over- and misuse of antibiotics and disregard of doctors' recommendations. The high demand and perceived 'need' for antibiotics results from

[80] Arthur Kleinman defined three health care sectors that influence health-seeking behaviour:
Popular sector: lay, non-professional, non-specialist domain of society. Where ill health is first recognised and defined and health care activities are initiated. The main area is the family where ill health is recognised and treated firstly.
Folk sector: healers, TBAs that are not part of the official medical system, but have networks like healer associations. The WHO stated in 1978 that traditional medicine should be promoted, developed and integrated.
Professional sector: modern western scientific medicine (Kleinman 1981).

people's rationale that they live in a polluted environment: patients, doctors and pharmacists alike consider dirty and dusty living conditions as cause of 'disease' in the body, requiring antibiotics to 'clean' and 'strengthen' it.
Antibiotics appear to have power even before they are used. The sole idea of getting an antibiotic with its innate healing power makes it the most favourite medication. Receiving such a powerful medicine makes people confident in getting cured. "Only when the pharmaceutical is used the substance becomes a medicine. 'Wrong use' may render the best medicine useless or dangerous" (van der Geest 1996:164). In Afghanistan the cultural value put on antibiotics lies in this meaning of being an effective strong medication. Antibiotics free the patient and the health care provider of their fears. Antibiotics are not only used to treat illnesses but also to protect, purify and strengthen the body. It is not a new feature that people in different cultures view antibiotics as having the ability to prevent diseases (Radyowijati and Haad 2003:740).
Antibiotics are also used after deliveries and menstruation. This behaviour is connected to the idea that blood is more likely to get infected with bacteria. The intention of the doctor prescribing and the women demanding it is to stop the bleeding as such, to stop the blood loss and weakness of the body, to protect the woman from infection and to purify the body from impure blood. Interestingly a similar phenomenon was described in Burkina Faso. In a research on female genital cutting in Burkina Faso a woman tells that in order to get rid of the impurities of menstrual blood, she applies antiseptic products twice a month and antibiotics after every menstruation in order "to get the rest out". The woman uses antibiotics based on the concept that menstrual blood is ritually polluting and dangerous for the health (Jirovsky 2014:273).
Antibiotics are also used because they are believed to 'quickly' cure illnesses. In a war-affected context where people are faced with social suffering and insecurity, a 'quick' medication is considered an important asset. Additionally, patients prioritise quantity over quality and expect 'many drugs' to be prescribed.
Doctors working in ASB hospital follow the MSF guidelines. Therefore, they are restricted in their antibiotic prescription practice. They are torn between the feeling of satisfying the patient and working according to the guidelines. Complying with patients' expectations is one of the main reasons for non-scientific prescription. Numerous studies confirm that when patients expect an antibiotic they receive it and similarly when the doctor thinks the patient expects an antibiotic he or she would prescribe one more often (Mangione-Smith et al 1999; Britten and Ukoumunne 1997; Cockburn and Pitt 1997). In the ASB hospital context this is represented by the prescribing practice in terms of hospital staff that highly demand antibiotics and also get the prescriptions. Doctors' decisions on prescribing antibiotics are not always necessarily influenced by biomedical knowledge but rather by social and cultural factors (Geest 1996). In the context of ASB hospital these factors are the shared concept of the polluted environment and the necessity to use antibiotics.
Even though patients expect a friendly and empathetic behaviour from the doctor, it is central in their rationale to get a prescription that contains many different drugs. This is due to the perception that quantity is more important than quality (Radyowijati and Haak 2003) but also because this way the patient is confirmed in his suffering by the doctor's prescription of medication (Hulscher et al 2010:352). Receiving drugs marks an important step in the consultation process – its end. Not receiving any drugs would mean for the patient that "it can't be all that serious if the doctor didn't prescribe antibiotics" (Vuckovic and Nichter 1997:1296).

This report shows that among the current communities coming to ASB hospital the desire to use medication to appease physical and emotional suffering has an important cultural, social and symbolic meaning. As experienced in earlier research in war-torn countries (Iraq, Palestinian refugees in Lebanon), people have the tendency to generally overuse medication. In Afghanistan this seems to be the case not only with pain killers and sedatives but also with antibiotics. Afghanistan is a war-affected country and social suffering is a daily fact for the people living there. How people manage and make sense of life events in conflict areas is a central question. One coping mechanism is using medicines when feeling bad and using strong medicines when ill, but

also using medicines that give quick relief, such as antibiotics. In a context where people cannot actively do something about the situation they life in taking drugs seems to be something they can do to keep themselves healthy, to improve their own health and the health of their family members.

6.2 Recommendations

The following recommendations are drawn from the analysis of the field research, exchanges with national and international MSF staff working in Ahmad Shah Baba, discussions and debriefings with HoM and Medco of OCB and country representatives of MSF in Kabul. Informal discussions with colleagues on project level and discussions with other medical anthropologists are also integrated in the analysis. An extended literature review of articles and books related to medicine taking in general, antibiotic use especially, prescribing practices of health care providers, antibiotic dispensing, health-seeking behaviour and self-medication was done prior to the field research and was continued after the mission. Finally, the anthropologist's own field experience with MSF, especially in contexts of high drug intake, such as Kyrgyzstan and India, influenced data analysis and recommendations.
The recommendations are categorised and presented in regard to the study objectives. They are to be understood as general recommendations for antibiotic use and prescription practices in Ahmad Shah Baba hospital, i.e. they are addressed to MSF and the MoPH in Kabul.

Ministry of Health policies

- Discuss with the MoH and raise awareness on antibiotic over-use and resistance in Ahmad Shah Baba hospital (and in the country at all)
- Work together with the MoH on solutions how to address antibiotic use inside ASB hospital and the Afghan health system in general
- Impose stricter guidelines for doctors on antibiotic use
- Work on antibiotic protocols together with the MoH
- Discuss with the MoH on pharmaceuticals – which antibiotics to import – and restrict the sale of certain antibiotics in the pharmacies

For patients and caretakers

- Raise awareness through health promotion in the OPD of ASB hospital on consulting a doctor before going to the private drugstore
- Raise awareness through health promotion in the OPD of ASB hospital on the quality of drugs in private and governmental drug stores and market
- Focus on the dangers of expired drugs
- Explain in general the characteristics of antibiotics
- Explain the difference of viral and bacterial infections and when to use an antibiotic
- Elaborate on the risks of antibiotic use and development of resistance
- Explain why it is dangerous to over-use antibiotics
- Refer to previous experience of antibiotic use as this is an influencing factor for future demand of the same antibiotic
- Give information on negative effects of medication and encourage patients to talk about their fears and perceptions and daily struggles which lead to antibiotic use
- Show empathetic understanding of patients' difficult living conditions and discuss these constraints with them (patients adjust intake of drugs to their perceptions, life, situation, social, cultural and economic context)

In some western countries large-scale programmes have been implemented with messages like the following:
"Do bugs need drugs?"
"Common colds need common sense"
"Save antibiotics they may save your life"
"Antibiotics: get smart"
"She is only 5 years old and already has a drug problem: it's called antibiotic resistance"[81]

For doctors and prescribers

- Continue trainings and workshops on indications that justify the prescription of antibiotics
- Continue trainings and workshops on antibiotic resistance
- Continuously monitor the prescribing practices and use of MSF guidelines
- Discuss solutions with the doctors in case there is no reference which drugs to use in the MSF guidelines
- Discuss solutions with the doctors for the high demand of antibiotics of other hospital staff
- Train the doctors on their influence on patients – 'good' words and 'good' behaviour are very much appreciated
- Train the doctors on how to deal with the pressure of patients to prescribe antibiotics

For pharmacists and dispensers

- Train external pharmacists on the dangers of antibiotic over-use
- Train external pharmacists on antibiotic resistance
- Train external pharmacists on indications that justify the prescription of antibiotics
- Train MSF dispensers on how to deal with frustrated patients who do not receive antibiotics – which answers they can give
- Discuss with MSF dispensers on their daily experiences with unsatisfied patients and find solutions about how to deal with them

Programmes that intend to rationalise antibiotic use need to consider the different target groups and should involve the government, ASB hospital, health care providers and the general population including patients and caretakers in order to develop a national programme for 'appropriate antibiotic use'.

[81] Source: Finch et al. 2004. Such messages need to be adapted to the context in taking into consideration the 'dirty drier medicine' perception.

