

# Reasons for medical evacuation of Polish soldiers deployed to Balkans, Middle East and Sub-Saharan Africa

Przyczyny ewakuacji medycznych polskich żołnierzy pełniących służbę na Bałkanach, Bliskim Wschodzie i w Afryce Subsaharyjskiej

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**Streszczenie.** Cel: W pracy dokonano oceny przyczyn ewakuacji medycznych żołnierzy Polskich Kontyngentów Wojskowych (PKW) pełniących służbę na Bałkanach, Bliskim Wschodzie oraz w Afryce Subsaharyjskiej w latach 2006–2013. Materiał i metody: Przeprowadzona analiza retrospektywna została oparta na dokumentacji medycznej 162 żołnierzy PKW stacjonujących w Kosowie, Bośni, Iraku, Libanie, Syrii, Czadzie i Mali, którzy z powodu problemów zdrowotnych zostali poddani repatriacji do Polski przed planowym ukończeniem 6-miesięcznej służby na teatrze działań. Analizę przeprowadzono na podstawie wskaźnika struktury oraz wskaźnika natężenia w przeliczeniu na 1000 osób. Wyniki: Badania wykazały, że najczęstszą przyczyną ewakuacji medycznych we wszystkich trzech regionach świata były urazy niebojowe. Uwagę zwracały również liczne ewakuacje z powodu chorób przewlekłych, nabytych przez żołnierzy przed wyjazdem w rejon operacji. Wnioski: Występowanie problemów zdrowotnych prowadzących do konieczności ewakuowania żołnierzy było związane głównie z urazami doznanymi podczas wykonywania obowiązków służbowych. Istotny wpływ na liczbę ewakuacji medycznych miała zbyt powierzchowna kwalifikacja zdrowotna kandydatów do służby poza granicami państwa.

**Słowa kluczowe:** ewakuacje medyczne, polscy żołnierze, operacje wojskowe

**Abstract.** Aim: The article presents the results of a research study into the reasons for medical evacuations (Medevacs) of soldiers serving in the Polish Military Contingent (PMC) deployed to the Balkans, the Middle East and Sub-Saharan Africa between 2006 and 2013. Material and methods: Authors have conducted a retrospective analysis of medical records collected from 162 PMC soldiers deployed to Kosovo, Bosnia, Iraq, Lebanon, Syria, Chad and Mali who required medical evacuation out of the theater of operations before the scheduled termination of their 6-month duty. The analysis was carried out on the basis of structure and intensity rate per 1,000 persons. Results: The research study demonstrated that the majority of medical evacuations from all three areas of the world were due to non-battle injuries. A substantial number of medical evacuations were due to chronic diseases developed prior to deployment. Conclusions: The most common health problems leading to evacuations of the military personnel were non-battle injuries suffered while carrying out professional duties. Carelessly performed pre-deployment health assessment was essential factor which has influenced the number of Medevacs.

**Key words:** medical evacuations, Polish soldiers, military operations

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## Introduction

The Polish Armed Forces have been participating in international peacekeeping and stabilization operations for the last 60 years, mainly in Europe, Asia and Africa. Polish Military Contingents have been engaged in the NATO-led military operation in Kosovo in the Balkans (KFOR, *Kosovo Force*) as well as in Bosnia and Herzegovina (EUFOR, *European Union Force*). So far, Poland has made the greatest military contribution to support the mission in Afghanistan. Polish troops are to be withdrawn from Afghanistan by the end of 2014. Polish soldiers were also involved in military operations carried out in the Middle East – they participated in a stabilization mission in Iraq until 2008 as well as in the UN-led operations in Lebanon and Syria until 2009. Over the last several years, Polish Military Contingents have also supported military operations in Sub-Saharan Africa: in Chad (2008–2009) and Mali (since 2013) [1,2]. The main tasks of Polish personnel deployed to the Balkans involved overseeing the implementation of a peace treaty, preventing escalation of ethnic conflicts, protecting local government, seizing control of illegal arms caches, protecting humanitarian aid convoys [3]. Poland has made a significant contribution to support international forces fighting in Iraq (the Middle East), where Polish Military Contingent was deployed between 2003 and 2008. The PMC personnel were involved in supervising the restoration of law and order in the Polish area of responsibility, training the Iraqi army and police, providing humanitarian assistance within available resources, rebuilding schools, medical treatment facilities, roads and bridges [4]. Polish Armed Forces have also been involved in the UN-led peacekeeping operations carried out in Southern Lebanon and the Golan Heights (Syria), where they have executed logistical and engineering tasks (organization of transport, construction of bridges, mine clearing) and provided humanitarian assistance [5]. In Africa, Polish soldiers were mainly responsible for maintaining stability in their area of responsibility as well as protecting and ensuring travel safety of NGO workers who were providing humanitarian aid to refugees and local people [6]. A small Polish contingent has also been involved in a recently launched military operation in Mali, where they are executing a variety of logistical tasks. Personnel undertaking military duties or fulfilling mandated tasks in areas characterized by harsh environmental conditions are at higher risk for serious diseases or injuries. Hot climatic conditions, poor standards of sanitation as well as ongoing hostilities result in the increased prevalence of injuries and diseases among military personnel. Soldiers requiring medical assistance in an area of operations can be treated both on an in-patient or an out-patient basis. Some of the soldiers, however, are unable to continue military service in operational conditions and,

