



RAPID HEALTH ASSESSMENT

World Health Organization, Humanitarian Assistance Office,
the former Yugoslav Republic of Macedonia

HEALTH CAPACITY, NEEDS AND RELATED PRIORITIES OF
MEDICAL CENTRES, HEALTH CENTRES AND AMBULANTAS IN
THREE CONFLICT - AFFECTED REGIONS OF
SKOPJE, KUMANOVO AND TETOVO



SKOPJE, 4 - 12 OCTOBER 2001

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CIP - Каталогизација во публикација
Народна и универзитетска библиотека „Св. Климент Охридски“,
Скопје

614.2:355.01(497.7) "2001"

RAPID health assesement : health capacity, needs and related priorities
of medical centres, health centres and ambulantas in three conflict affected
regions of Skopje, Kumanovo and Tetovo : 4-12 October 2001. - Skopje :
World Health Organization, Humanitarian Assistance Office the former
Yugoslav Republic of Macedonia, [2001]. - 42 стр. : граф. прикази,
карти ; 30 см

ISBN 9989-57-076-0

а) Здравствени установи - Воени конфликти - Македонија - 2001

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ACKNOWLEDGEMENTS

We gratefully acknowledge the professional contribution and advice given by Mr. Cane Talevski, WHO Counterpart for RHA, from the Ministry of Health, Dr. Mentor Mela, Head of the Sector of Primary and Preventive Health Care in the Ministry of Health and Professor Dr. Elisaveta Stikova, Director of the Republic Institute of Public Health of the former Yugoslav Republic of Macedonia. Professional support given by Dr. Zarko Karadzovski from the Department of Epidemiology and Dr. Mihail Kocubovski from the Department of Hygiene of the RIPH in the preparation of the workshop and for the useful contacts provided is particularly appreciated.

Special thanks for the special support given to the RHA from the Crisis Management Group Co-ordination body of the former Yugoslav Republic of Macedonia and from the Ministry of Transport and Communications for the valuable technical inputs in the assessment preparation phase.

The RHA Team would also like to thank the regional RHA team leaders and supervisors of the regions involved in the assessment: Dr. Ljuben Ristevski for Skopje, Dr. Mimoza Petkovska for Kumanovo and Dr. Raim Tachi for Tetovo for the valuable support given during the implementation phase. Special thanks to UNHCR's support and to the ICRC as well as UNICEF representatives and local non-governmental organisations (MRC, MCIC and El-Hilal) for their commitment and support during fieldwork.

Thanks are also extended to the medical personnel who assisted in the assessment, as well as to all health staff and others, for their willingness to collaborate during the interviews.

Dr. Kristin Vasilevska, WHO National Counterpart for Communicable Diseases and Associate Professor of Epidemiology, Biostatistics and Medical Informatics, at the Medical Faculty, University "St. Cyril and Methody" of Skopje, offered invaluable support in the processing and analysis of collected data.

Finally, we would like to thank Dr. Marija Kisman, WHO Liaison Officer, for her valuable comments and support and to Dr. Vasilka Dimoska, Dr. Dance Gudeva-Nikovska and Dr. Arta Kuli from WHO (HAO) Skopje for their strong commitment, co-operation and support during the planning and implementation of the assessment, evaluation of results and preparation of the final report.

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ABBREVIATIONS

BCG	Bacillus Calmet & Guerrin (Vaccine against tuberculosis)
CMR	Crude Mortality Rate
DDD	Disinfection, Disinsection, Deratisation
DTP	Diphtheria, Tetanus, Pertussis (Whooping cough)
GDP	Gross Domestic Product
EAAGs	Ethnic Albanian Armed Groups
ICRC	International Committee of the Red Cross
IDP	Internally displaced people
IFRC	International Federation of the Red Cross
IM	Intra-Muscular
IPH	Institute of Public Health
IRC	International Rescue Committee
IV	Intravenous
MC/HC	Medical Centre / Health Centre
MCIC	Macedonian Centre for International Co-operation
MRC	Macedonian Red Cross
MOH	Ministry of Health
NATO	North Atlantic Treaty Organization
NGO	Non Governmental Organisation
OPV	Oral Polio Vaccine
PHC	Primary Health Care
RHA	Rapid Health Assessment
(R)IPH	(Republic) Institute of Public Health
SPSS	Statistic Programme Scientific Survey
TB	Tuberculosis
U5MR	Under 5 (years of age) Mortality Rate
UN	United Nations
UNHCR	United Nation High Commissioner for Refugees
UNICEF	United Nations Children Fund
WHO (HAO)	World Health Organization (Humanitarian Assistance Office)

EXECUTIVE SUMMARY

This report summarises the findings of a rapid health assessment conducted in the three crisis-affected regions of Skopje, Kumanovo and Tetovo in the former Yugoslav Republic of Macedonia, conducted in early October 2001 by WHO-HAO in joint collaboration with the Ministry of Health (MOH). The assessment was technically supported by the Republic Institute of Public Health and received logistical support from international agencies (ICRC, UNICEF) and local NGOs (MCIC, and El-Hilal).

The primary objective of the assessment was to provide baseline information on the current capacity and health needs of health facilities in three regions, after the last six months of military clashes between the Ethnic Albanian Armed Groups (EAAGs) and Government security forces in the north-west part of the country. The areas chosen were deemed to be of importance to local and international health providers currently in the process of reorienting health aid. The secondary objective was to strengthen capacity within the RIPH to design, conduct and analyse this type of assessment.

The assessment was implemented using questionnaires, developed by WHO HAO, and finalised during a one-day workshop with all local and international health stakeholders. Sixteen trained teams, covering the three affected regions, conducted the implementation simultaneously on October 5th, 8th and 9th, 2001. The assessment included twenty-nine municipalities and the following health facilities: Two MC/HCs (Tetovo and Kumanovo), nine HCs (Skopje) and ninety ambulantas (all three regions).

The conflict has only exposed persistent problems in the country's health sector (uneven distribution of the staff, poor building maintenance, lack of equipment, irregularities in drug supply and centralised health information systems). It has caused the practical disintegration of the system along front-lines, resulting in the severely impeded delivery of both preventive and curative health services, staff problems, damage to health facilities and the disrupted communication and flow of health information.

The most pressing health needs are found within health facilities that were directly exposed to conflict activities. It must be taken into account that not all MC/HCs investigated were located in the immediate conflict zone. Therefore MC/HC needs require small rehabilitation works related to the poor maintenance of facilities, change of obsolete equipment and the regular supply of drugs. Nevertheless, there is a significant number of ambulantas that require additional staff, better accessibility (roads), partial or complete reconstruction due to damage caused by conflict, renewed medical equipment and regular drug supply.

INTRODUCTION

The former Yugoslav Republic of Macedonia occupies an area of 25,713 km² and is located in the center of the Balkan Peninsula, of South–Eastern Europe. The country borders the Federal Republic of Yugoslavia to the north, Bulgaria to the east, Albania to the south-west and Greece to the south-east. It is a landlocked mountainous country. During the 1994 census, a population of 1.936.877 was registered, while the estimated population for July 2001 was 2.025.000 (Table 1). Of these, 66% are classified as ethnic Macedonians, 23% Albanians, 4% Turks, 2,3% Roma, 2% Serbs and 0,4% Vlachs. The predominant religions are Orthodox Christian (67%) and Muslim (30%).

Table 1. Distribution of the population in the currently affected regions of the former Yugoslav Republic of Macedonia prior to the crisis.

Region	Surface area (km ²)	Number of settlements	Number of inhabitants (Estimate 2001)	Number of inhabitants (km ²)
Skopje	1.858	126	560,108	306
Kumanovo	1.202	110	134,574	112
Tetovo	1.091	92	179,745	169
Entire country	25.713	1.753	2,025.000	79

Sources: Ministry of Health – Assessment, September 2001.

The population is growing at a rate estimated in 1999 to be 0.64% per annum. In 1997, life expectancy at birth for males was 70.4 years and for females 74.8 years. It is a young population, with nearly 24% under the age of 15 (1997).

The early years after independence (1991) were characterised by a steady decline in the Gross Domestic Product (GDP) and near hyperinflation. Whilst inflation and GDP growth have been brought into check in the past few years, unemployment has continued to rise from an already high base, reaching 41.7% in 1997. This is the highest official unemployment rate in the European Region, and is likely to have significant implications concerning the health needs of the population and the cost of health service provision.

The Health Care Law of August 1991 established the grounds for the current healthcare system in the former Yugoslav Republic of Macedonia. It formed the basis of the health insurance system, the rights and responsibilities of service users and service providers, the organisational structure of health care and the disposition of funding stream. The health care system, prior to the enactment of this law, although offering universal accessibility, was fragmented, with little central governance or strategic overview.

Health care is organised on three conventional levels: primary, secondary and tertiary. Health care is delivered by 77 organisations in the public sector: 11 institutes of Public Health, 3 health stations, 18 health centres that provide primary health care, 16 medical centres, providing primary and secondary health care, 15 specialist hospitals, 1 general hospital, 6 self-managing pharmacies, as well as a clinical centre (University Hospital) with 28 specialist clinics and a number of other medical and dental tertiary centres (Source: *the former Yugoslav Republic of Macedonia, WHO Health Care System in Transition, 2000*)

Primary health care services represent the first contact between patients and the health care system. Countrywide, primary health care is delivered through 1200 separate facilities. These are predominantly small outpatient clinics, called ambulantas (1/1600 inhabitants average). Ambulantas are accountable to health centres providing outpatient primary health care and some specialist consultation services. Medical centres, at the regional level, exist as hybrid structures incorporating outpatient (Health centre) and inpatient (Hospital) services, providing primary and secondary health care. In terms of the organisation of health care in crisis-affected areas, there are two MCs in Kumanovo and Tetovo, nine HCs in Skopje and ninety ambulantas in all three regions.

Table 2. Trained medical staff ratio in the currently affected regions prior to the crisis.

Region	Number of inhabitants	Number of Inhabitants/ 1 doctor	Number of Inhabitants/ 1 dentist	Number of Inhabitants/ 1 pharmacist
Skopje	560,108	303	1,336	5,085
Kumanovo	131,740	799	4,189	9,583
Tetovo	179,745	890	3,626	36,865
Whole country	2,025,000	455	1,795	6,388

Sources: Ministry of Health – Assessment, September 2001.

The exacerbation of the long-term conflict in the former Yugoslav Republic of Macedonia began at the end of February 2001 with clashes between government security forces and EAAGs in the northern part of the country. The conflict gradually intensified and resulted in the NATO led military intervention of August 2001. Since March 2001, it is estimated that 125,000 people at some point have become displaced.

In accordance to the date of this report, the total number of IDPs in the country is 53,797. The vast majority of these (96%) are accommodated in the three crisis-affected regions. Over 90% of IDPs are lodged with host families, and 3,547 are settled in 20 collective accommodations in Skopje, Kumanovo and Dojran (Source: MRC/IFRC Weekly Report, 9-14 October 2001).

Table 3. Health facilities and number of IDPs accommodated in the three crisis-affected regions, September/October 2001.

Region	Number of IDPs	Ambulanta	MC/HC
Skopje	12,515	39	9
Kumanovo	10,856	22	1
Tetovo	28,481	29	1

Source: MRC/IFRC Weekly Report 9-14 October 2001 (Number of IDPs).