7 Concluding remarks

In this project in Kabul MSF-OCB is focusing at reducing mortality and morbidity among the population of District 12 in the area of Ahmad Shah Baba by providing free quality curative and preventive health care services in a district hospital.

Preliminary data indicates that over-prescription of antibiotics is a regular occurrence in Ahmad Shah Baba hospital in Kabul, despite programmatic measures being taken to rationalise antibiotic prescription behaviour. Very few studies have been conducted on this topic among the local communities in Afghanistan, most studies in the country focusing on antibiotic use and resistance among the international armed forces, and little or no attention was devoted to the Afghan population.

This study was undertaken to map the perceptions and approaches concerning antibiotics among clinical staff and patient population of this hospital. The findings in this report clearly suggest that the majority of the general population coming to Ahmad Shah Baba hospital lack knowledge about the risks using antibiotics incorrectly. Cultural factors are powerful influencing factors for Afghan people in terms of the usage of antibiotics. Therefore, these factors need to provide the basis in awareness-raising on antibiotic use and resistance.

With a culturally appropriate and sensitive health promotion intervention that is respecting the people and their difficult living conditions, MSF will be able to raise awareness on the risks of antibiotic use and the resistance that is associated with incorrect usage.

8 Annex

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8.2 Anthropologist's programme in ASB hospital, Kabul

week 1

Monday	01 September	Departure from Vienna
Tuesday	02 September	Arrival in Kabul, briefings
Wednesday	03 September	Arrival in ASB project briefings
Thursday	04 September	Literature review
Friday	05 September	Literature review
Saturday	06 September	ASB hospital visit and briefings, preparing the study
Sunday	07 September	1 male caretaker, 2 male doctor, 3 male patient, 4 male caretaker

week 2

Monday	08 September	5 female caretaker, 6 male doctor, 7 female caretaker, 8 GD female caretaker (4), 9 GD female HP (2)
Tuesday	09 September	Public holiday, questionnaire revision
Wednesday	10 September	10 female caretaker, 11 female patient, 12 male doctor
Thursday	11 September	
Friday	12 September	
Saturday	13 September	13 female patient, 14 male doctor, 15 GD male caretaker (2)
Sunday	14 September	sick, reading at home

week 3

Monday	15 September	16 male patient, 17 female caretaker, 18 female doctor, 19 female HP
Tuesday	16 September	20 male caretaker, 21 male doctor, 22 GD HP (1male, 1 female)
Wednesday	17 September	23 male patient, 24 male doctor, 25 male HP
Thursday	18 September	
Friday	19 September	
Saturday	20 September	public holiday
Sunday	21 September	26 male patient, 27 female patient

week 4

Monday	22 September	28 female patient, 29 female patient, 30 female dispenser/pharmacist
Tuesday	23 September	31 female caretaker, 32 female caretaker, 33 male pharmacist in private drug store
Wednesday	24 September	Preparing the questionnaire for the quantitative part of the study 34 male pharmacist in private drug store
Thursday	25 September	
Friday	26 September	
Saturday	27 September	35 female patient, 36 male dispenser/pharmacist
Sunday	28 September	

week 5

Monday	29 September	Public holiday
Tuesday	30 September	
Wednesday	01 October	Departure from Kabul to Vienna

8.3 Interviewees' profiles

Interview code	Date	Interviewee profile	Sex	Age	ethnicity	education	Province
1_IDI_CT_M	SU 07/09	CT for his sister	M	25	Tadjik	higher	Kabul
2_IDI_DR_M		Doctor OPD male	M	37	Pashto	higher	Kabul
3_IDI_PAT_M		Patient	M	18	Pashto	middle	Laghman/Kabul
4_IDI_CT_M		CT for paternal uncle's son	M	25	Pashto	higher	Nangarhar/Kabul
5_IDI_CT_F	MO 08/09	CT for her mother	F	18	Pashto	middle	Jalalabad/Kabul
6_IDI_DR_M		Doctor OPD male	M	40	Tadjik	higher	Kabul
7_IDI_CT_F		CT/Vacc and ANC	F	23	Pashto	illitrate	Kabul
10_IDI_CT_F	WE 10/09	CT for her child + vacc	F	23	Pashto	illitrate	Kabul
11_IDI_PAT_F		Patent	F	27	Pastho	illitrate	Pakistan/Kabul
12_IDI_DR_M		Doctor OPD paediatrics	M	39	Tajik	higher	Badakshan/Kabul
13_IDI_PAT_F	SA 13/09	CT for her child	F	30	Tajik	illitrate	Parwan/Kabul
14_IDI_DR_M		Doctor OPD paediatrics	M	40	Pastho	higher	Khost/Kabul
16_IDI_PAT_M	MO 15/09	Patient	M	24	Pastho	illitrate	Kabul
17_IDI_CT_F		CT for her sister's child	F	20	Tajik	higher	Kabul
18_IDI_DR_F		Doctor OPD female	F	42	Pastho	Higher	Laghman/Kabul
19_IDI_HP_F		health promoter	F	25	Tajik	higher	Pakistan/Kabul
20_IDI_CT_M	TU 16/09	CT for his brother's wife	M	40	Pastho	higher	Paktia/Kabul
21_IDI_DR_F		Doctor OPD female	F	42	Tajik	higher	Jalalabad/Kabul
23_IDI_PAT_M	WE 17/09	Patient	M	18	Pastho	middle	Konar/Kabul
24_IDI_DR_M		Doctor OPD paediatrics	M	48	Pastho	higher	Paktia/Kabul
25_IDI_HP_M		health promoter	M	40	Pashto	higher	Baghlan/Kabul
26_IDI_PAT_M	SU 21/09	Patient	M	28	Pastho	illitrate	Paktia/Kabul
27_IDI_PAT_F		Patient	F	16	Pashto	higher	Laghman/Kabul
28_IDI_PAT_F	MO 22/09	Patient	F	60	Pashto	illitrate	Jalalabad/Kabul
29_IDI_PAT_F		Patient	F	35	Tajik	illitrate	Kabul
30_IDI_PHARM_F		Pharmacist/dispenser	F	50	Pastho	higher	Kabul
31_IDI_CT_F	TU 23/09	CT for her twins	F	30	Tajik	illitrate	Kabul
32_IDI_CT_M		CT for his aunt's daughter	M	18	Tajik	middle	Kabul
33_IDI_PHARM		Pharmacist, private store	M	26	Pastho	higher	Jalalabad
34_IDI_PHARM	WE 24/09	Pharmacist, private store	M	25	Pashto	higher	Parwan/Kabul
35_IDI_PAT_F	SA 27/09	Patient	F	45	Tajik	illitrate	Kabul
36_IDI_PHARM_M		Pharmacist/dispenser	M	21	Pastho	higher	Laghman/Kabul
37_IDI_PHARM_M	SU 28/98	Pharmacist/dispenser	M	46	Tajik	higher	Kabul

8.4 Group interviewees' profiles

Interview code	Date	Interviewee profile	Sex	Age	ethnicity	education	Province
8_GD_CT_F_woman1[82]	MO 08/09	CT	F	40	Pastho	illitrate	Kabul
8_GD_CT_F_woman2		CT	F	42	Tadjik	illitrate	Kabul
8_GD_CT_F_woman3		CT	F	70	Tadjik	illitrate	Kabul
8_GD_CT_F_woman4		CT	F	70	Tadjik	illitrate	Kabul
9_GD_HP_F	MO 08/09	HP	F	50	Pashto	higher	Kabul
9_GD_HP_F		HP	F	37	Tadjik	higher	Kabul
15_GD_CT_M	SA 13/09	CT for cousin	M	22	Gujjiri	higher	Kabul
15_GD_CT_M		CT for cousin	M	17	Gujjiri	higher	Kabul
22_GD_HP_M	Tu 16/09	HP	M	48	Pashto	higher	Jalalabad/Kabul
22_GD_HP_F		HP	F	30	Tajik	higher	Kapisa/Kabul

[82] This group discussion was not part of the analysis as the woman left right after the introduction of the study.