therefore, should be medically evacuated out of the theater to their home country.

The aim of this article was to analyze the causes for medical evacuations in the population of soldiers serving in the Polish Military Contingents deployed to the Balkans, the Middle East and Sub-Saharan Africa.

## Material and methods

The retrospective analysis was conducted on the basis of medical records collected from 162 soldiers of the Polish Military Contingents deployed to Kosovo, Bosnia, Iraq, Lebanon, Syria, Chad and Mali, who were medically evacuated out of the theaters of operations before the scheduled termination of their 6-month contract between 2006 and 2013. The analysis was carried out on the basis of structure and intensity rate per 1,000 persons. 17 621 Polish soldiers were relocated to the Balkans, the Middle East and to Sub-Saharan Africa in the given period. The study population was of an accidental composition (no selection). The data, which have been collected, were then presented in the form of figures and tables. The most common health problems were analyzed in line with the ICD-10 classification: infectious diseases, psychiatric disorders, neurological, cardiovascular, respiratory, gastrointestinal, skin, musculoskeletal, urogenital diseases, and injuries (battle and non-battle). Detailed diagnoses of particular disease entities were analyzed in compliance with the same classification. The basis for calculating the intensity rate was the number of hospital admissions according to diagnosed diseases and injuries as a numerator, and the total number of soldiers of the examined population in the analyzed period used as a denominator, multiplied by the coefficient  $C = 10^k$  ( $k = 0, 1, 2, 3, \dots$ , in the statistical analysis  $k = 3$ ). The intensity rate was used to calculate the incidence of diseases and injuries per 1,000 persons in the study population. STATISTICA PL software was used to calculate the final scores.

## Results

Of 17 621 soldiers serving in the Polish Military Contingents deployed to the Balkans, the Middle East and Sub-Saharan Africa in the period from 2006 to 2013, 162 were evacuated for medical reasons (9.2 evacuations per 1000 soldiers) (table).

## The Balkans

Of 5,268 Polish soldiers who participated in the EU-led military operations KFOR (Kosovo) and EUFOR (Bosnia and Herzegovina) between 2006 and 2013 (table), 46 were medically evacuated out of the operational areas before

**Table. Medical evacuations of the soldiers serving in the Polish Military Contingents deployed to the Balkans, the Middle East and Sub-Saharan Africa between 2006 and 2013 (n=162)**