With the signing of a “Framework Agreement” treaty on 13 August 2001 in Ohrid, displaced persons, including both refugees and IDPs, began returning to their homes. Due to the daily fluctuation in the number of IDPs/returnees, at this moment it is very difficult to provide accurate updates. Recently, the number of persons returning from Kosovo to the former Yugoslav Republic of Macedonia has decreased slightly, with an average of 50 people crossing the border daily. Figures show that almost 57,000 people have returned from Kosovo since June, while 24,900 remain as refugees in the province. The Macedonian Red Cross reports that the number of IDPs stands at 44,531 (Source: UNHCR Information Update, 16 October 2001).

BACKGROUND

Major deficiencies in baseline health data, especially in the crisis-affected areas, have become apparent to the international community and to MoH, following the return of IDPs to their homes. Furthermore, the escalation of conflict has impeded the regular flow of health information from the peripheral level to the regional/central IPHs. Epidemiological information was needed to inform policy makers and donors, and to provide a baseline against which many of the emergency programmes in the health sector could be implemented and evaluated. MOH in partnership with WHO took the leading role in co-ordinating this assessment, together with IPHs, ICRC, UNICEF, UNHCR, and other international/local NGOs.

Concerning child health indicators, the latest reliable health information comes from the UNICEF “Multiple Indicator Cluster Survey” of 1999. At that time, vaccination coverage of children in the country was quite high: 99.1% of children between 1-2 years of age were vaccinated against TB, around 98% were vaccinated against DTP and with OPV, and 92% in the age group of 2-3 years were vaccinated against measles. In addition, 45% of infants under 4 months were exclusively breastfed. Comprehensive studies on food security and nutrition surveys on children under 5 years of age are not available, while the results of a National household survey conducted in 1999 by WHO on the health and nutritional status of the elderly in the former Yugoslav Republic of Macedonia, are available.

Crude mortality and Under 5 mortality rates in the former Yugoslav Republic of Macedonia have been reported by RIPH to range from 7.5/1000 and 8.3/1000 respectively. Major causes of under-five mortality are neonatal and perinatal conditions, respiratory and gastro-intestinal diseases/disorders and congenital anomalies. In 1997, the infant mortality rate was 15.7/1,000 live births and the maternal mortality rate was 3.4/100,000 live births.

In adults, circulatory system diseases such as ischaemic heart disease and cerebrovascular disease, together with chronic lung disease, are reported as major causes of disease and show a general increase since independence in 1991. Cancer mortality has also increased in the past few years. External causes of death (injuries and poisonings) have been relatively stable, whilst infectious disease mortality appears to be on the decrease. Available evidence suggests that communicable diseases incidence is stable. As in other former Yugoslav republics that have experienced large-scale population movements, accurate assessment of the true population must await the next census. Until then, mortality rates must be viewed with some caution (*Source: WHO Regional Office for Europe- Health for All database*).

WHO (HAO) is co-ordinating various health interventions and leading the international and national organisations working in the health sector. In agreement with the MoH, the WHO (HAO), along with its implementing partners (IRC), is responding to the current crisis by providing PHC medical teams and essential drugs, free of charge, to the IDPs and returnees in the areas of Kumanovo, Aracinovo and Skopje.

ASSESSMENT OBJECTIVE

To identify priority health needs of the population living in the crisis area, and to measure the public health impact of the crisis.

METHODOLOGY

This assessment was conducted in three northwest regions (Skopje, Kumanovo and Tetovo) of the former Yugoslav Republic of Macedonia, which were exposed to conflict for six months (March-September 2001). At the time of assessment, certain parts of the assessment area, in particular those in Kumanovo and Tetovo regions, were under UN Security Phases 3 and 4, and therefore inaccessible to UN agencies without special permission from UNSECOORD, New York. Some of the international organisations (ICRC) and local NGOs (MCIC, El Hilal) that had access to the restricted areas, were of particular help in providing transportation for local RHA teams and in some cases, interviewers for assessment.

Sampling Selection

All health units providing primary health care in the three regions were accessible and involved in the survey. Hospitals were not included in this assessment, with the exception of two in-patient capacities of two Medical Centres (Kumanovo and Tetovo).

Assessment Design

The assessment co-ordinator obtained key information necessary for designing the assessment from secondary sources. This came primarily from MoH, RIPH and WHO. Two different questionnaires were developed by WHO (HAO) for two types of health facilities, MC/HCs and ambulancias. Each questionnaire included different areas of investigation: general information regarding PHC service, environmental conditions, population health status, health services/health personnel, status of health facilities and medical equipment (according to the official requirements) and drug availability. Included were also the expressed needs for staff, reconstruction, equipment and drugs. As guidelines for the questionnaires, WHO publication, Rapid Health Assessment Protocols for Emergencies (WHO Geneva, 1999), translated into Macedonian was used.

The questionnaires were revised during a one-day workshop, jointly organised by MoH and WHO (HAO), where all health stakeholders from both national and regional levels were invited. During the workshop, RHA field teams were selected and logistical arrangements made.

Additional information was gathered through key informant interviews with representatives from MoH, IPH, NGOs, the Red Cross, international organisations and civil society. This was complemented by an analysis of available demographic, morbidity and mortality data.

Data Collection and Analysis

RHA interviewers were selected among professionals officially employed in public health facilities and representatives of local NGOs.

Sixteen teams of two people each implemented the data collection. Each team was composed of an individual with specific training received during the workshop and one health provider. Supervisors were also appointed to the assessment teams in their respective regions. Supervisors were responsible for controlling the interview technique, standardising measurement procedures, controlling data entry and transmitting the final compiled questionnaires to the focal point in WHO (HAO) for final data collection and analysis.

Directors of MC/HCs and medical staff working in the ambulantas, who were present in their facilities during the field visits, completed the questionnaires.

The analysis of the collected data was performed using Statistical Programme for Scientific Survey (SPSS). This software was preferred to EPI Info firstly, because the object of the exercise was to utilise and strengthen available local capacities and knowledge at the MoH and IPH level and secondly, to make available a standardised and unified health data collection tool for eventual future health assessments in other regions of the country.

In the statistical analysis, most frequently arithmetic average values (means) have been taken, together with modes, interval values (Min-Max), and measures of dispersion, such as Standard Deviation (SD), Standard Error (SE).

RESULTS AND DISCUSSION

Rapid Health Assessment was carried out on the 5th, 8th and 9th of October in the three affected regions of Skopje, Kumanovo and Tetovo. Included were twenty-nine municipalities and the following health facilities: two (2) MC/HCs (Tetovo and Kumanovo), nine (9) HCs (Skopje) and ninety (90) ambulantas (all three regions). The RHA yielded data on the capacity and priority needs of the concerned health facilities. This enabled the measurement of the public health impact that the recent armed conflict has had on the affected population.

However, it should be noted that the information obtained might be occasionally incomplete. This is owing to two reasons: firstly, because the interviewees did not know answers to specific questions, and secondly, because they were not present at the precise time of the field visit (interview). Unfortunately, the latter occurred in the municipality of Lipkovo (Kumanovo region) and village of Radusa (Skopje region). There the team of interviewers managed to partially fill in the questionnaire, providing only information gathered during the visit to the ambulantas and from communication with inhabitants of the villages. For specific details regarding the health facilities and regions included in the survey, refer to tables in Annex 3 and 4.

General Information on the Health Facilities

Presence of IDPs/returnees in the catchment area

The majority of interviewed persons (58%) were not able to provide an estimate of the number of IDPs in the catchment area of MC/HCs and ambulantas. From the information obtained, Max. value for an ambulanta is 3,200. There is also a range for MC/HCs (Min value 500; Max value 27,360). The same patterns are shown for returnees. Therefore, the most reliable information is still found in the MRC/IFRC bulletin.

Number of villages and population figures in the catchment area

The findings illustrate that there exists a great variability among the numbers of villages covered by each ambulanta.

Villages covered by a single ambulanta range between zero and twelve (Ten ambulantas located in the urban area of Skopje have no villages within their catchment area). The mean value is four villages per ambulanta; mostly they are covering two villages. Only two ambulantas referred ten and twelve villages in their catchment area (**Figure 1**).

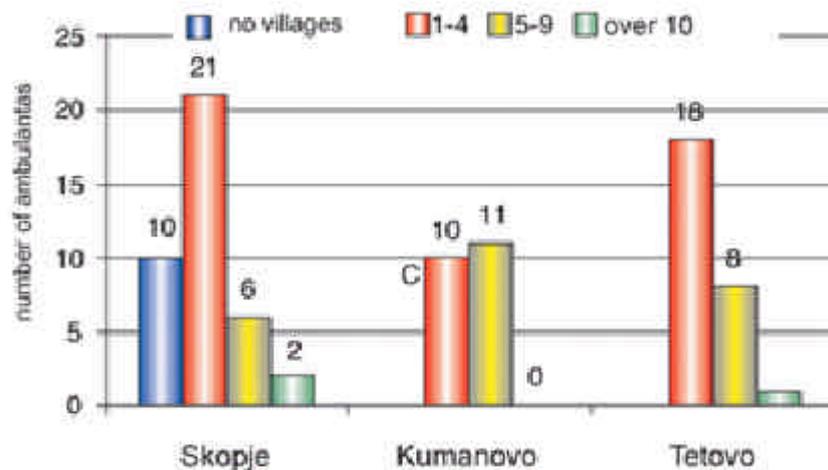


Figure 1. Number of villages in the catchment area of a single ambulanta, three regions.

The number of ambulantas accountable to MC/HCs range between 1 and 31. Compared to HCs in Skopje, MC/HCs in Kumanovo and Tetovo are covering almost double number of peripheral ambulantas.

In terms of population, figures vary significantly both for ambulantas (Min value 400; Max value 60,000; Mean value 7,300 inhabitants) and MC/HCs (Min value 6,760; Max value 210,000; Mean value 69,000 inhabitants).

Accessibility of health facilities

With regards to geographical accessibility, there is an average of 10 kilometres between an ambulanta and related MC/HC. There is a great diversity amongst the three regions: the greatest distances were found in Skopje and Kumanovo (Three ambulantas in those regions were more than 30 kilometres far away from MC/HCs, Max value 38 km). In comparing three regions, the most distant ambulantas are found in the Tetovo region (Almost half of the ambulantas are over 15 km far away from MC/HC) (Figure 2).

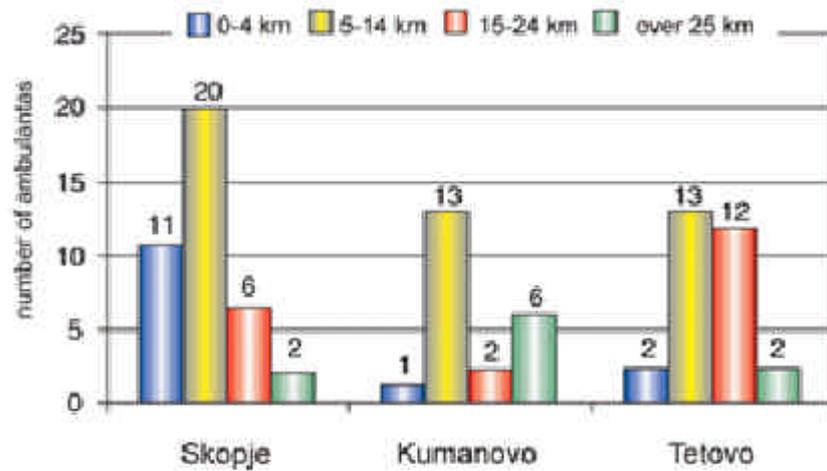


Figure 2. Distance between ambulanta and MC/HC, three regions.

A similar pattern exists for the distance between an ambulanta and the nearest health emergency service. In this case the distances are somewhat higher (Median value 15 kilometres). The longest distances were found in the Skopje (Max. value 49 km) and Tetovo (Max. value 35 km) regions (Figure 3).