8.5 Quantitative description of patient perception and practices

8.5.1 Objectives

A qualitative study into the contextual understanding of public attitudes and expectations surrounding antibiotics in the outpatient department (OPD) of Ahmad Shah Baba hospital was performed. The current questionnaire survey[83] aims to provide a quantitative counterpart to the qualitative assessment, by documenting among patients/caretakers attending the Ahmad Shah Baba OPD:

- the socio-demographic characteristics and health-seeking behavior
- the attitudes and perceptions on prescription of medication, within and outside the MSF OPD
- the knowledge and perceptions on antibiotics

8.5.2 Methods

Questionnaires were administered by two male surveyors in six different areas (female triage, female consultation, male consultation, male caretaker area, vaccination, and the OPD dispensary), aiming for a representative sample of 100 women, 100 men, and 100 caretakers of children (male/female). The questionnaire was administered between October 19th and November 10th 2014. Data was double-entered into an EpiData database, and was analysed using EpiData Analysis (v2.2.1.183) software.

8.5.3 Results

8.5.3.1 Patient characteristics and health-seeking behaviour

A total of 351 questionnaires were administered: 142 (40%) adult women, 97 (28%) adult men, and 112 (32%) caretakers of children (male & female) were interviewed. Places of interview are indicated in table 1; characteristics of interviewees are provided in table 2.

Table 1: Interview locations of patients/caretakers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

Place of interview	N	(%)
Female triage	71	(20)
Female consultation	78	(22)
Male consultation	120	(34)
Male caretaker	1	(0)
Vaccination	24	(7)
OPD Dispensary	57	(16)

Table 2: Characteristics of patients/caretakers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

[83] The questionnaire survey was conducted by Rafael van den Bergh, Operational Research LuxOR.

	N	(%)
Gender		
- **Female**	209	(60)
- **Male**	142	(40)
Age		
- **<20**	53	(15)
- **20-29**	130	(37)
- **30-39**	87	(25)
- **40-49**	43	(12)
- **50-59**	26	(7)
- **≥60**	8	(2)
- **Not registered**	5	(1)
Age of children of caretakers (N=112)		
- **<5**	43	(38)
- **≥5**	28	(25)
- **Not registered**	41	(37)
Marital status		
- **Single**	71	(20)
- **Married**	274	(78)
- **Widow(er)**	6	(2)
Number of children (Median; IQR)	3	(0-6)
Household size (Median; IQR)	9	(7-12)
Area of residence		
- **Urban**	343	(98)
- **Rural**	8	(2)
Level of education		
- **Illiterate**	167	(48)
- **Primary**	77	(22)
- **Secondary**	71	(20)
- **University**	36	(10)
Daily occupation		
- **No job**	261	(74)
- **Daily worker**	41	(12)
- **Full job**	49	(14)
Language		
- **Pashto**	221	(63)
- **Dari**	119	(34)
- **Other**	7	(2)
- **Not registered**	4	(1)
Reason for presenting		
- **Fever**	52	(15)
- **Respiratory problem**	68	(19)
- **Diarrhoea**	16	(5)
- **General body pain**	100	(28)
- **Chronic disease**	40	(11)
- **Vaccination**	28	(8)

As the qualitative interviews indicated that education level was one of the most important determinants of perceptions/opinions concerning medication use and antibiotics, further results were stratified by education level.

Among the 323 patients seeking medical care (i.e. excluding the individuals attending the hospital for vaccination only), more than half of the patients/caretakers presented directly to the MSF hospital:

115 (36%) had a prior healthcare contact (table 3). Most of the patients seeking care prior to their visit to Ahmad Shah Baba attended the private sector (fig. 1).

Table 3: Proportion of patients/caregivers seeking care elsewhere before presenting at the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014 (vaccination cases excluded)

Level of education	Total N	Prior healthcare contact N (%)
Total	323	115 (36)
Illiterate	155	51 (33)
Primary	71	23 (32)
Secondary	68	30 (44)
University	29	11 (38)

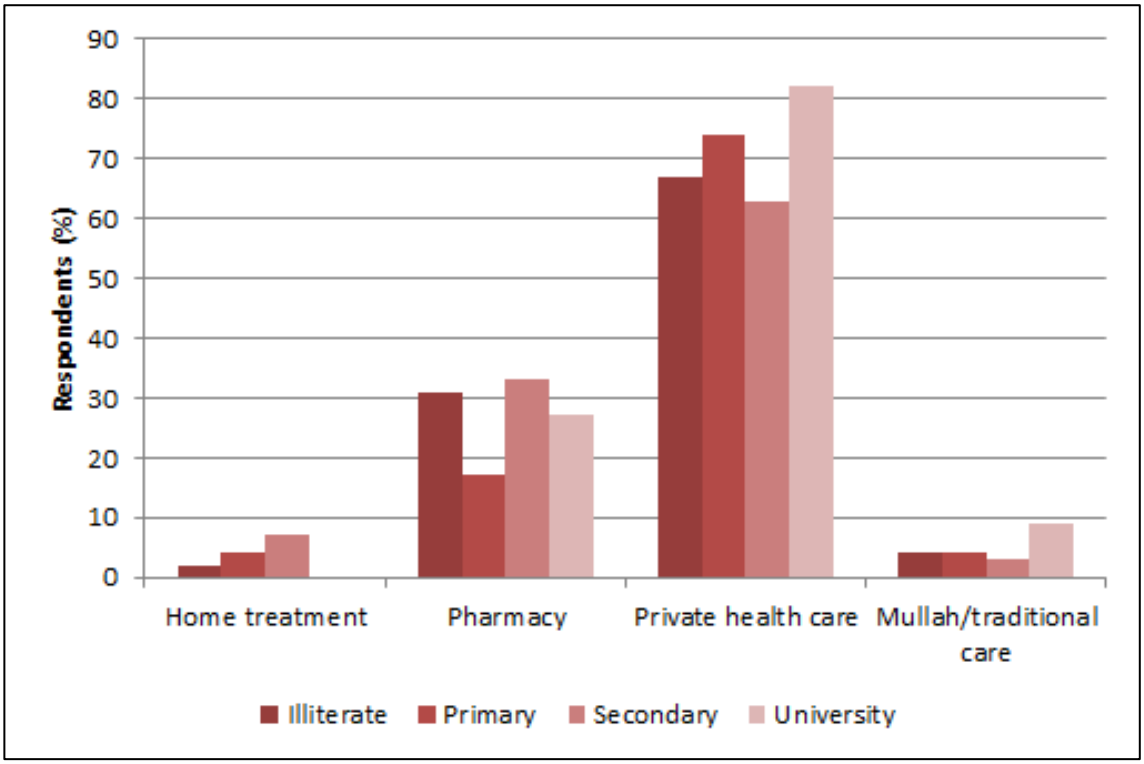

Figure 1: Proportion of patients/caregivers seeking care among other healthcare providers prior to presenting at the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014 (vaccination cases excluded)

8.5.3.2 Attitudes and perceptions on prescription of medication

The MSF hospital was not considered a main source of medication: only 11 patients (3%) referred to Ahmad Shah Baba when asked for their main sources of prescription medication. Private pharmacies, followed by private clinics and governmental pharmacies, were considered the main providers (fig. 2). Purchase of medication on the market was limited (fig. 2), and purchase through the black market or provision through relatives were only reported by one patient each.