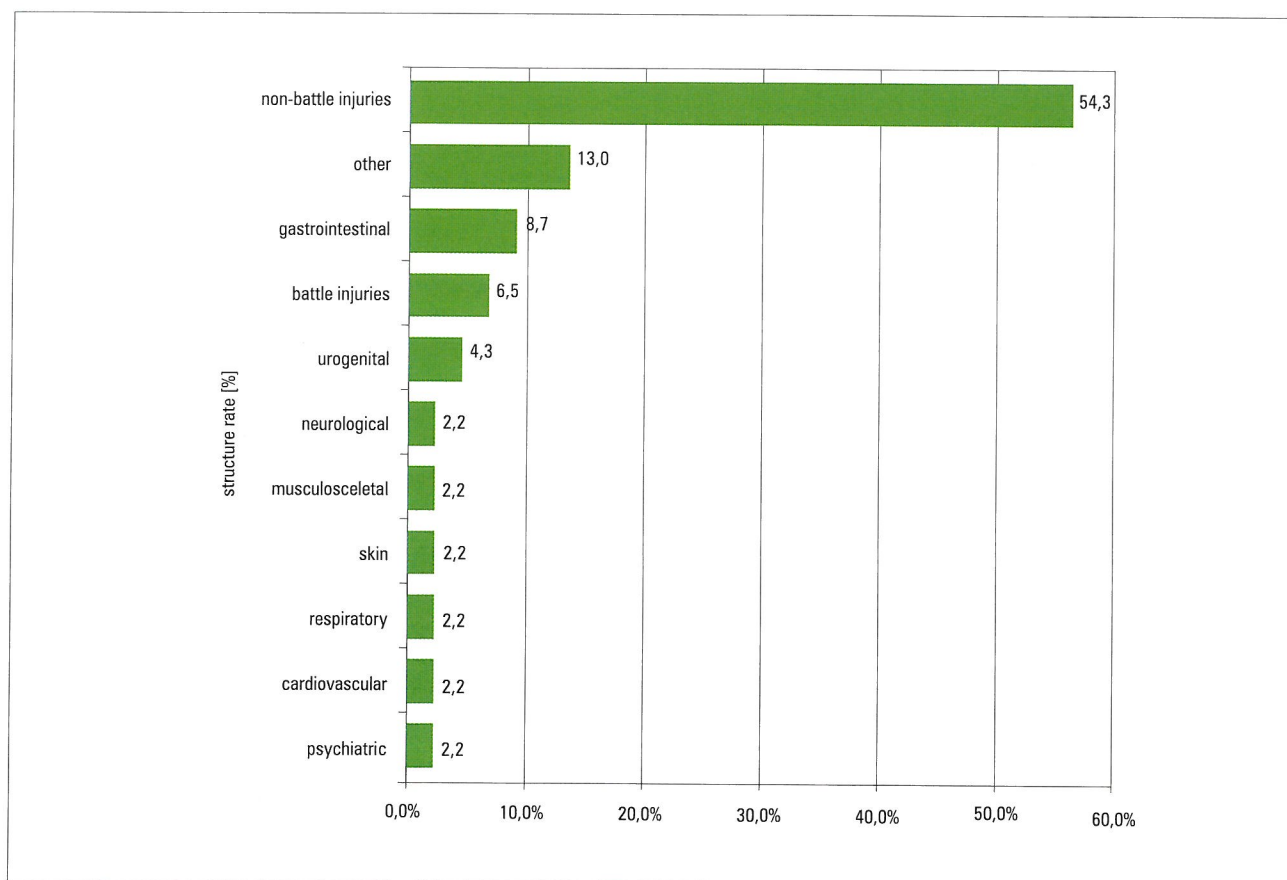
Polish Military Contingent	period	number of soldiers	number of evacuations	intensity rate per 1000 soldiers
<b>Balkans</b>				
KFOR	2006–2013	3,792	27	7.1
EUFOR	2006–2009	1,476	19	12.9
<b>Middle East</b>				
Iraq	2006–2008	5,395	71	13.2
UNIFIL	2006–2009	3,500	15	4.3
UNDOF	2006–2009	2,562	16	6.2
<b>Sub-Saharan Africa</b>				
Chad	2008–2009	855	13	15.2
Mali	2013–	41	1	24.4
TOTAL	2006–2013	17,621	162	9.2

EUFOR – Bosnia and Herzegovina, KFOR – Kosovo, UNIFIL – Lebanon, UNDOF – Golan Heights