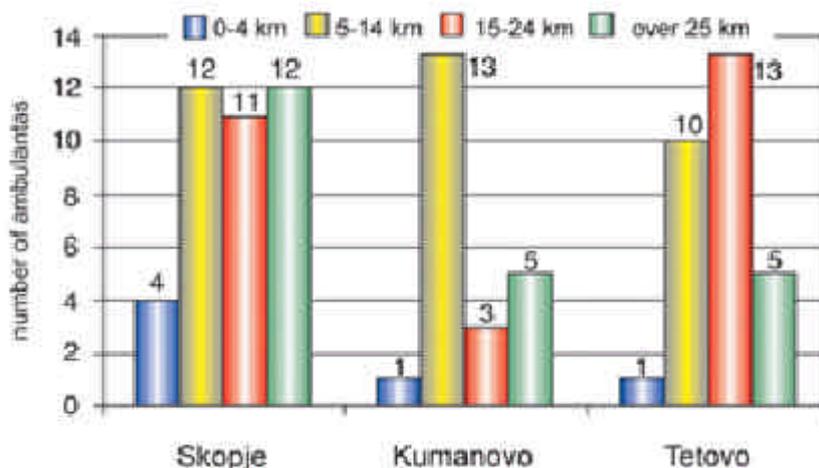


Figure 3. Distance between ambulanta and the nearest health emergency unit, three regions.

Regarding the distance between MC/HC and the nearest general hospital, two MC/HCs in Tetovo and Kumanovo considered their in-patient capacity as a general hospital. Therefore, the distance in those regions is very small (In Tetovo HC is a part of the same building complex. In Kumanovo the distance is 1.5 km). In Skopje there are only 3 HCs located further than 10 kilometres from a hospital (Max value 14 km).

Location of health facilities

The vast majority of health facilities (95% ambulantas and 100% MC/HCs) are located in separate public buildings; the remaining few ambulantas are in schools and municipal administration buildings.

Utilisation of private health sector

The private health sector was not subject to this assessment. Concerning the regional private health facilities and pharmacies, the data collected from health professionals working in public sector (MC/HCs) paints a confusing picture. The health professionals interviewed from MC/HCs were generally unaware of the magnitude of private sector utilisation, which appeared to have increased during and after the crisis. It is apparent from anecdotal reports, that there are a great number of people seeking health care in the private sector. However, further investigations are required to crosscheck the private/public situation especially in the Tetovo and Kumanovo regions.

Referrals to MC/HCs

Only three MC/HCs reported numbers of patients referred to specific services in the last six months. The most complete information comes from MC/HC in Tetovo, with 1,512 surgical interventions, 1,075 deliveries and 201,551 outpatient consultations. Only two HCs in the Skopje region reported small numbers of minor surgical interventions as well. This information requires comparison and crosschecking with information available at the MoH and IPH in order to determine if the present security situation has hampered the quantity and quality of health care at MC/HC level.

Environmental Conditions

Water supply

The water supply situation is good in MC/HCs, since they are located in urban areas and connected to a central city water supply system. MC/HCs receive an adequate water supply (the only exception is Tetovo MC/HC, where the water supply is intermittent), both in terms of quantity and quality. Ambulantas located in rural areas are faced with further problems. In 28% of all rural ambulantas the water supply is intermittent, and in 12% there is no water supply. Only half of the rural ambulantas are connected to a central water supply system, the remainders are supplied from wells and boreholes. 83% of the ambulantas have their water quality tested regularly. Overview of the water supply situation is presented in **Figure 4**

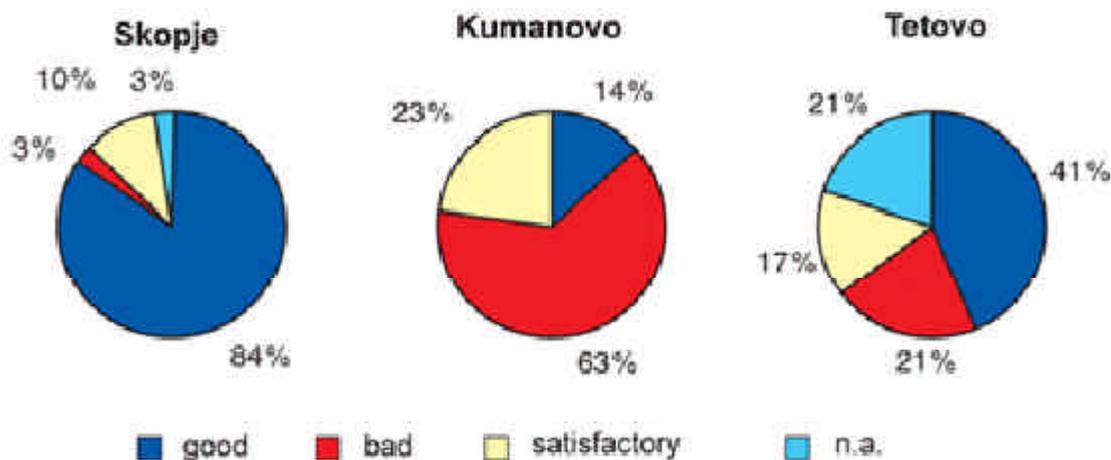


Figure 4. Water supply situation, three regions.

Wastewater disposal shows a similar trend. In all MC/HCs, wastewater is piped to a central sewerage system, while in 80% of all ambulantas wastewater is discharged in septic trenches or inappropriate shallow holes.

Disposal of solid/medical waste and presence of rodents

Waste disposal represents an even greater public health problem. In MC/HCs, solid waste is mainly disposed of in containers, while ambulantas employ approximately identical numbers of containers and waste bins with lids (27% and 28%, respectively). Separate dishes for medical waste (used bandages, needles and syringes) exist in only 25% of MC/HCs and 20% of ambulantas. In 92% of MC/HCs and in 69% of ambulantas, potentially contagious medical waste is disposed of together with other solid waste. Overview of the water disposal conditions is presented in **Figure 5**.

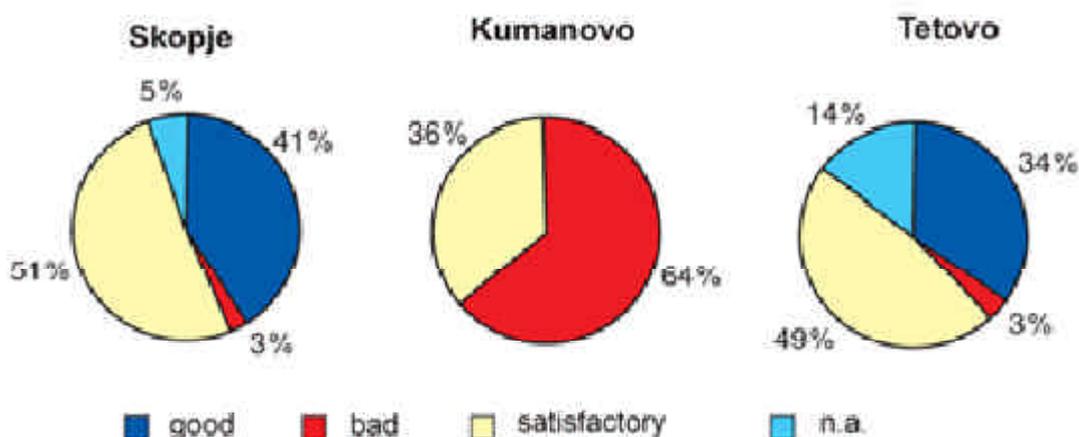


Figure 5. Waste disposal conditions, three regions.

The occasional presence of rodents is reported in 83% of MC/HCs and 63% of ambulantas buildings, even though preventive measures have been taken in those facilities (reported by 58% of MC/HCs and 33% of ambulantas). In fact, DDD activities are regularly conducted in 83% of MC/HC facilities, while those activities are less frequently conducted in ambulantas, with only 39% of the facilities regularly covered.

In general, there are quite substantial regional differences between the ambulantas concerning environmental conditions. In **Figure 6**, all environmental variables for ambulantas were extrapolated and cross-tabulated to obtain descriptive characteristics. Here, ambulantas are divided into three broad categories: those in good, satisfactory and bad environmental condition. The worst environmental conditions can be found in ambulantas in the Kumanovo region, followed by the Tetovo region. For more detailed information, see Annex 4.

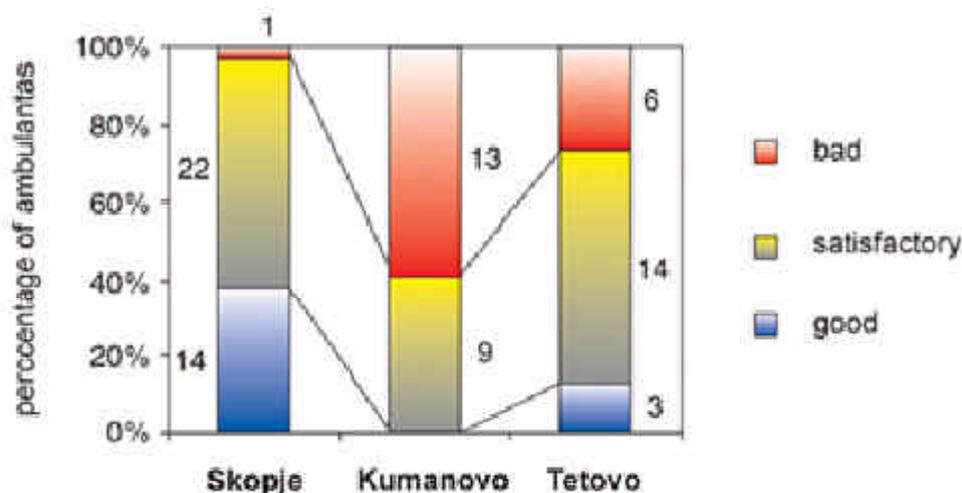


Figure 6. Ambulantas, general overview of environmental conditions, three regions.

Health Status of the Population

The conflict has severely impaired the delivery of health care, particularly preventive services targeting specific segments of the population. For example, during the first six months of 2001, in both the Kumanovo and Tetovo regions, MC/HCs reported a significant drop in the vaccination coverage rate of children, to the less than 50% for all main vaccines (BCG, DTP, OPV).

The regular flow of health information from the peripheral to the central level was severely impeded in the conflict-affected areas. This resulted in the lack of updated information on the incidence and prevalence of the main pathologies affecting children and adults, especially in rural areas. Besides the recent problems in communication brought about by conflict, RHA indicates that the overall health information system is fragmented and centralised. There is a clear division of responsibility between PHC institutions and corresponding IPHs. At PHC level (Ambulantas and MC/HCs), general practitioners are only responsible for the collection and forwarding of data to IPHs. There are no personnel specialising in health information processing and analysis (E.g. epidemiologists, social medicine specialists). Health information data is analysed and compiled in regional IPHs. From the RHA results it appears that regular feedback to information providers (PHC physicians) is insufficient or lacking.

Therefore, the information collected from the most peripheral branch of the health system (Ambulantas), on the most frequently encountered diseases, was presented in a broad disease group pattern. The information gathered during RHA has shown that the most com-

mon pathologies amongst adults are respiratory tract infections, cardiovascular diseases, dismetabolic diseases and gastro-intestinal diseases (both acute and chronic). Children are most affected by respiratory tract infections and diarrhoea-related diseases.

Due to a mandatory reporting system in the country, communicable disease data is more readily available. In the period January-June 2001, chickenpox, acute enterocolitis (infectious diarrhoea), scabies, food poisoning and tuberculosis were the most common communicable diseases registered in the three crisis-affected regions (**Table 4**).