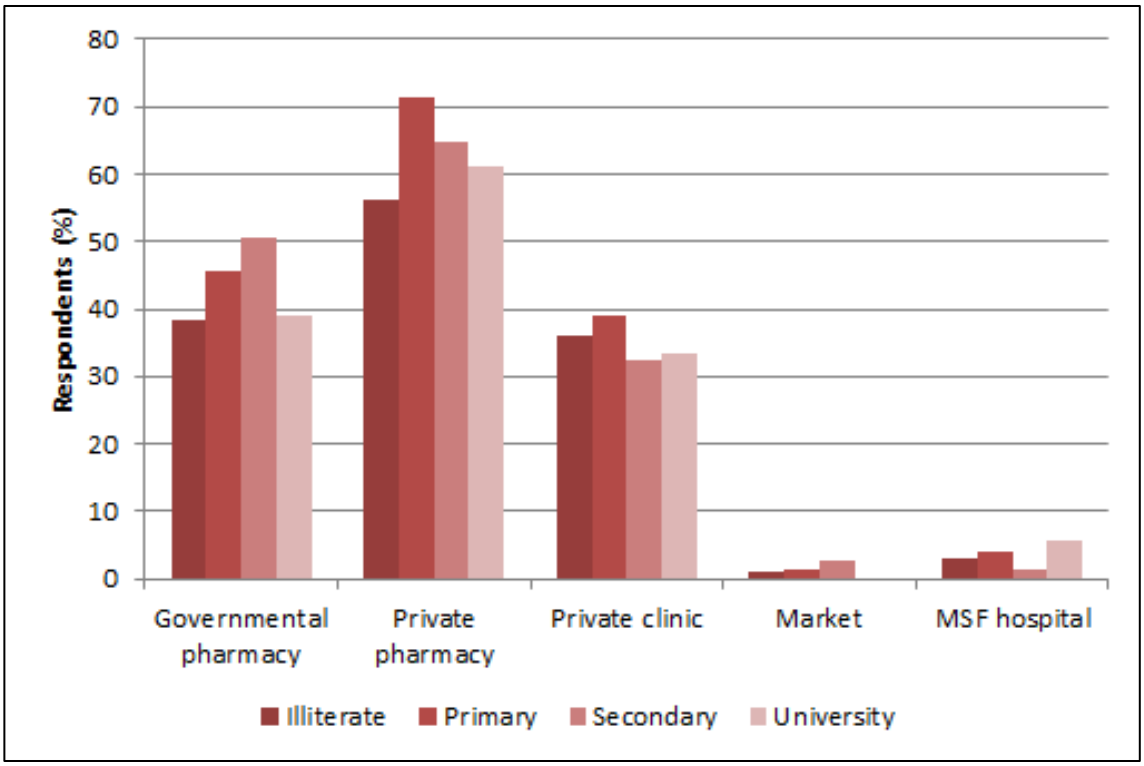

Figure 2: Main sources of medication among patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

When asked which types of medication they knew, almost all respondents mentioned pills/capsules; syrups and injections were also mentioned by a majority of the interviewees (fig. 3). Antibiotics as a specific class of medication were also mentioned by a proportion of the interviewees (from 6% for illiterate respondents up to 36% for respondents with a university education) – it should be emphasized that this does not reflect the overall knowledge on antibiotics (described in full in §3.3.), but only the unprompted mention of antibiotics as a type of medication. When queried about beliefs on general medication, almost all respondents subscribed to the opinion that the quality of medication was more important than the quantity. However, a sizeable proportion of the population was of the opinion that big numbers of pills cure an illness faster; mixing different types of pills and opting for injections were also seen as beneficial (fig. 4).

The main sources of information on how medication should be taken were the prescribing doctor and the dispenser (either as explanation or written on the medication packet). Relatives and/or literate acquaintances were also relied on, and own existing knowledge on the correct way to take medications was referred to by 22% of those with a university education, but only by 2% of the illiterate respondents (fig. 5). The instructions, regardless of the source, were considered clear and adequate by 95% of the respondents, regardless of education level. These instructions covered, according to the respondents, the number of pills per day (97%), the daily frequency (99%), the correct times at which to take the medication (98%), the total duration of the treatment (90%), the importance of finishing a complete course of treatment (87%), and whether the medication needs to be taken with food (84%).

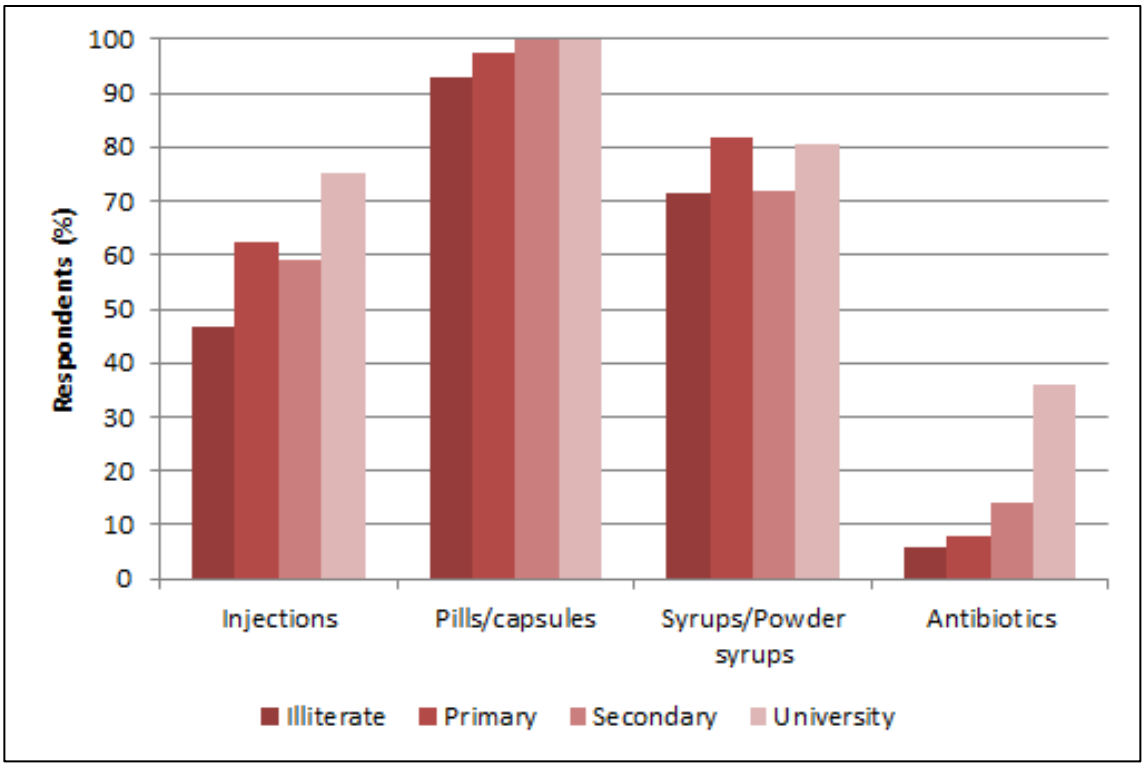

Figure 3: Types of medication mentioned unprompted as known medication, by patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

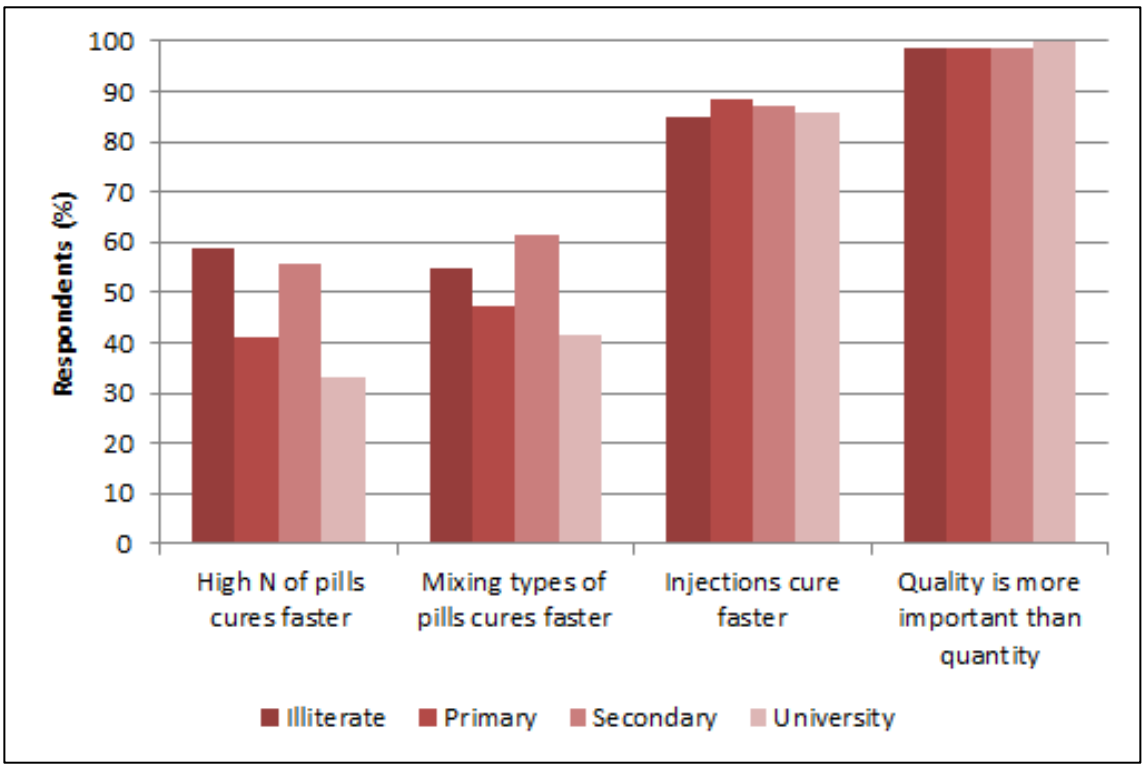

Figure 4: Opinions on medications by patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