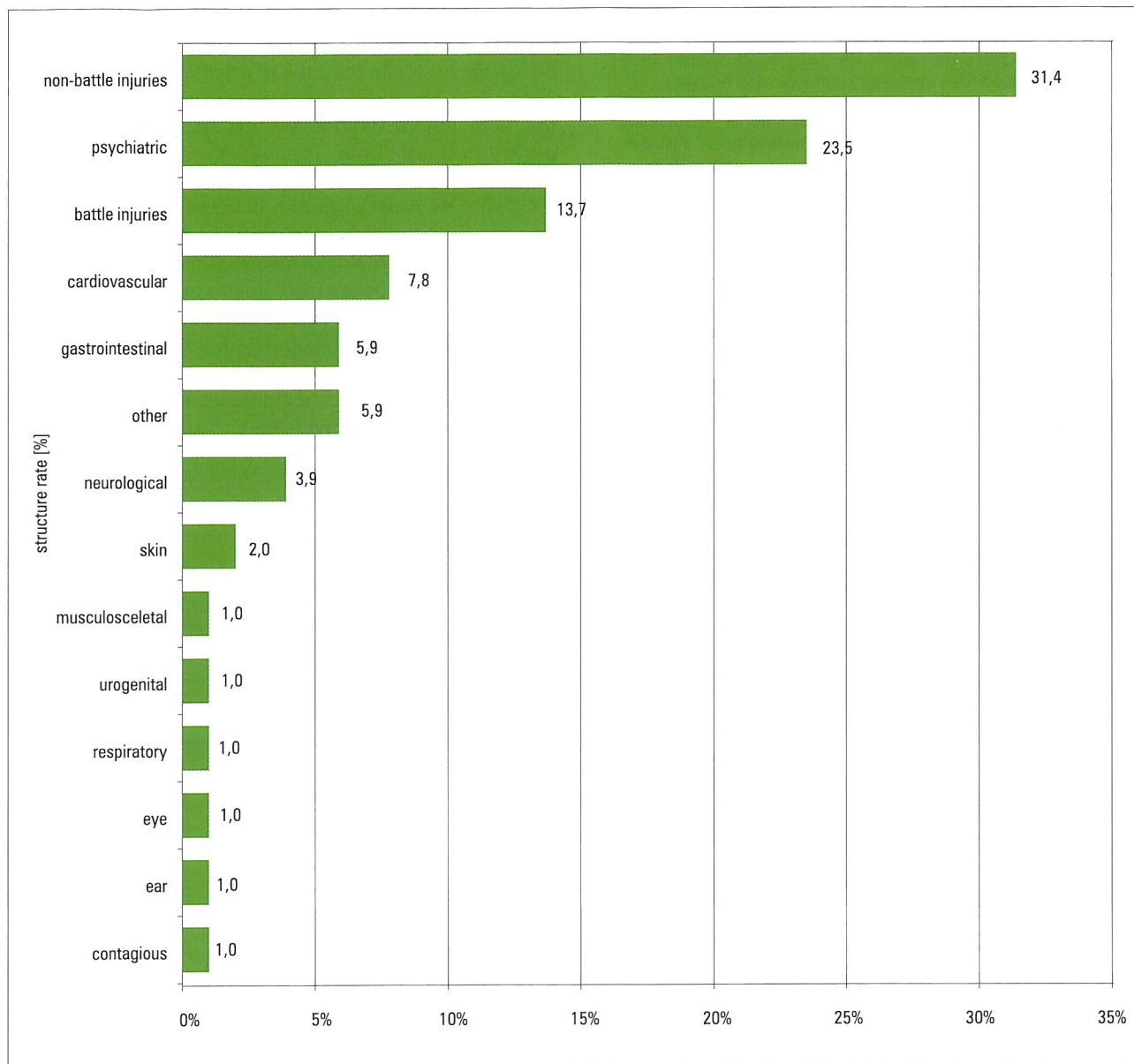
the scheduled termination of their 6-month contract (8.7 cases per 1,000 soldiers). The majority of the evacuated soldiers were in the rank of private (43.5%) aged 25–30 (43.5%). Figure 1 presents the structure of the causes for medical evacuations among the PMC soldiers deployed to the Balkans. The leading health problems in the population of Polish soldiers were non-battle injuries (54.3%). The most common disease entities reported among the evacuated soldiers were bone fractures (14 cases) and joint sprains (8 cases). A number of the evacuated soldiers suffered from health problems for which they should not have been qualified for military service overseas (diabetes, discopathy, peptic ulcer, urolithiasis). The most spectacular example of a carelessly performed pre-deployment health assessment was medical evacuation of a soldier with advanced dental decay who required multiple (9) teeth extraction.

### The Middle East

Of 11,547 Polish soldiers taking part in military operations carried out in the Middle East (Operation *Iraqi Freedom*, the UN-led mission in Lebanon – UNIFIL and in Golan