Table 4. The most frequent communicable diseases, January-June 2001.

Communicable disease	Cumulative Number	Incidence (per 100,000 pop.)
Chickenpox	1,665	22.2
Acute enterocolitis	1,422	19
Scabies	609	8.1
Food poisoning	323	4.3
Tuberculosis	189	2.5

Status of the Health Facilities

Health personnel

A strong urban bias can be noted with regards to the distribution of health personnel. When comparing cumulative numbers of health professionals in the crisis-affected regions, for each health worker at an ambulanta there are more than eight health workers at MC/HCs.

A peculiar characteristic of MC/HCs is the high ratio of specialists versus general practitioners. In two MC/HCs (Kumanovo and Tetovo), this ratio is approximately 1.5: 1. In nine HCs in Skopje, this difference is almost negligible. While the high numbers of specialists in MC/HCs are justifiable in light of the fact that both facilities have huge in-patient facilities and provide hospital care (358 and 490 beds respectively for Kumanovo and Tetovo MC/HC), HCs in Skopje, providing only outpatient services, are disproportionately staffed for delivering specialist-consultative health care.

However, specialist services are almost non-existent in the ambulantas. With the exception of several ambulantas in the Skopje and Tetovo regions (With total number of 38 specialists), there is no medical personnel in nine of the ambulantas in Kumanovo and Tetovo regions that, at the moment, are not in function.

From **Figures 7A** and **7B**, regional differences in the number of staff working in ambulantas are quite evident. Each ambulanta in the Kumanovo region has only one medical team comprised of a general practitioner and a nurse, while a high number of ambulantas in the Skopje region have more than two doctors and nurses employed.

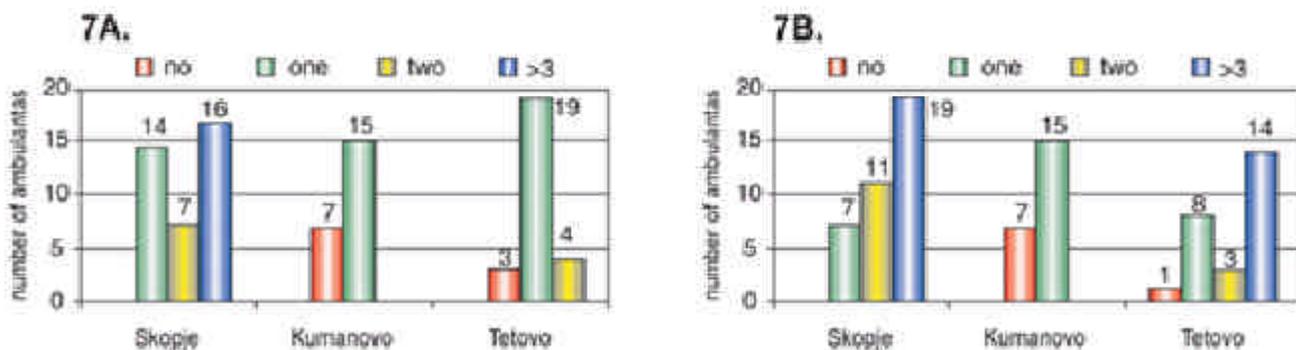


Figure 7. Ambulantas, distribution of doctors (7A) and nurses (7B), three regions.

When the working time of health personnel is considered, the same pattern can be observed. In the Skopje region, the majority of ambulantas are operational every day, while doctors and/or nurses visit almost half of the ambulantas in the region of Kumanovo only once or twice a week. (Figures 8A and 8B).

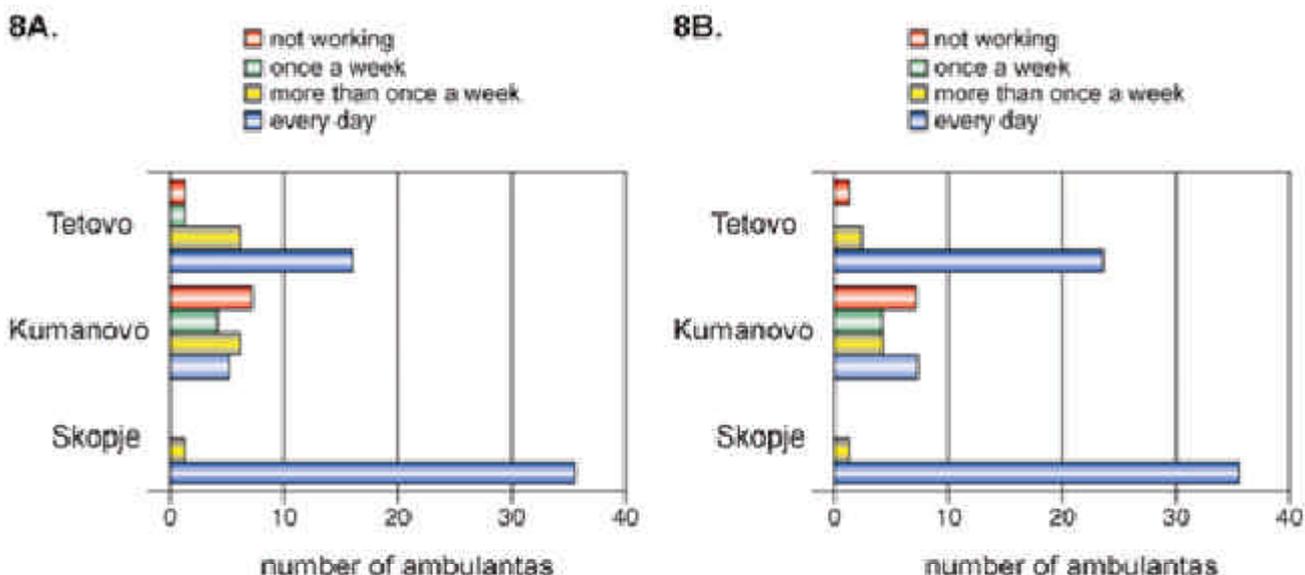


Figure 8. Ambulantas, doctors' (8A) and nurses' (8B) working time, three regions.

Physical status of health facilities

The majority of health facilities are located in very old buildings. 25% of MC/HCs and 43% of ambulantas were built before 1970, and some of them just after World War II. The perception of persons interviewed, is that the buildings housing MC/HCs are considered to be in average condition, while 28% of ambulantas, mainly in Skopje and Kumanovo region, are in a bad condition (Figure 9).

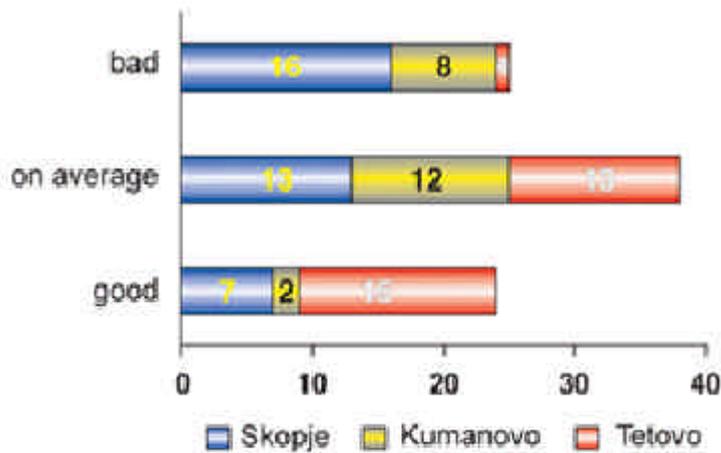


Figure 9. Ambulantas, physical condition, three regions.

In all 9 MC/HCs assessed, the electricity supply is regular. In ambulantas, beside those severely damaged or destroyed, the electricity supply is intermittent (19%). Only two MC/HCs and two ambulantas have their own power generator.

All MC/HCs and 85% of ambulantas have a heating system, the majority using either electricity or liquid fuel. Only certain ambulantas use solid fuel for heating (**Figure 10**).

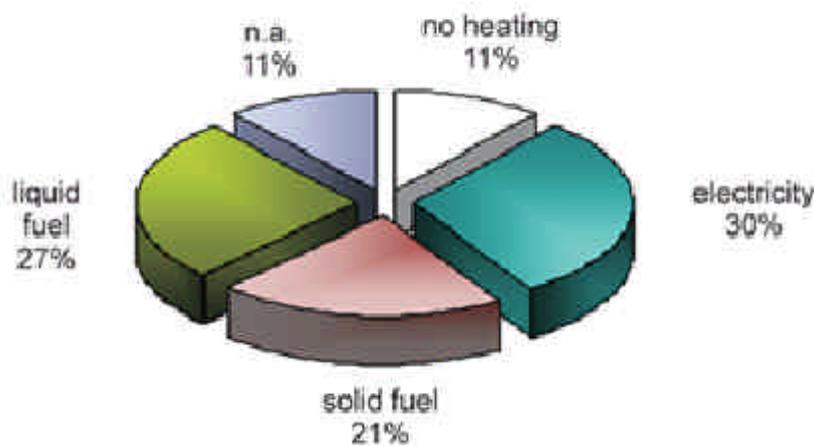


Figure 10. Ambulantas, Types of heating, three regions (n.a. - data not available)

Medical equipment

It was discovered that 58% of the staff interviewed at MC/HCs and only 25% of the staff interviewed at ambulantas are aware of the existence of a standard medical equipment list for different levels of health care. Generally, it can be said that health facilities are not equipped according to the standard list published in the Official Gazette.

Immunisation service is available at 100% of MC/HCs and 77% of ambulantas, equipped with proper facilities for vaccine storage (refrigerators and cold chain equipment). There are no ambulantas equipped with computers for data collection.

Very few MC/HCs (27%) and ambulantas (6%) reported service vehicles and ambulances. Vehicles are generally old and not equipped for medical purposes.

Availability of drugs

All but one of the MC/HCs and 62% of ambulantas (IM/IV therapy) have internal pharmacies. MC/HCs in Tetovo and Kumanovo buy drugs from wholesalers. HCs in Skopje have central drug procurement services, and ambulantas receive drugs from their respective MC/HCs.

In the last six months, drug supplies have been regular in 82% of MC/HCs and in 56% of ambulantas. During the same period, approximately 60% of all PHC facilities reported some drugs out of stock.

The most frequently used drugs in PHC health facilities are antibiotics, antirheumatics, analgesics, antihypertensives, sedatives, cardiotonics, antidiabetics and vitamins.

Needs of the Health Facilities

Medical personnel

MC/HCs are generally well staffed. This is particularly true in the Skopje region, where many experienced specialists work in PHC. There is a need for new staff, or the relocation of existing staff, especially in the rural and remote areas of Kumanovo and Tetovo (Figure 11). Reintegration of medical staff employed during the conflict in areas controlled by EAAGs into the healthcare system of the former Yugoslav Republic of Macedonia should be given high priority.



Figure 11. Ambulantas, staff needs, three regions.

Rehabilitation and reconstruction of health facilities

Two-thirds of MC/HCs require small repairs in different units (Mainly painting, carpentry and water supply and sewerage system repairs). One-third of MC/HCs requires thorough rehabilitation due to poor maintenance.

Data collected indicates that 85% of the ambulantas buildings are in need of maintenance and repair. Twenty-nine ambulantas (32%) are in need of complete reconstruction. The most critical are those situated in places directly affected by conflict (Ambulantas of Lipkovo municipality in the Kumanovo region; Aracinovo and Radusa in the Skopje region). For ambulantas requiring smaller interventions, the services requiring greater assistance are General Medicine, Paediatrics, Immunisation and Polyvalent patronage.