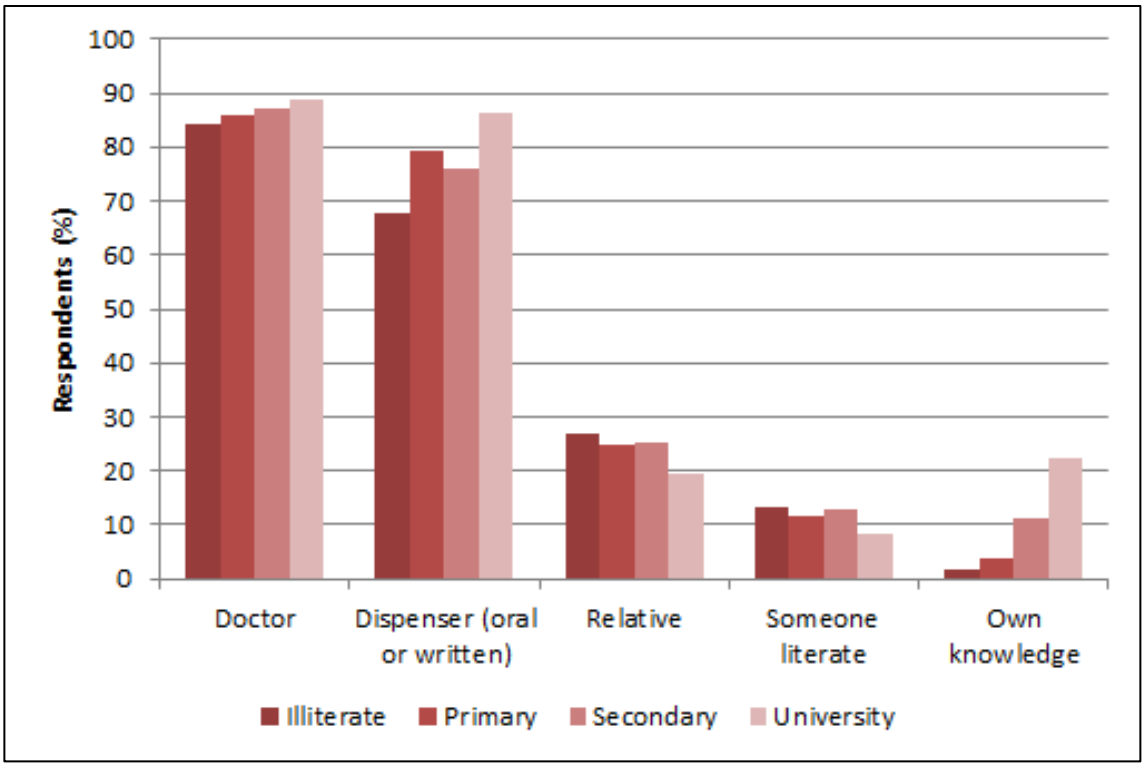

Figure 5: Providers of information concerning medications for patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

In terms of expectations for prescriptions, among the 323 patients seeking medical care (i.e. excluding the individuals attending the hospital for vaccination only), 76 (24%) had a specific expectation for one or more types of medication to be prescribed during the visit, while the remainder expressed that they had no expectations upfront, as the doctors knew best (table 4). However, 40% of all patients/caretakers stated they would seek care elsewhere if they did not receive medication of their liking, while 8% stated they would put pressure on the doctors (either by asking specifically for the medication they prefer, or issuing complaints) (fig. 6). Only 2 individuals stated they would ask the dispensers, rather than the doctor. Of the individuals seeking care elsewhere (N=131), 74% would visit another doctor (usually private), and 29% would go directly to another dispenser (private pharmacy or market).

Table 4: Proportion of patients/caregivers having specific expectations for prescriptions while presenting at the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014 (vaccination cases excluded)

Level of education	Total N	Expectations for prescription N (%)
Total	323	76 (24)
Illiterate	155	42 (27)
Primary	71	17 (24)
Secondary	68	11 (16)
University	29	6 (21)

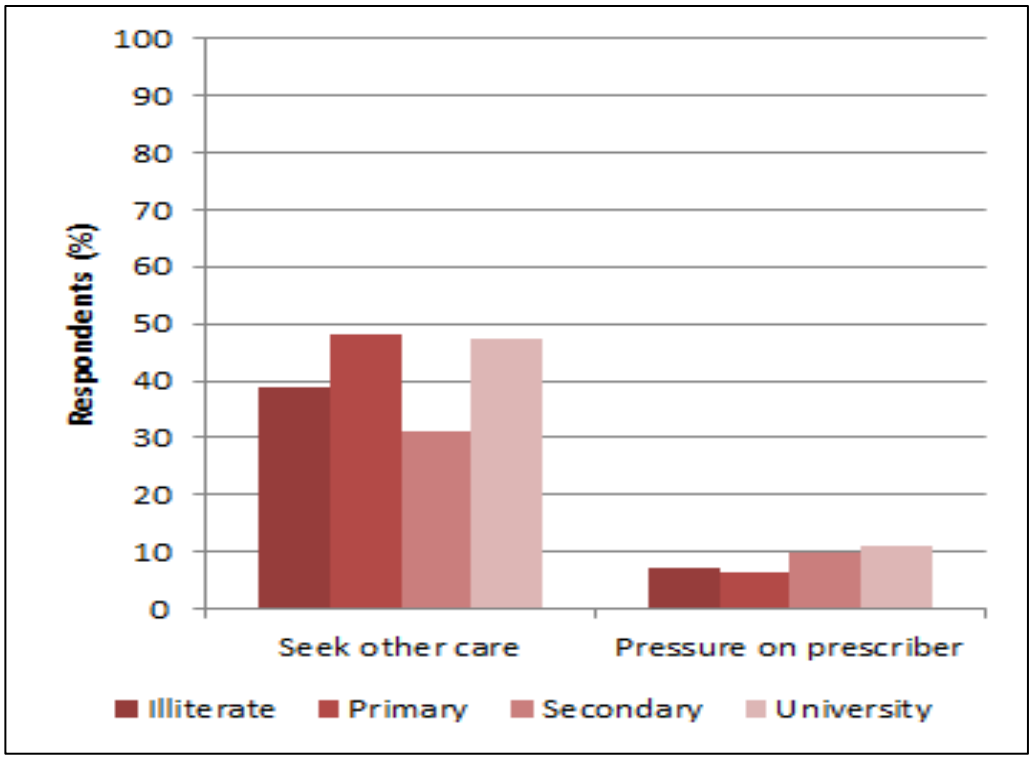

Figure 6: Predicted reactions to not receiving the expected medications among patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

8.5.3.3 Knowledge and perception on antibiotics

Antibiotics were mentioned spontaneously by 11% of the patients/caretakers when asked to list all types of medication known to them (cf. §3.2.), while 67% confirmed having heard of antibiotics when asked specifically (fig. 7). Only 1% stated they would ask specifically for antibiotics during their scheduled consultation. Among the patients who had heard of antibiotics (N=235), knowledge was assessed by questioning which conditions antibiotics should be used for – 46% identified killing or "drying" of microbes as one of the possible conditions (fig. 8). Cleaning of the body from dirt in the environment was identified by 18% of the respondents. Additionally, interviewees were asked to agree or disagree with a number of statements; show in figure 9.

Out of the individuals who were familiar with antibiotics, 30% stated that they occasionally stopped a course before it was finished. The most common reason for doing so was feeling better/cured (86%), experiencing side effects (9%), and finding the drug tasted or smelled bad (4%). Remaining antibiotics were kept at home for future use in 46% of the cases, and were given to relatives in 3% of the cases.

Among all individuals who were familiar with antibiotics, 49% had antibiotics at home at the time of the interview (table 5). Of these, most had bought the antibiotics specifically elsewhere (fig. 10). Interviewees with antibiotics at home at the time of the interview were asked to agree or disagree with a number of statements, shown in figure 11.