**Figure 1.** Causes for medical evacuations among the PMC soldiers deployed to the Balkans between 2006 and 2013 (n=46)



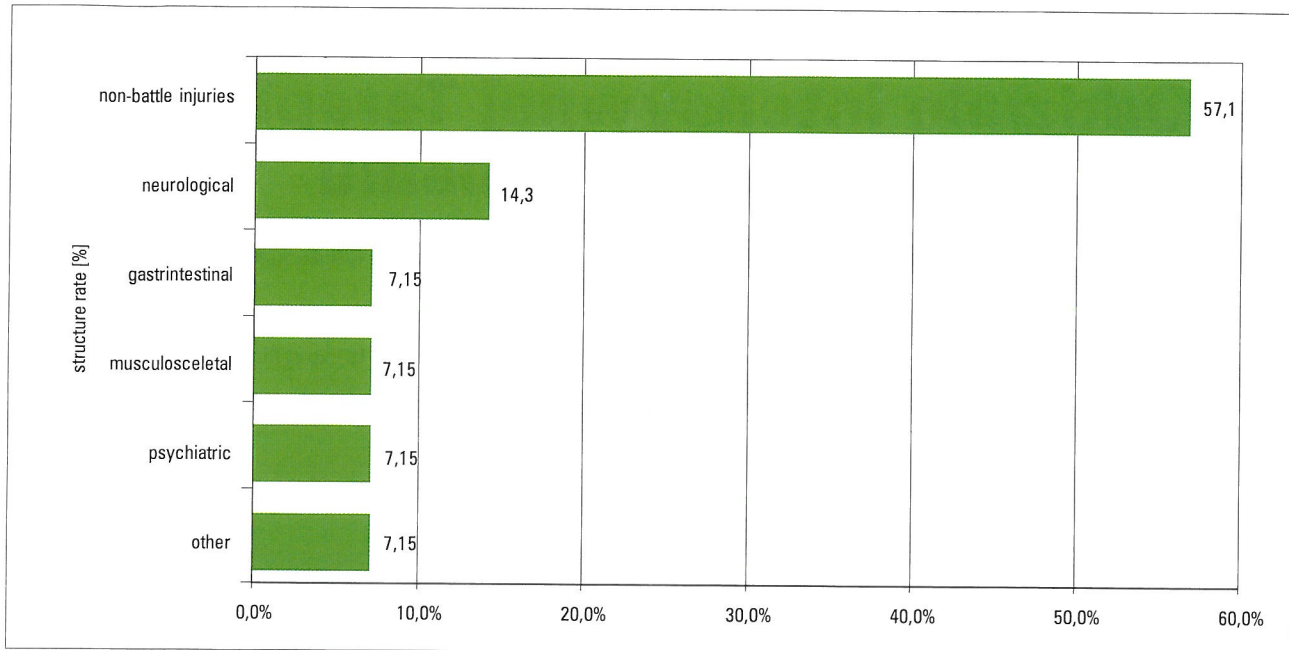
**Figure 2.** Causes for medical evacuations among the PMC soldiers deployed to the Middle East between 2006 and 2009 (n=102)

Heights – UNDOF) between 2006 and 2013 (table), 102 were medically evacuated (8.8 cases per 1,000 soldiers). The majority of the evacuated soldiers were in the rank of private (30.4%) aged 31–35 (35.3%). Figure 2 presents the structure of the causes for medical evacuations among the PMC soldiers deployed to the Middle East. The dominating health problems reported during the given period were non-battle injuries (31.4%), psychiatric disorders (23.5%) and battle injuries (13.7%). The most common disease entities among the evacuated soldiers were psychiatric disorders (21 cases: acute stress disorder, adjustment disorder, anxiety/depressive neurosis), bone fractures (20 cases); joint sprains (8 cases), shrapnel or

gunshot wounds (7 cases). All of the reported battle injuries and the majority of psychiatric disorders were suffered by soldiers relocated to Iraq. Some of the evacuated soldiers suffered from health problems because of which they should not have been qualified for military service overseas (ischaemic heart disease, neurosis).

### Sub-Saharan Africa

Of 896 Polish soldiers participating in military operations conducted in Sub-Saharan Africa (Chad and Mali) between 2008 and 2013 (table), 14 were medically evacuated out of the operational zone to Poland (15.5 cases per



**Figure 3.** Causes for medical evacuations among PMC soldiers deployed to Sub-Saharan Africa between 2008–2013 (n=14)

1000 soldiers). The majority of the evacuated soldiers were in the rank of NCO (50.0%), aged 25–30 (57.1%). The structure of the causes for medical evacuations among the PMC personnel deployed to Sub-Saharan Africa is presented in Figure 3. Non-battle injuries were the leading health problems reported among Polish soldiers (57.1%). The most common disease entities among the medically evacuated soldiers were joint sprains (4 cases) and bone fractures (3 cases).

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## Conclusions

The majority of medical evacuations from all three theaters, i.e. the Balkans, the Middle East and Sub-Saharan Africa were due to non-battle injuries, the most frequently suffered while soldiers were carrying out their professional duties. A substantial number of medical evacuations were due to chronic diseases developed prior to deployment into the theater of operations overseas. A carelessly performed pre-deployment health assessment was an essential factor which has influenced the number of evacuations out of the areas of operations.

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