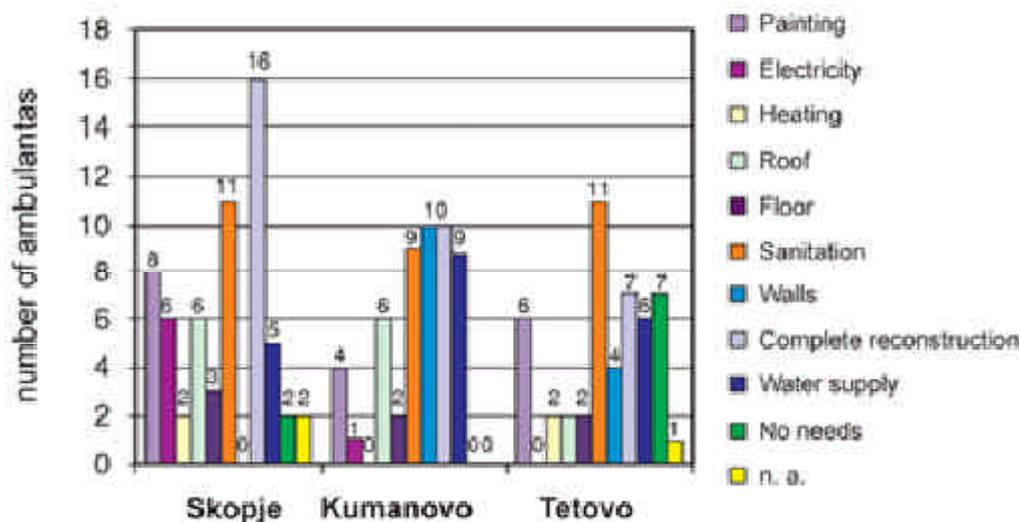


Figure 12. Ambulantas, overview of needs for repairs and rehabilitation, three regions.

Medical equipment

All MC/HCs would like to renew their existing equipment and receive expensive, modern medical equipment. In Tetovo and Kumanovo MC/HCs, new vehicles/ambulances are one of the priorities.

Table 5. Ambulantas, equipment needs, three regions.

Equipment	Number of ambulantas		
	Skopje	Kumanovo	Tetovo
All Basic Equipment	0	1	0
Stethoscope & Sphygmomanometer	2	6	1
Sterilizer	1	10	0
Oxygen Therapy Equipment	13	9	2
Minor Surgery Kit	0	9	1
Refrigerator	0	6	0
Blood/Urine Test Strips	13	10	6
Scale for Infants/Adults	0	10	1
Otoscope & Ophthalmoscope	11	6	1
ECG	13	14	1
Vehicles	1	3	0
Furniture	5	11	4

The greatest need for equipment is in ambulantas that were completely looted during and after the conflict (Kumanovo region, Lipkovo municipality). Ambulantas equipment needs are outlined in **Table 5** Supplying ambulantas with equipment not on the basic equipment list (E.g. ECG, Otoscope/Ophthalmoscope and vehicles) should be endeavoured with caution and only after a careful reassessment of needs.

Drugs

Since ambulantas receive their supplies from related MC/HCs, drug needs are relatively uniform for all health facilities. The most critically needed drugs are those currently missing from stock: antibiotics, analgesics, antirheumatics, antihypertensives, and cardiotonics. Needs are mainly oriented towards parenteral (IV/IM) therapy.

From RHA, it appears that vitamins are over-utilised in medical practice. Some health facilities have expressed the need for disinfectants and bandage material as well. The drug needs of ambulantas are provided in **Table 6**

Table 6. Ambulantas, drug needs, three regions.

Drugs	Number of ambulantas		
	Skopje	Kumanovo	Tetovo
Antibiotics	6	1	11
Antirheumatics	5	0	14
Analgesics	0	0	3
Antihypertensives	1	0	3
Spasmolitics	0	0	2
Cardiotonics	1	0	3
Sedatives	6	0	1
No needs	9	1	0

CONCLUSIONS

RHA has highlighted chronic and persisting problems associated with the provision of primary health care services in the former Yugoslav Republic of Macedonia. In particular, those problems related to staffing, the accessibility and maintenance of health facilities, and the status of equipment and regularity of drug supplies. Certain public health issues (burden of disease, environmental conditions, flow of health information) are of special concern regarding the organisation of primary health care in the three conflict-affected areas.

Health personnel

- An uneven distribution of health personnel exists, which is not in accordance with local census figures. There exists a strong urban bias, both in terms of population coverage, and the distribution of specialists and general practitioners.
- Health staff was found to be in need of refresher courses. Continuing education in PHC, public health (epidemiology and environmental health) and rational use of drugs were also sighted as requirements.

Infrastructure

- Most of the health facilities are more than 30 years old and have not been previously well maintained. Two-thirds of MC/HCs assessed (67%) require some repairs and one-third (33%) need thorough rehabilitation. The vast majority of ambulancias (90%) are in need of rehabilitation. Four of them were seriously damaged or totally destroyed in the last six months. Services requiring the most urgent rehabilitation are General Medicine, Paediatrics, Immunisation and Polyvalent Patronage.
- Accessibility to health services and transport to/from ambulancias and MC/HCs appears to be a problem, especially in rural/post-conflict areas.

Equipment, drugs & medical supplies

- Although a standard list of medical equipment is available, personnel from the majority of health facilities were unaware of its existence.
- A regular supply of drugs is reported in only 56% of ambulancias and 82% of MC/HCs.

Public health issues

- Chronic disease represents the principal problem facing the population covered by RHA, while the incidence of communicable disease is stable and shows a relatively uniform pattern across the three conflict-affected regions.
- Environmental issues and waste-disposal in health facilities are a serious concern. Many of them have reported the presence of rodents. There is an absence of systematic disposal procedures for medical waste, including needles and other contagious materials, potentially dangerous to the environment.
- The regular flow of health information from ambulancias to MC/HCs has been disrupted

in those areas affected by conflict. Recent events in the former Yugoslav Republic of Macedonia have underscored the need to improve the collection, analysis and dissemination of basic health information. Health practitioners at the peripheral level seem unaware of basic health indicators in the region they are covering.

RECOMMENDATIONS

The assessment highlights four major areas in need of intervention. For more specific information regarding the status and needs of PHC facilities in the regions of Skopje, Kumanovo and Tetovo please refer to the data held at WHO HAO Skopje.

WHO HAO, as a leading humanitarian health agency, should continue to co-ordinate all health emergency activities in order to assist MoH in improving the functioning of those health services affected by the crisis.

Health personnel

- There is a need to relocate health personnel of all qualifications to the rural areas of Tetovo and Kumanovo. The urban bias in the distribution of health personnel could be overcome by the introduction of an incentive scheme in order to make the option of working in rural health facilities more attractive to health personnel, or by ensuring greater mobility of existing personnel (mobile teams).
- The reintegration into healthcare system of medical staff deployed in conflict-affected areas should be given a high priority.

Infrastructure

- Rehabilitation of those health facilities in poor condition is required. The interventions needed involve painting and repairs to heating systems, sewerage, electrical systems, roofs, floors, windows and doors.
- Complete reconstruction should be provided for those ambulancias that were destroyed during the conflict.

Equipment, drugs & medical supplies

- The official list of medical equipment should be updated, revised, distributed and implemented in all units, in order to standardise practice. Old medical equipment should be replaced, based on a standardised list, produced by the MoH, of equipment for each type of health facility.
- Drugs need to be re-supplied regularly since some areas were allowed to run out of stock.
- A drug utilisation survey should be implemented in order to assess prescription practices and use of essential drugs.

Public Health Issues

- Additional public health education for health personnel needs to be directed at preventing chronic diseases and, since cardiovascular and lung diseases are the most prevalent, habitual smoking and diet should be addressed.
- Opportunities for continuing education should be offered to health personnel in the form of on-the-job training and refresher courses on all public health issues highlighted during the assessment. WHO publications and training guidelines need to be translated into local languages.
- The existing health information system should be made more flexible and interactive, especially in providing feedback to health practitioners at the peripheral level.

ANNEX 1

WORKSHOP - RAPID HEALTH ASSESSMENT, 03/10/2001

List of participants

NAME	TITLE	ORGANIZATION
Prof. Dr Andon Cibisev	State Secretary of Health	MoH
Dr Mentor Mela	Head of the Sector of Primary and Preventive Health Care	MoH
Mr. Nevzat Elezi	Sanitary Inspector	MoH-Republic Sanitary Inspectorate
Professor Dr Elisaveta Stikova	Director of RIPH	RIHP
Dr Zarko Karadzovski	Epidemiologist	RIHP
Ass. Dr Mihail Kocubovski	Hygiene Specialist	RIHP
Dr Lence Kolevska	Hygiene Specialist	RIPH
Dr Metodi Temov	Epidemiologist	IPH Skopje
Dr Peco Simjanovski	Hygiene specialist	IPH Skopje
Prim. Dr Ljuben Ristevski	General Practice Specialist	Health Centre-Skopje
Dr Radmila Stojanovic	Paediatrician Specialist	Health Centre-Skopje
Mrs. Julijana Madzovska	Patronage Nurse	Health Centre-Skopje
Dr Slavco Aleksievski	General Practice Specialist	Medical Centre Kumanovo
Mr Pavlovski Zoran	Counsellor of the Major-Coordinator for Humanitarian Assistance	Municipality of Kumanovo
Dr Predrag Georgievski	Epidemiologist	IPH-Kumanovo
Dr Petkovska Mimoza	Hygiene Specialist	IPH-Kumanovo
Dr Biljana Samdeva	Paediatrician Specialist	Medical Centre Kumanovo
Mrs. Liljana Ivanonska	Patronage Nurse	Medical Centre Kumanovo
Dr Ratka Veteroska	Director	IPH-Tetovo
Dr Dzavid Kadrija	Hygiene Specialist	IPH-Tetovo
Dr Raim Taci	Director of Medical Centre	Medical Centre Tetovo
Dr Lejla Reka	General Practice Specialist	Medical Centre Tetovo
Dr Tagedin Rakipi	General Practice Specialist	Medical Centre Tetovo
Dr Ivan Simovski	Paediatrician Specialist	Medical Centre Tetovo
Mrs. Jakdete Alimi	Nurse	Medical Centre Tetovo
Mr. Emilio Bagarela	Project Manager	Italian Co-operation
Dr Vasiliki Delimitsou	Health Officer	UNICEF
Dr Katerina Venovska	Project Assistant	UNICEF
Mr John Gelissen	Health Coordinator	ICRC
Dr Mirjana Ipsa	Health Secretary	ICRC
Dr Silvana Onceva	General Practitioner	MRC
Dr Teuta Demjaha	Program Coordinator	IPU WB of MoH
Mr. Aleksandar Krzalovski	Project Coordinator	MCIC
Mr Gramoz Sabani	Project Assistant	MCIC
Dr Ilir Ismaili	Lead Health Educator	ARC
Dr Pepica Vajmaliva	General Practitioner	AAR Japan
Mr Saso Dimitrov	MRTF Project Coordinator	AAR Japan
Mr Robin Matjanoski	Executive Officer	ART International
Dr Andrea Anderson	Chief Executive Officer	ART International
Mr Lee R. Briggs	Executive Officer	ART International
Dr Maja Suslevska	Program Assistant	Save the Children - UK
Mrs Kevser Loki	Program Manager	IRC
Mrs Gordana Trajkovska	Shelter Program Assistant	IRC
Mrs Lejla Fejzula	Project Manager	EI Hilal
Dr Bari Abazi	Member of the Board	EI Hilal
Dr Biljana Simjanovska	Project Coordinator	Handicap International
Mr. Juan Sevilla Gomez	LTC SPA, HQ AF IO/NGO	Task Force Fox
Mr. Randy Huer	Military Liason Officer	WHO Geneva-Civil Medical Liaison Officer