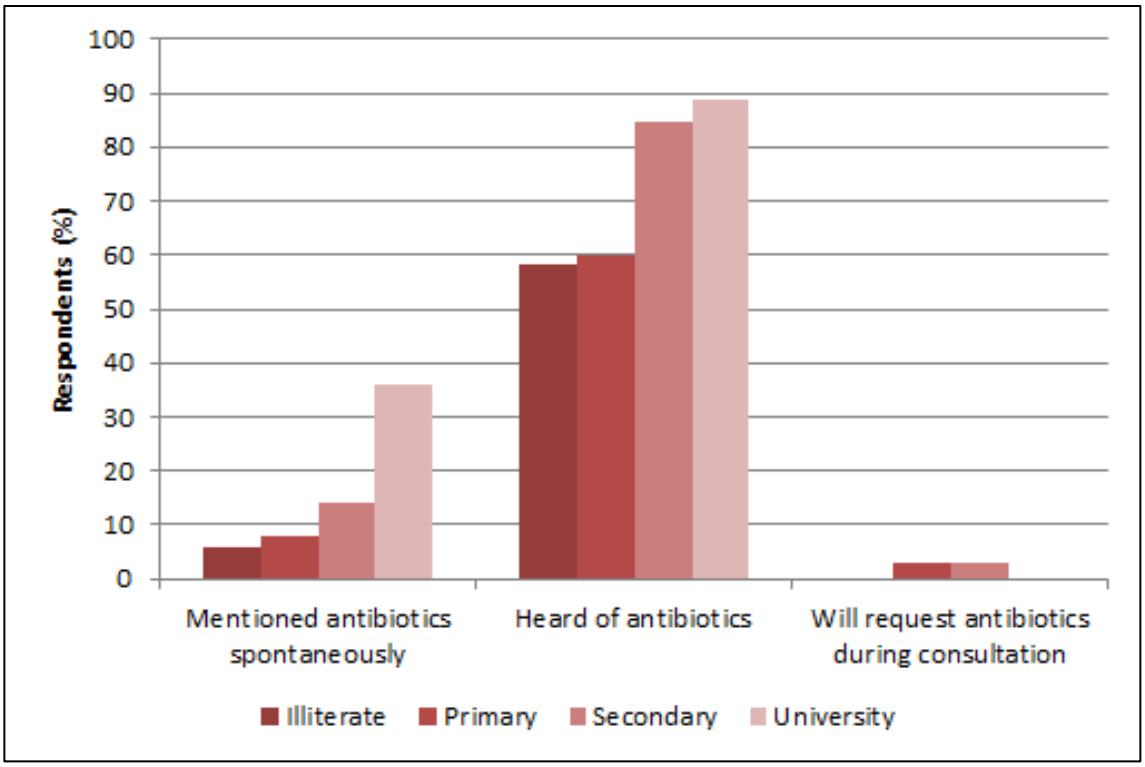

Figure 7: Knowledge of antibiotics among patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

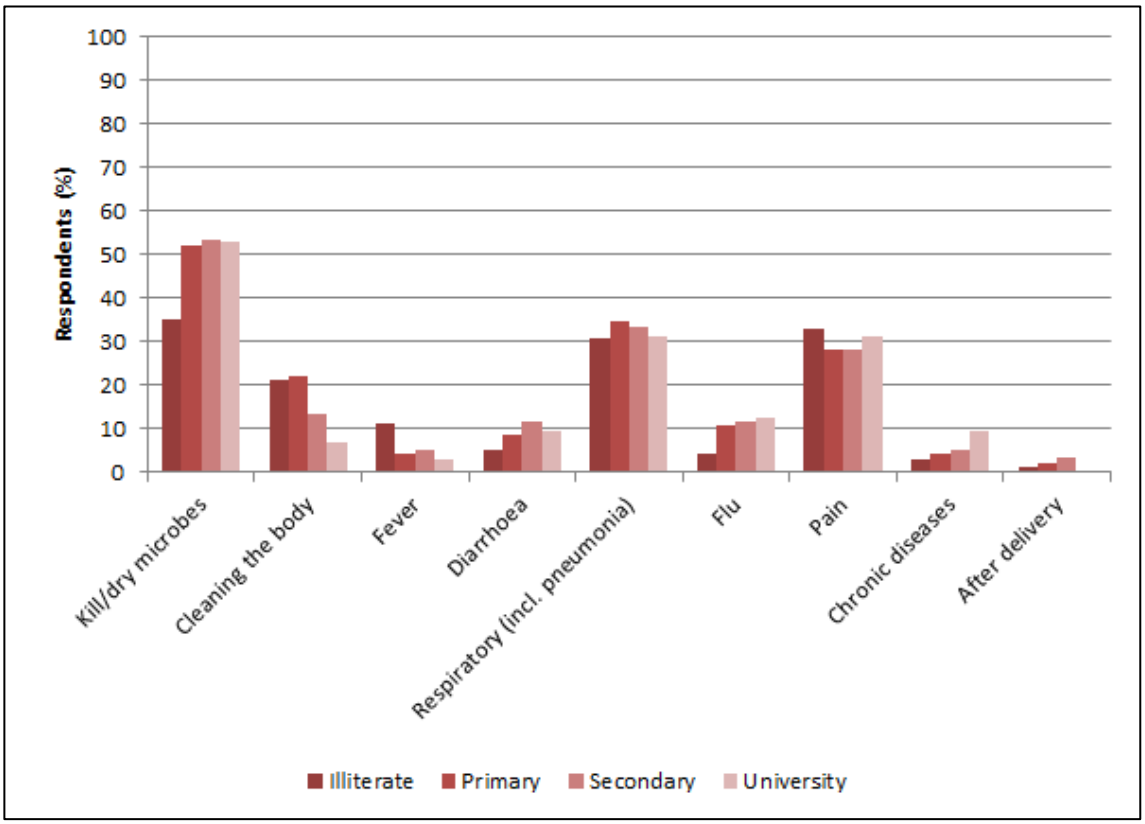

Figure 8: Conditions considered amenable by antibiotics among patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

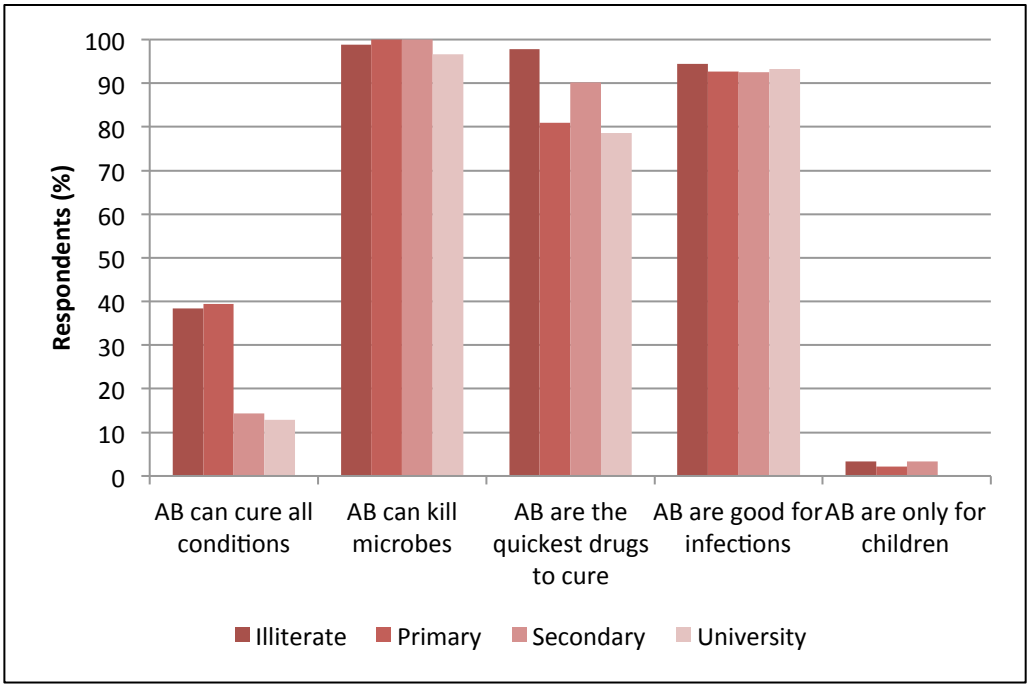

Figure 9: Statements on antibiotics (AB) considered as true by patients/caregivers attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

Table 5: Proportion of patients/caregivers who have antibiotics available at home, among patients/caregivers with knowledge of antibiotics at the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014 (vaccination cases excluded)