ANNEX 2

FIELD WORK – RAPID HEALTH ASSESSMENT

List of interviewers

SKOPJE	
Name	Date of field work
Dr. Novica Filipovic	05, 08, 09.10.2001
Elizabeta Stefanovska	05, 08, 09.10.2001
Julijana Madzovska	05, 08, 09.10.2001
Violeta Peic	05, 08, 09.10.2001
Dr. Radmila Stojanovic	05, 08, 09.10.2001
Florija Hamid	05, 08, 09.10.2001
Dr. Velimir Jovanovski	05, 08, 09.10.2001
Pavlina Apostolovska	05, 08, 09.10.2001
Dr. Tome Evrosimovski	05, 08, 09.10.2001
Dr. Ljuben Ristevski	05, 08, 09.10.2001
Jovan Mladenov	05, 08, 09.10.2001
KUMANOVO	
Dr. Mimoza Petkovska	05.10.2001
Dr. Predrag Georgievski	08.10.2001
Zoran Pavlovski	08.10.2001
Dr. Biljana Sandeva	05.10.2001
Javorka Todorovska	08.10.2001
Goran Stamenkovski	09.10.2001
Dr. Slavco Aleksievski	05.10.2001
Liljana Ivanova	08.10.2001
Zoran Boskovski	09.10.2001
TETOVO	
Dr. Tajedin Rakipi	05.10.2001
Saban Arslani	05, 06, 08.10.2001
Dr. Lejla Reka	06, 09.10.2001
Gorica Markovic	06.10.2001
Dr. Ekrem Ismani	06, 08.10.2001
Jakupe Odai	06, 09.10.2001
Ajris Musliu	06, 08, 09.10.2001
Dr. Ivan Simovski	08.10.2001

ANNEX 3

Summary of Reference Values

	SKOPJE	KUMANOVO	TETOVO
GENERAL INFORMATION			
Population, total	579,846	132,000	210,000
Population, 0 - 6 years	57,635 (9.3%)	18,067 (7.3%)	16,000 (11.3%)
Women of reproductive age	153,395	43,376	49,100
Pregnant women	8,500	3,124	1,727
Elderly people	51,761	11,945	14,663
Crude death rate/1,000	7.6	8.3	7.1
Live births/1,000	15	19.6	19.4
Perinatal death rate/1,000	16.2	16.9	17.3
Maternal mortality rate/100,000 live births	7.6	8.3	7.1
Abortion rate/100 live births	28	31	30
MEDICAL CENTRES/ HEALTH CENTRES			
Number of MC/HCs	9 HC	1 MC/HC	1 MC/HC
Number of municipalities covered	16	5	10
Number of beds	0	358	490
Patronage services	5 centres	1	1
Home visit services	5 centres	1	1
Water supply	Regular	Regular	Intermittent
Number of doctors in all MC/HCs	451	209	213
Specialist to general practitioner ratio	1.12: 1	1.15: 1	2.18: 1
Number of nurses in all MC/HCs	574	468	417
Population per doctor	1,285	632	986
AMBULANTAS			
Number of ambulantas	39	22	29
Number of villages covered by an ambulanta, range	0-12	1-9	1-10
Population in the catchment area, mean	10,864	1,913	6,107
Distance to the nearest MC/HC, mean (km)	9.7	15.0	12.8
Distance to the nearest emergency unit, mean (km)	17.4	15.2	15.6
Water supply, mode	Good	Bad	Good
Waste disposal, mode	Satisfactory	Bad	Satisfactory
Environmental conditions, mode	Satisfactory	Bad	Satisfactory
Number of doctors in all ambulantas	129	15	27
Specialist to general practitioner ratio	0.32: 1	No specialists	0.35: 1
Number of nurses in all ambulantas	146	15	69
Number of doctors per ambulanta, mean	3.5	0.7	1.1
Population per doctor, range	600-15,000	425-10,000	400-12,000
Number of nurses per ambulanta, mean	3.9	0.7	2.8
Staff status, mode	Satisfactory/good	Satisfactory	Satisfactory
Building status, mode	Bad	Average	Average/good
Medical equipment status, mode	N/A	N/S	N/A
Drug supply status, mode	Regular	No	No
Staff needs, mode	No	No	Partial
No. of ambulantas in need of complete rehabilitation	15	7	7

ANNEX 4. CAPACITY AND NEEDS OF AMBULANTAS - SKOPJE

Municipality	Ambulanta	Population	Nb of villages	Km to MC/HC	Km to emergency	Water Supply	Waste Disposal	Environment. Conditions	Nb of doctors	Population per doctor	Nb of nurses
Aracinovo	Aracinovo	9980	4	6	17	bad	n.a.	n.a.	n.a.	n.a.	n.a.
	Grusino	1007	1	20	3'	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cucer Sandevo	Sandeva	3000	6	9	12	good	satisf	satisf	2	1500	2
	Kuceviste	1500	2	12	16	good	satisf	satisf	1	1500	1
Cair	Blace	1200	1	25	28	satisf	satisf	satisf	1	1200	1
	Ljuboten	3325	2	12	15	good	satisf	satisf	1	3325	2
Kondovo	Butel	16873	0	1	4	good	satisf	satisf	8	2122	14
	Rasce	3500	2	11	2'	good	satisf	satisf	1	3500	1
	Radusa	4000	3	20	30	good	satisf	satisf	2	2000	2
	Svilare	3500	2	1	17	good	satisf	satisf	1	3500	1
	Avtokomanda	21500	0	3	8	good	good	good	9	2389	10
	Zitiste	8500	1	1.5	12.5	good	good	good	2	4250	1
Gazi Baba	Madzari	3000	0	1.5	12.5	good	good	good	3	3000	4
	Idrizovo	5115	2	7	18	good	good	good	2	2558	3
	Cresevo	2606	3	14	25	good	satisf	satisf	1	2606	2
	Bulacani	1888	2	16	27	good	satisf	satisf	1	1888	2
Petrovec	Petrovec	5797	10	14	25	satisf	good	satisf	5	1159	7
	Konjari	2326	7	38	49	good	satisf	satisf	1	2326	2
Ilinden	Miladinovci	3755	6	24	35	good	satisf	satisf	3	1252	3
	Kadino	5877	3	19	30	good	satisf	satisf	1	5877	2
	Ilinden	14512	3	17	28	good	satisf	satisf	7	2073	5
	Gorce Petrov	40000	0	3	10	good	good	satisf	7	5714	13
Karpos	Karpos	10000	0	5	5	good	good	good	12	853	12
	PZZ Karpos	4500	4	7	10	good	satisf	satisf	1	4500	1
	Vlce	3000	3	2	8	good	satisf	satisf	5	600	4
	Taftalidze	60000	2	0.5	1	good	good	good	4	15000	4
Saraž	Kazle	30000	0	2	2	good	good	good	2	15000	2
	Bukovic	n.a.	6	10	2'	good	satisf	satisf	2	n.a.	3
Gorce Petrov	Glumovo	4500	3	10	20	good	satisf	satisf	1	4500	1
	Volkovo	25000	6	6	16	good	satisf	satisf	3	8333	3
Kisela Voda	Lisice	30000	0	5	8	good	good	good	10	3000	11
	Crnice	10000	0	3	5	good	good	good	6	1687	6
Zelenikovo	11 Okomvri	15000	0	5	6	good	good	good	8	1875	5
	Rakovinci	10000	3	8	12	good	good	good	4	2500	3
Studenticani	Zelenikovo	10000	12	13	30	good	good	good	2	5000	3
	Balinci	8000	2	6	20	satisf	bad	bad	1	8000	2
Centar	Kolicani	5000	6	12	25	satisf	satisf	satisf	1	5000	2
	Studenticani	8000	2	6	20	good	good	good	1	8000	2
	Vodno	8000	0	2	0.2	good	good	good	7	1143	4

Municipality	Ambu anta	Staff status	Building status	Medical equipment status	Drug supply status	Staff needs	Rehabilitation/ reconstruction needs	Medical equipment needs	Drugs needs	Overall Needs
Aracino	Aracino	n.a.	n.a.	n.a.	n.a.	need	G;	n.a.	n.a.	RE
	Grsino	n.a.	n.a.	n.a.	n.a.	need	G;	n.a.	n.a.	n.a.
Cucer Sandevo	Sandevo	satisf	average	satis ²	reg	no	S;	n.a.	ra needs	RE
	Kuceviste	satisf	average	satis ²	reg	partial	E, S, A, WS;	n.a.	ra needs	RS
Cair	Blace	satisf	average	satis ²	irreg	partial	A;	n.a.	ra needs	S
	Ljuboten	satisf	good	satis ²	reg	partial	A, WS, E;	n.a.	ra needs	S
	Butel	good	bad	satis ²	reg	partial	G;	n.a.	ra needs	RSE
	Rasoe	satisf	bad	not satisf	reg	no	G;	11;	1, 2, 7;	RE
Kondovo	Radusa	satisf	bad	n.a.	reg	no	C - destroyed	n.a.	1, 4, 7;	RE
	Svilare	satisf	average	not satisf	reg	no	P, S, WS, F, A	n.a.	1, 7;	RE
	Avtokomanda	good	bad	n.a.	reg	no	G;	3, 6, 8, 9;	n.a.	RE
Gazi Baba	Zitiste	satisf	bad	n.a.	reg	no	G;	3, 6, 8, 9;	n.a.	RE
	Madzari	good	good	n.a.	reg	no	nc needs	3, 6, 8, 9;	n.a.	E
	Idrizovo	good	n.a.	n.a.	reg	no	n.a.	3, 6, 8, 9;	n.a.	RE
	Cresevo	satisf	good	n.a.	reg	no	nc needs	3, 6, 8, 9;	n.a.	E
	Bulacani	satisf	bad	n.a.	reg	no	G;	3, 6, 8, 9;	n.a.	RE
	Petrovec	good	good	n.a.	reg	no	WS;	3, 6, 8, 9;	n.a.	E
Petovec	Konjari	satisf	average	n.a.	reg	no	R, F;	3, 6, 8, 9;	n.a.	RE
	Miladinovci	satisf	average	n.a.	reg	no	R, S;	3, 6, 8, 9;	n.a.	E
Ilinden	Kadino	satisf	bad	n.a.	reg	no	G;	3, 6, 8, 9;	n.a.	RE
	Ilinden	good	bad	n.a.	reg	no	R, S;	1, 3, 6, 8, 9;	n.a.	RE
	Gjorce Petrov	good	bad	not satisf	reg	no	R, P, E, S, A;	n.a.	1, 2;	RED
	Karpos	good	good	not satisf	reg	no	S;	n.a.	n.a.	RE
Karpos	PZZ Karpos	satisf	bad	satis ²	no supply	no	n.a.	n.a.	n.a.	RED
	Vlase	good	average	not satisf	reg	partial	E, S, H, WS, P;	2;	ra needs	RSE
	Taftalidze	good	bad	not satisf	no supply	no	E, P, S, R;	n.a.	8, 7;	RE
	Kozle	good	average	not satisf	reg	partial	P, S;	n.a.	n.a.	SE
Saraj	Bukovic	good	good	not satisf	reg	no	S, R, H;	3, 6, 9, 11;	ra needs	RE
	Glumovo	satisf	average	not satisf	reg	no	G;	1, 3, 6, 9, 11;	1, 7;	RE
Gorce Petrov	Volkovo	good	bad	not satisf	reg	no	G;	11;	1, 2, 7;	RE
	Lisice	good	bad	n.a.	reg	no	G;	n.a.	n.a.	RE
	Crnice	good	bad	n.a.	reg	no	G;	n.a.	n.a.	RE
Kisela Voda	11 Oktomvri	good	bad	n.a.	reg	no	G;	n.a.	2;	RE
	Rakotinci	good	average	n.a.	reg	partial	P;	n.a.	2;	RSE
Zelenikovo	Zelenikovo	satisf	good	n.a.	reg	partial	P, F;	n.a.	n.a.	RSED
	Batinci	satisf	bad	n.a.	reg	partial	G;	n.a.	n.a.	RSED
Studenticani	Kolicani	satisf	bad	n.a.	reg	no	G;	n.a.	ra needs	RED
	Studenticani	satisf	bad	n.a.	reg	partial	P;	n.a.	n.a.	SED
Centar	Vodno	good	average	not satisf	reg	no	S, E;	10, 11;	ra needs	E