Level of education	Total N	Antibiotics at home N (%)
Total	235	114 (49)
Illiterate	97	40 (41)
Primary	46	24 (52)
Secondary	60	32 (53)
University	32	18 (56)

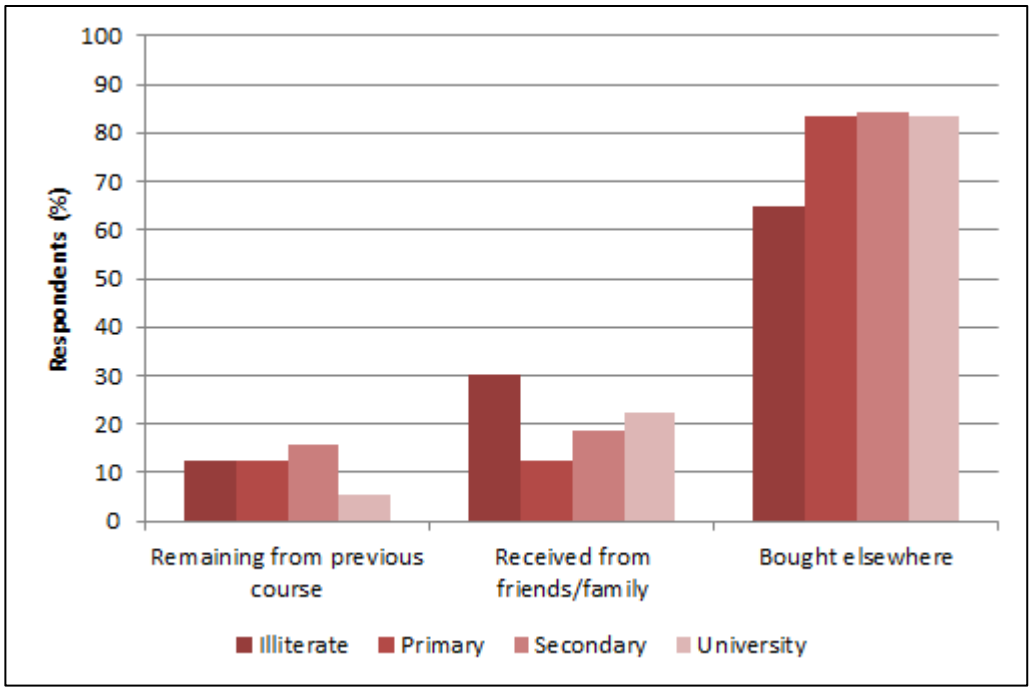

Figure 10: Source of antibiotics among patients/caretakers having antibiotics at home at the time of interview in the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

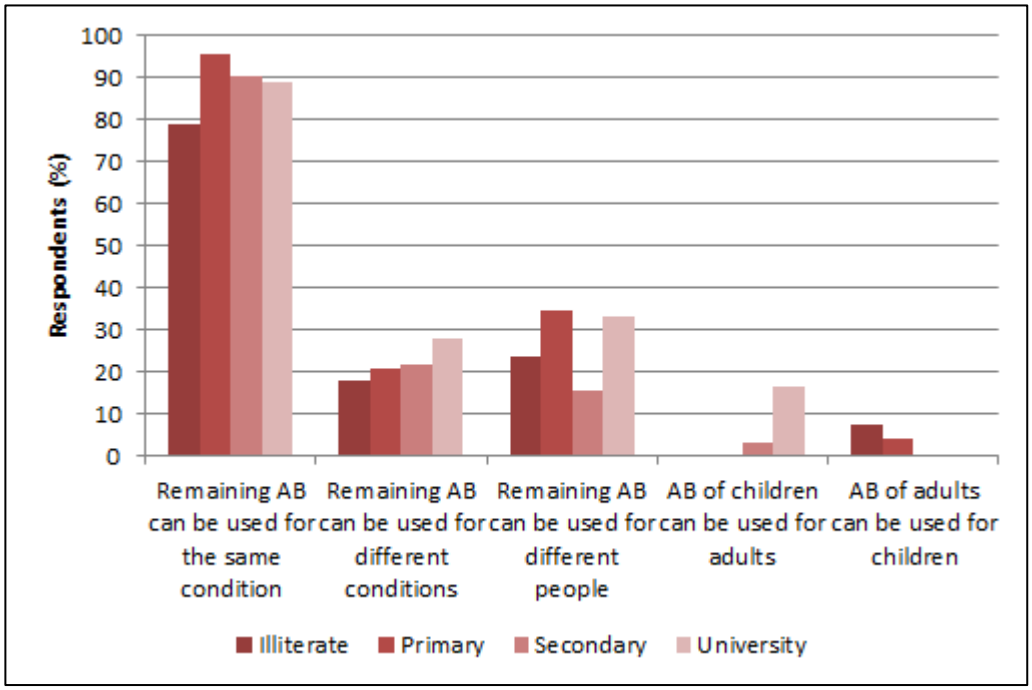

Figure 11: Statements on antibiotics (AB) considered as true by patients/caregivers having antibiotics at home and attending the OPD of Ahmad Shah Baba hospital, Kabul, Afghanistan, October-November 2014

8.6 Map of Afghanistan

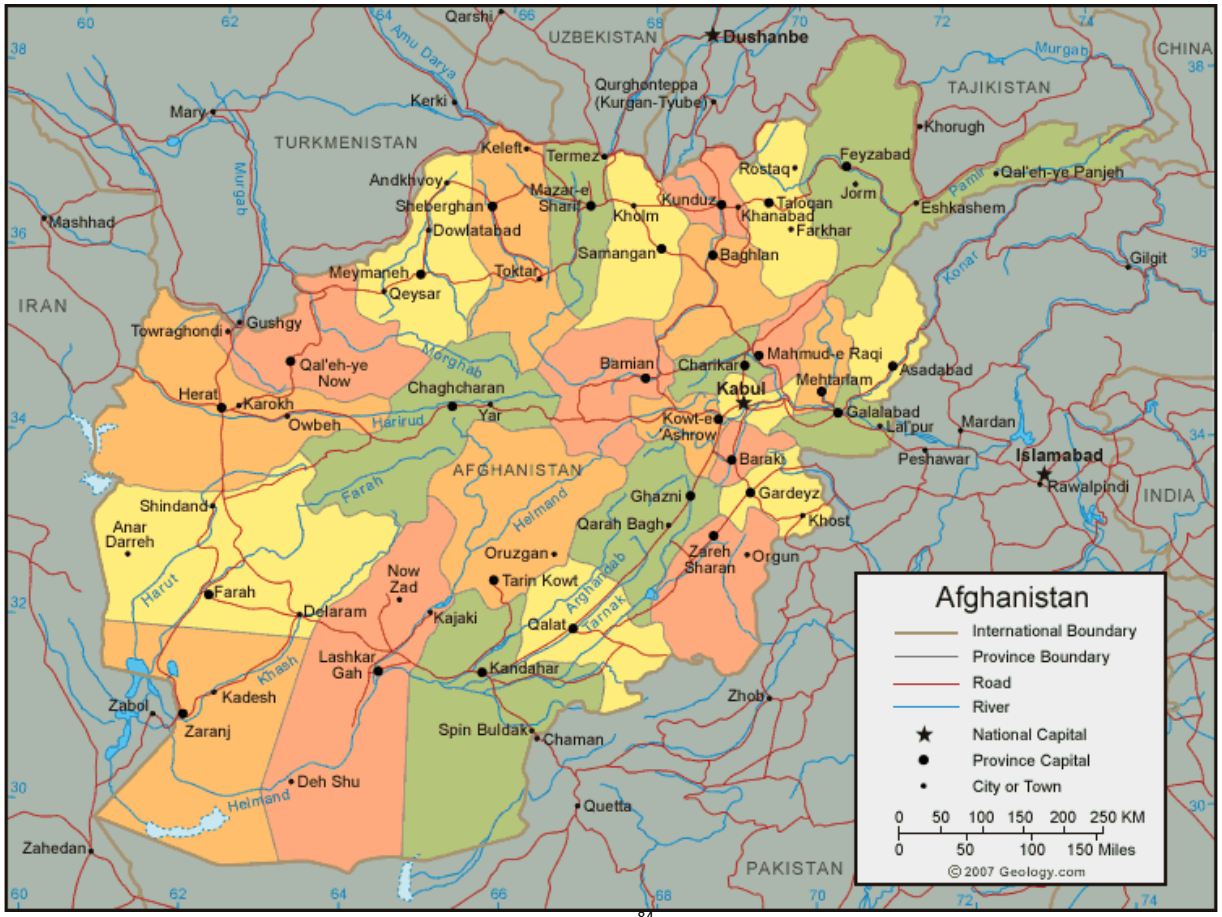

Image showing Afghanistan with provinces and province capitals.[84]

[84] Map: geology.com (accessed 28 November 2014).

8.7 Map of Kabul

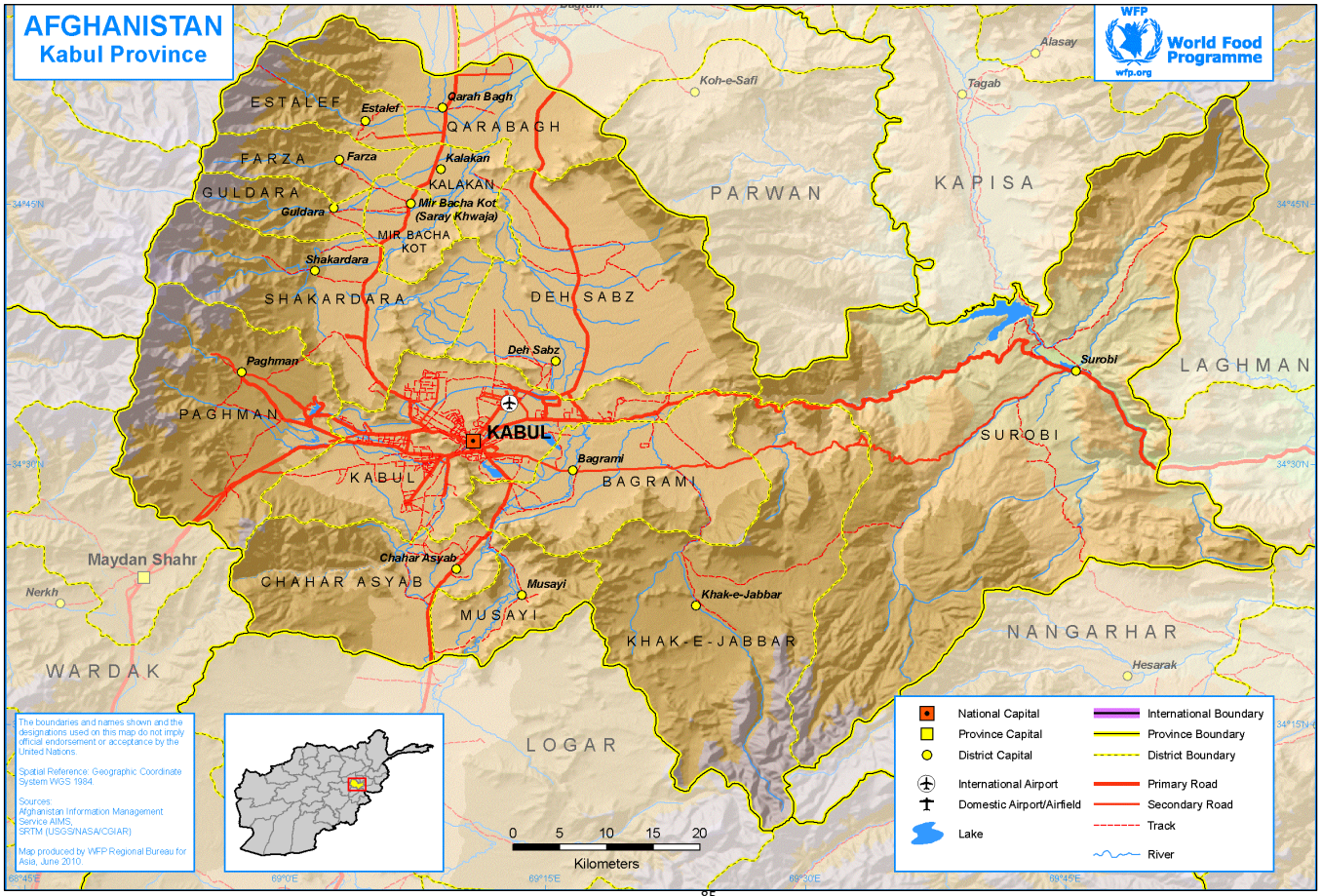

Image showing Kabul district with Kabul city with road towards Baghrami.[85]

[85] Map: foodsecurityatlas.com (accessed 28 November 2014).

8.8 Map of District 12

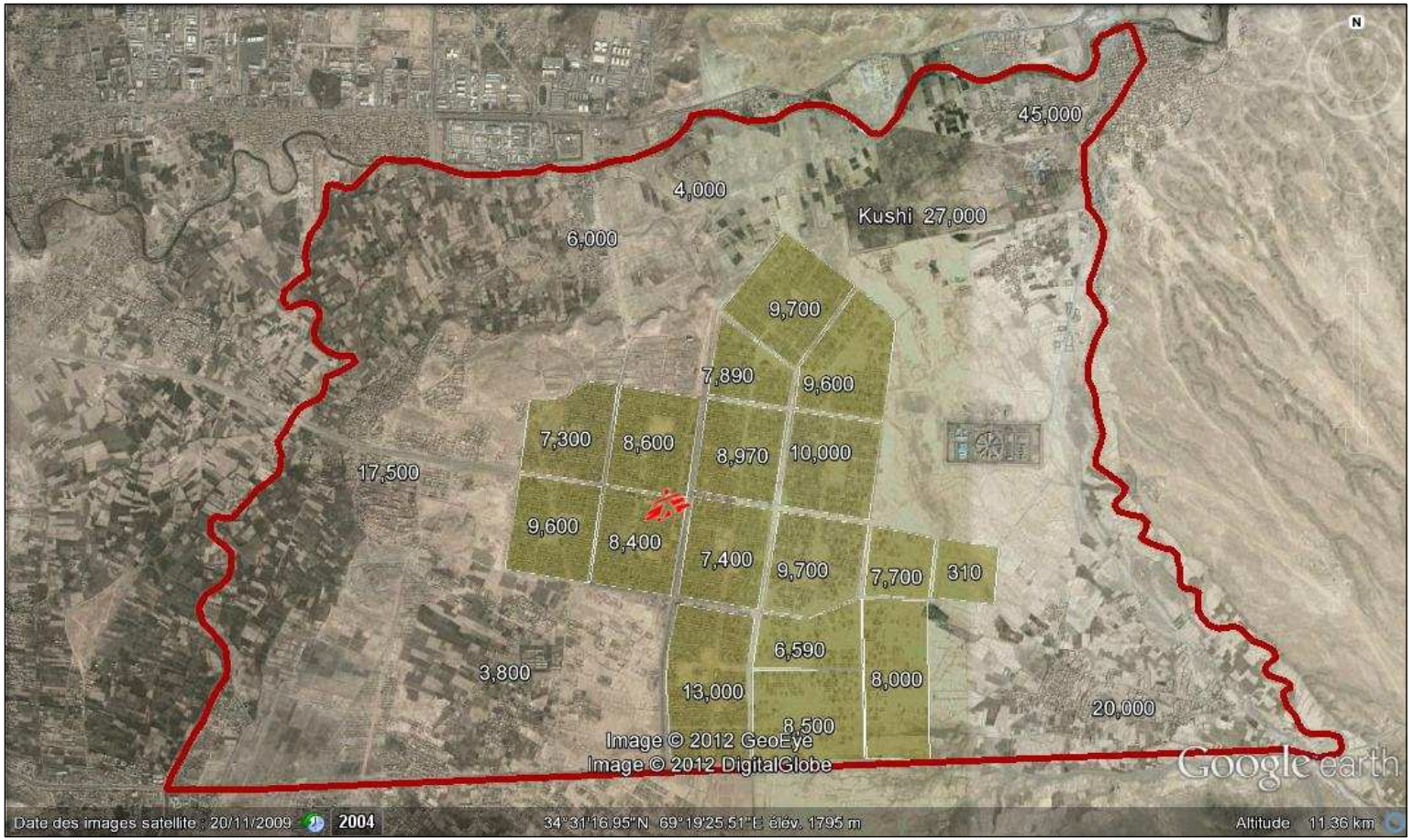

Image showing District 12 of Kabul city with surrounding area.[86]

[86] Map: Google Earth with district boundaries and Information on population, Project Document 2014, OCB, REF 2012/AF1/80/ASB/ARO