ANNEX 4. CAPACITY AND NEEDS OF AMBULANTAS - KUMANOVO											
Municipality	Ambulanta	Nb of villages	Population	Km to MC/HC	Km to emergency	Water Supply	Waste Disposal	Environment. Conditions	Nb of doctors	Populat on per doctor	Nb of nurses
Kumanovo	Umin Dol	2	900	12	11	bad	satisf	bad	1	900	1
	Tabanovce	5	1602	10	11	bad	satisf	bad	1	1602	1
	Gorno Konjare	1	1200	7	8	satisf	satisf	satisf	1	1200	1
	Dolno Konjare	2	2100	4	5	good	satisf	satisf	1	2100	1
	Naselba Karpos	2	1000	5	4	satisf	bad	bad	1	1000	1
	Ljubodrag	1	470	8	7	bad	satisf	bad	1	470	1
	Pcinja	4	1400	11	12	satisf	bad	bad	1	1400	1
	Lipkovo	8	3200	8	8	bad	bad	bad	0	n.a.	0
	Slupcane	5	3000	8	8	bad	bad	bad	0	n.a.	0
	Matejce	3	n.a.	15	15	good	bad	bad	0	n.a.	0
Lipkovo	Nikustak	1	1200	12	12	bad	bad	bad	0	n.a.	0
	Lojane	2	n.a.	10	10	bad	bad	bad	0	n.a.	0
	Olja	n.a.	3100	10	10	satisf	bad	bad	0	n.a.	0
	Arbanasko	5	n.a.	35	36	bad	bad	bad	1	n.a.	1
	Zegljane	8	546	27	28	bad	bad	bad	0	n.a.	0
	Bajlovc	6	425	35	34	bad	bad	bad	1	425	1
	Staro Nagoricane	7	2423	16	17	bad	satisf	bad	1	2423	1
	Mlado Nagoricane	3	1600	11	12	good	satisf	satisf	1	1600	1
	Orasac	5	752	12	11	bad	bad	bad	1	752	1
	Gradiste	7	541	25	26	bad	bad	bad	1	541	1
Kletovce	Kletovce	9	1088	25	24	satisf	satisf	satisf	1	1088	1
	Oblovce	6	787	25	26	bad	bad	bad	1	787	1
Staro Nagoricane											

Municipality	Ambulanta	Staff status	Building status	Medical equipment status	Drug supply status	Staff needs	Rehabilitation/ reconstruction needs	Medical equipment needs	Drugs needs	Overall needs	
Kumanovo	Umir Dol	satisf	bad	not satisf	reg	no need	C;	2, 3, 7, 9, 11;	n.a.	RED	
	Tabanovce	satisf	average	not satisf	reg	partial	R, W, S, WS;	1, 3, 4, 5, 6, 7, 8, 9, 10, 11;	n.a.	RSED	
	Gorno Konjare	satisf	average	not satisf	reg	partial	R, W, S, WS;	1, 2, 3, 6, 7, 9, 11;	n.a.	SED	
	Do no Konjare	satisf	average	not satisf	reg	partial	R, WS, S;	1, 3, 5, 6, 7, 9, 11;	n.a.	RS	
	Naselba Karocis	satisf	average	not satisf	irreg	partial	S, WS, E, W, A;	2, 4, 7, 9;	n.a.	SE	
	Ljubodrag	satisf	average	not satisf	reg	no need	S, R, WS;	2, 3, 4, 6, 7, 9, 11;	n.a.	ED	
	Pointja	satisf	average	not satisf	reg	no need	W;	2, 3, 5, 6, 7, 9;	n.a.	ED	
	Lipkovo	bad	bad	not satisf	no supply	need	no inf. - not working	n.a.	n.a.	n.a.	RSED
	Slupcane	bad	bad	not satisf	no supply	need	destroyed - not working partially damaged.	n.a.	n.a.	n.a.	RSED
	Matejce	bad	bad	not satisf	no supply	need	not working	n.a.	n.a.	n.a.	RSED
Lipkovo	Nikustak	bad	bad	not satisf	no supply	need	destroyed not working	n.a.	n.a.	n.a.	RSED
	Loane	bad	average	not satisf	no supply	need	no inf. - not working	n.a.	n.a.	n.a.	RSED
	Otlja	bad	bad	not satisf	no supply	need	no inf. - not working	n.a.	n.a.	n.a.	RSED
	Arbanasko	satisf	good	not satisf	no supply	no need	C;	2, 4, 5, 6, 8;	n.a.	ED	
	Zegljane	bad	bad	not satisf	no supply	need	C;	not in funct on	n.a.	n.a.	RSED
	Bajovce	satisf	average	not satisf	irreg	no need	W, A, S, WS;	2, 3, 4, 6, 9, 11;	n.a.	n.a.	RED
	Staro Nagoricane	satisf	bad	not satisf	irreg	partial	C;	1, 2, 4, 5, 8, 9, 10;	no needs	n.a.	RSD
	Mlado Nagoricane	satisf	average	not satisf	no supply	no need	F, W;	2, 4, 6, 7, 8, 9, 10, 11;	n.a.	n.a.	RED
	Orasac	satisf	good	not satisf	irreg	no need	R, W, S, R, WS;	3, 8, 9, 11;	n.a.	n.a.	RED
	Gratiste	satisf	average	not satisf	reg	no need	W, P, S, WS;	1, 6, 7, 9, 11;	n.a.	n.a.	RED
Kleocvoce	Kleocvoce	satisf	average	not satisf	irreg	partial	W, P;	2, 4, 5, 8, 9, 10, 11;	1;	RSED	
	Oblivce	satisf	average	not satisf	no supply	no need	R, F, P, W, S, WS;	1, 2, 3, 4, 6, 7, 9, 11;	n.a.	RED	

ANNEX 4. CAPACITY AND NEEDS OF AMBULANTAS - TETOVO

Municipality	Ambulance	Population	Nb of villages	Km to MD/HC	Km to emergency	Water Supply	Waste Disposal	Environment. Conditions	Nb of doctors	Population per doctor	No of nurses
Tetovo	Selca	5600	3	7	7	n.a.	n.a.	n.a.	n.a.	n.a.	1
	Gorra Recica	16200	4	3.5	3.5	good	satisf	satisf	2	8000	2
Djepriste	Poroi	9650	5	5	5	good	good	good	1	9650	3
	Gjerno	1500	n.a.	6	6	bad	satisf	bad	1	1500	1
	Tearce	9000	4	12	12	good	satisf	satisf	2	4500	8
Tearce	Slatino	6440	5	10	10	bad	satisf	bad	1	6440	1
	Dobroste	4820	1	5	18	satisf	satisf	satisf	1	4820	3
	Neraste	4300	1	20	20	bad	good	bad	1	4300	2
Sipkovica	Sipkovica	12000	8	15	15	n.a.	satisf	n.a.	n.a.	n.a.	5
	Yesala	3000	2	26	26	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sipkovica	Brodac	1300	1	20	20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Lisec	1300	1	17	17	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bogovinje	Bogovinje	13000	3	12	12	good	good	good	2	6500	4
	Zerovjane	7500	7	12	12	good	satisf	satisf	1	7500	3
	Pirok	6500	2	15	15	good	satisf	satisf	1	6500	3
Brvenica	Brvenica	5000	2	5	5	good	satisf	satisf	1	5000	2
	Cekpeck	12000	4	15	15	satisf	satisf	satisf	1	12000	5
	Tenovo	1200	1	17	17	n.a.	bad	bad	1	1200	1
Vratnica	Vratnica	6000	7	23	23	good	good	good	2	3000	4
	Odri	2200	n.a.	20	20	bad	satisf	bad	1	2200	1
	Orasje	1100	1	3	25	satisf	good	satisf	1	1100	1
Jegunovce	Rogacevo	400	1	7	28	good	good	good	1	400	1
	Jegunovce	3300	6	20	20	bad	good	bad	1	3300	3
	Semsvo	7500	7	15	15	satisf	satisf	satisf	1	7500	3
Kamenjane	Kamenjane	6000	4	7	7	good	satisf	satisf	1	6000	3
	Palciste	4500	2	5.5	5.5	good	satisf	satisf	1	4500	1
Zelino	Uvic	2000	3	25	26	good	good	good	0	n.a.	0
	Zelino	12000	7	9	35	bad	good	bad	1	12000	4
	Grupcin	12000	10	15	15	satisf	good	satisf	1	12000	4

Municipality	Ambulantia	Staff status	Building status	Medical equipment status	Drug supply status	Staff needs	Rehabilitation/ reconstruction needs	Medical equipment needs	Drugs needs	Overall needs
Tetovo	Seice	bad	bad	not satisf	n.a.	need	C;	no data	n.a.	RSED
	Gorna Recica	satisf	average	not satisf	irreg	partial	WS, A, S;	no data	2, 4;	SED
Djepciste	Pogoj	satisf	average	n.a.	no supply	no	C;	complete	1, 2, 4;	E
	Gjerme	bad	good	n.a.	no supply	need	no needs	no data	1, 2;	SED
Tearce	Tearce	good	good	n.a.	irreg	no	no data	no data	1, 2, 3;	ED
	Slatino	satisf	average	n.a.	no supply	partial	C;	no data	2, 5, 6;	SED
Sipkovic	Dobroste	satisf	average	n.a.	reg	no	C;	no data	1, 2, 3, 5;	D
	Neraste	satisf	good	satisf	no supply	no	no needs	7;	1, 2;	D
Sipkovic	Sipkovic	bad	average	satisf	n.a.	need	P;	no data	n.a.	SE
	Vesala	n.a.	average	n.a.	n.a.	need	not working, C - half building	no data	n.a.	S
Brodac	Brodac	n.a.	average	n.a.	n.a.	need	not working, C - half building	no data	n.a.	S
	Lisec	n.a.	good	n.a.	n.a.	need	not working- no needs	no data	n.a.	S
Bogovinje	Bogovinje	satisf	average	satisf	irreg	no	WS, S;	3, 5, 9, 11;	7;	E
	Zerovjane	satisf	good	not satisf	reg	partial	R, A, P, W;	no data	n.a.	SE
Brvenica	Pirok	satisf	average	not satisf	irreg	no	P, WS, S, WS;	1, 4, 6, 8, 11;	1;	ED
	Brvenica	satisf	good	not satisf	irreg	no	P, W, S, H	no data	1, 2;	E
Brvenica	Celopek	satisf	good	satisf	reg	partial	no needs	no data	2;	SE
	Tenovo	satisf	average	not satisf	n.a.	partial	P, S;	no data	n.a.	RS
Vratnica	Vratnica	satisf	good	satisf	no supply	partial	F, S, H;	11;	1, 2, 6;	RED
	Ostri	bad	average	n.a.	no supply	need	C;	no data	n.a.	SED
Jegunovce	Orašje	satisf	average	n.a.	no supply	partial	no needs	no data	2, 4;	SED
	Rogacevo	satisf	good	satisf	no supply	partial	S, WS;	no data	1, 6;	SE
Jegunovce	Jegunovce	satisf	good	satisf	n.a.	no	S;	3, 6;	n.a.	RE
	Semsovo	satisf	good	n.a.	reg	partial	no needs	no data	n.a.	RSE
Kamenjane	Kamenjane	satisf	average	not satisf	no supply	partial	not working- S, A, W, P;	11;	n.a.	SD
	Palciste	satisf	average	not satisf	irreg	partial	F, W, S, WS; not working- no needs	no data	2;	RSED
Zelino	Urvic	bad	good	n.a.	no supply	partial	no needs	no data	n.a.	SED
	Zelino	satisf	good	not satisf	irreg	partial	R;	no data	1, 2;	SE
Zelino	Grupcin	satisf	good	satisf	no supply	partial	S, WS;	no data	1, 2, 3;	SED

Codes used for the **status** of Ambulantas

Code	Water supply
Good	central city or village supply / regularly tested
Satisfactory	intermittent central or local supply / not regularly tested
Bad	predominantly wells / never or rarely tested
n.a.	not available data

Code	Waste disposal
Good	waste water in sewage system & solid waste collected in containers, burnt in incinerator or separate trenches
Satisfactory	waste water in septic trench & solid waste collected in waste bins, burnt in separate trenches
Bad	waste water disposal – other & solid waste collected only in plastic bags, stored with other waste material
n.a.	not available data

Code	Environmental conditions
Good	good water supply & good waste disposal
Satisfactory	satisfactory water supply & satisfactory waste disposal or satisfactory water supply & good waste disposal or good water supply & satisfactory waste disposal
Bad	bad water supply & bad waste disposal / satisfactory water supply & bad waste disposal / bad water supply & satisfactory waste disposal
n.a.	not available data

Code	Staff status
Good	at least two medical doctors & nurses in two working shifts
Satisfactory	at least one medical doctor & nurse in one working shift
Bad	doctor with at least one nurse visiting once or twice a week
n.a.	not available data

Code	Building status
The answers are related to general perception of interviewed persons.	

Code	Medical equipment status
The answers are related to the knowledge of standard equipment list from the MoH.	

Code	Drugs supply status
The answers are related to drug supply to Ambulantas in the last 6 months.	

Codes used for the **needs** of Ambulantas

Code	Staff needs
Need	Bad staff status & code S in overall needs
Partial	Satisfactory staff status & code S in overall needs
No	Good staff status & missing code S in overall needs

Code	Rehabilitation/Reconstruction needs
P	Painting
E	Electricity
H	Heating
R	Roof
F	Floor
W	Walls
WS	Water supply
S	Sanitation
A	Accessibility (bad)
C	Complete reconstruction

Code	Medical equipment needs
1	Stethoscope + sphygmomanometer
2	Sterilizer
3	Oxygen therapy equipment
4	Minor surgery kit
5	Refrigerator
6	Test strips/ urine-blood
7	Scale for infants/adults
8	Otoscope/ Ophthalmoscope
9	ECG
10	Vehicles
11	Furniture

Code	Drug needs
1	Antibiotics
2	Antirheumatics
3	Analgesics
4	Antihypertensives
5	Antispasmodics
6	Cardiotonics
7	Sedatives

Code	Overall needs
RSED	All (Rehabilitation + Staff + Equipment + Drugs)
RSD	Rehabilitation + Staff + Drugs
RED	Rehabilitation + Equipment + Drugs
SED	Staff + Equipment + Drugs
ED	Equipment + Drugs
RS	Rehabilitation + Staff
R	Rehabilitation
S	Medical Staff
E	Equipment
D	Drugs

ANNEX 5

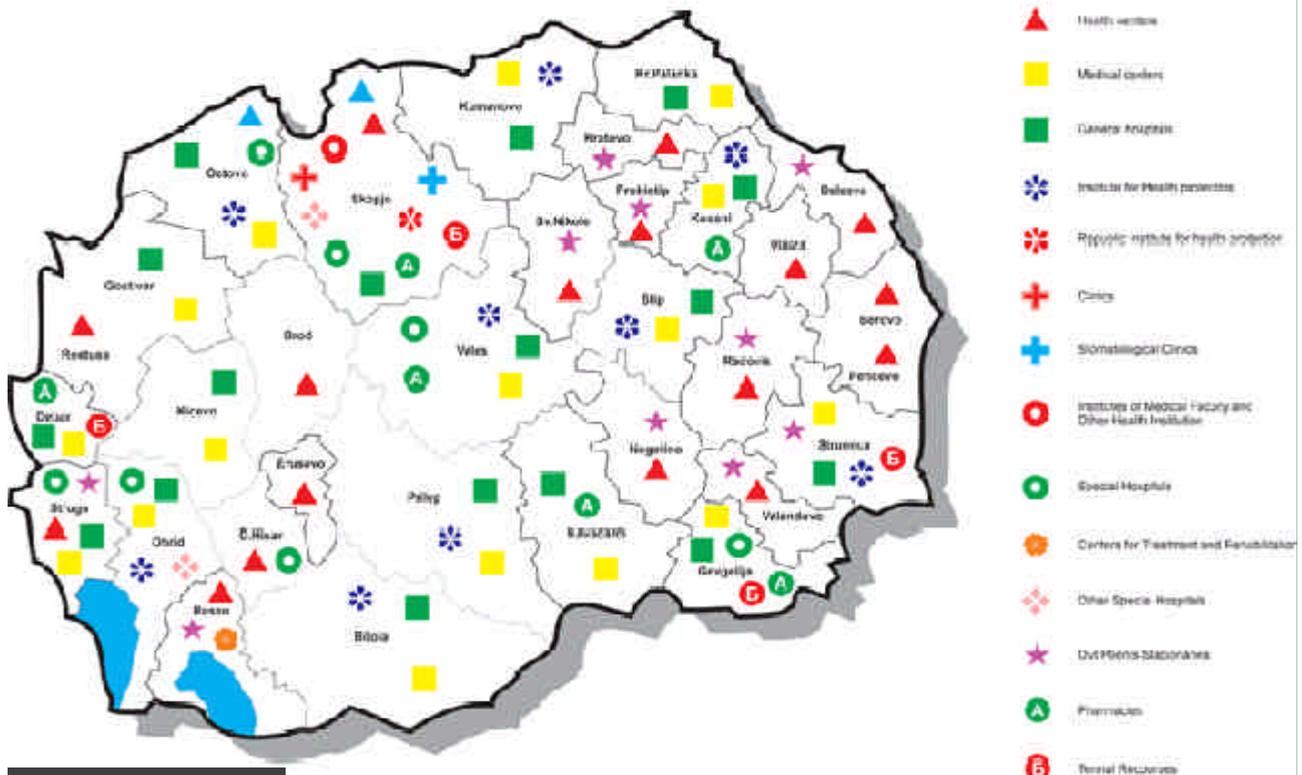
The Maps

IMPORTANT NOTE: The maps presented do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of the country, territory, city or area or of its authorities or concerning the delimitations of its frontiers or boundaries.

1. Geographic Map

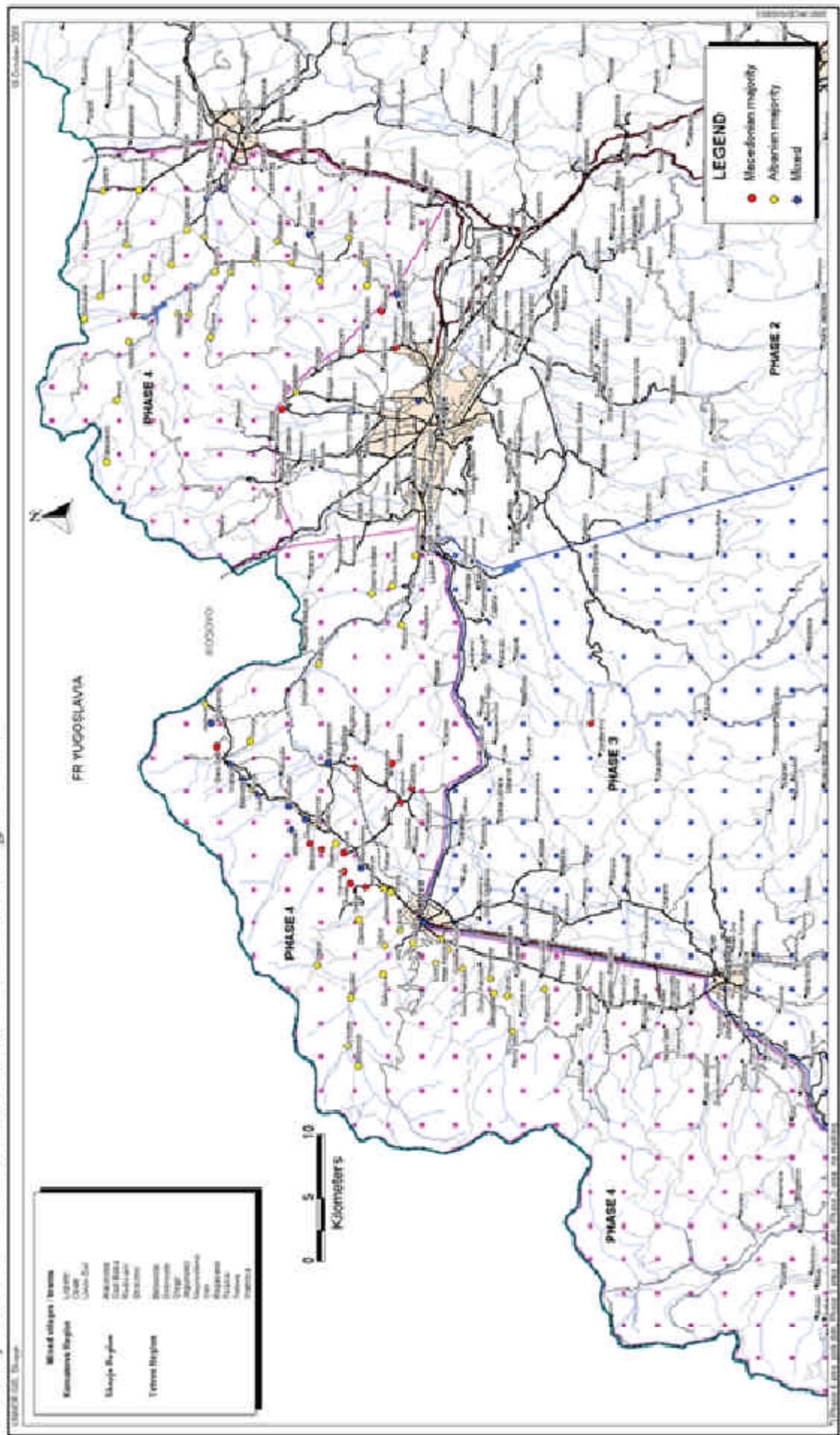


2. Primary Health Care (HC & HS) and Preventive Centres in the former Yugoslav Republic of Macedonia



3. Conflict-Affected Areas and UN Security Phases

Security Phases in FYR of Macedonia / Affected Villages/Towns



The boundaries and names shown on this map do not imply official endorsement or acceptance by UNICEF.