

PERSONAL EXPERIENCE

Child casualties in a Croatian community during the 1991-2 war

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From the outbreak of war in Croatia in the spring of 1991 until March 1992,¹ the Slavonski Brod Hospital turned into the largest rear hospital in Slavonia. It sustained a constant flow of patients – exiles and wounded – coming from the wartorn areas of eastern Slavonia. Running away in panic from the war zones, many parents left their children in the hospital wards, hoping to find safety and protection for them. During the 13 months of war, the general and air raid alert lasted continuously for six months. The sirens announced a general alert 1147 times and an air raid 365 times. The city and the nearby villages were hit with 11 651 different types of artillery shells. The Yugoslav Federal Army aircraft dropped 130 heavy bombs and numerous cluster bombs. The populated areas were under constant machine gun fire and rockets. The city was particularly heavily damaged by 14 ground-to-ground missiles ('Luna' type with a 500 kg warhead).²

In the autumn of 1991, at the time of the great wave of exiles from Vukovar, Ilok, and Vinkovci and the rest of eastern Slavonia,³⁻⁶ the community of Slavonski Brod accommodated many of them, thus changing its population structure and epidemiological picture.

Reception and medical examinations of exiled children were carried out by medical teams of a child health care service established especially for the purpose. A large scale migration in the late autumn and accommodation of a large number of people and children required monitoring and getting a better insight into the epidemiological situation, with special respect to children. Counter epidemic measures and medical checkups of the remaining resident children were therefore intensified.

With the outbreak of war in Bosnia and Herzegovina in March 1992, the hospital in Slavonski Brod was abruptly transformed into a front line hospital. When the first bomb was dropped on the hospital, 600 ambulatory patients had to be discharged in one day, and the remaining patients were transferred to sheltered basements. In the following months, until November 1992, all hospital activities continued in these basements under constant artillery fire.

The hospital operated by night when the intensity of the enemy's activity slackened. The aim of this article is to show how child care was organised under such circumstances and the problems encountered in every day work.

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Figure 1 North east Croatia (Slavonia) with Slavonski Brod and important neighbouring towns. The Sava river represents the border with Bosnia and Herzegovina. The area was attacked from the east (1991) after the Yugoslav Federal Army had destroyed Vukovar, reaching the outskirts of Osijek and Vinkovci. During 1992, Slavonski Brod and the respective area came under artillery fire from the south bank of the Sava. In March 1992, Serbian forces defeated Muslims and Croats of Northern Bosnia and conquered the town of Bosanski Brod.

Organisation of child care

The community of Slavonski Brod is situated in the eastern part of Croatia, on the bank of the Sava river, which makes a 70 km long southern border with Bosnia and Herzegovina (fig 1). There are 113 000 inhabitants in an area of 1000 square kilometres, with an average population density of 106 inhabitants per square kilometre and a birth rate of 16/1000. About one third of the inhabitants is made up of 9500 preschool and 19 000 schoolchildren up to 18 years of age.

During the war, the number of beds in the hospital's paediatric ward decreased from 80 to 17 and only three incubators were left. Despite these shortcomings, all wounded children were transferred to the ward after surgical management in order to take the burden off the surgical wards and provide better care for the children.

As 69% of the population had been evacuated from the city, particularly children, dispensaries were transferred to the villages out of reach of enemy artillery or to those of minor strategic interest (fig 1). Medical work was

Table 1 Changes due to the war in the paediatric ward, Slavonski Brod General Hospital

	Before the war	During the war	No (%) difference
Medical personnel			
Physicians	15	14	-1 (-7.1)
Nurses (college)	6	5	-1 (-16.7)
Nurses (secondary school)	52	42	-10 (-19.2)
No of children's beds	82	20	-62 (-75)
No of patients	1950	392	-858 (-68)

intensified because of the increased number of displaced persons and refugees, and prevention of children's infectious diseases. A large scale influx of children from Bosnia called for monitoring and control of the epidemiological situation.

Because of the proximity of battlefields of eastern Slavonia,^{13–9} the surgical wards bore the heaviest burden. In order to keep them functioning, more than a third of the child health care workers were assisting in the surgical wards for many months. Some worked in the blood transfusion unit where the increase of volunteer blood donors could not be managed without help.

Results

The outbreak of war in this region determined the introduction of indispensable changes in the organisation of work. During the war, approximately 16% of the child health care personnel, mostly nurses, left their jobs (table 1). After the transfer into the basements, the paediatric ward (80 beds) had to be reduced by 75%, so as to provide treatment for 68% fewer patients than before the war (fig 2). Only children whose lives were at risk and those who could not be transported were hospitalised. The number of hospitalised (mainly wounded and prematurely born children) was reduced while the mortality rate rose dramatically (fig 2). While the death rate in the ward was 0.76% in prewar 1990, it rose to 4.8% in 1992.

Towards the end of 1992, when the war reached its climax, the number of hospitalised children fell significantly and the death rate was at its highest (fig 2). The number of prematurely born children with a low postnatal weight reached 86 in 1992, compared with 58 in 1990. In the same year, 35 patients died in the ward, twice as many as in 1990 (fig 2). Out of 26 dead newborns (prematurely born and those with small postnatal weight), six died the

Table 2 Children casualties in the Croatian community of Slavonski Brod during the 1991/1992 war; data on age and sex

Age (years)	Casualty	Boys	Girls	Total
<6	Killed	6	3	9
	Wounded	13	10	23
6–10	Killed	6	6	12
	Wounded	17	13	30
>10	Killed	20*	5†	25
	Wounded	132*	30†	162
Total	Killed	32	14†	46
	Wounded	162	53†	215

*Significantly different in comparison with the two younger groups. †Significantly different in comparison with boys of the same age.

same day, 13 within the first week, and the remaining seven by the end of the first month. The causes of death were fetus immaturity (12 infants), sepsis (seven infants), and ventilatory obstruction (seven infants). An increased number of dead children with congenital anomalies (three with heart and three with digestive system anomalies) was also noted.

During the whole war period, 215 children were wounded and 46 killed. At the time of massive migrations from the east and south, when most of the children had already been evacuated, more displaced and refugee children in this community became victims of the war. Among the wounded children, 89 (41%) were from the community of Slavonski Brod (25 from the town and four from the villages), 29 (13%) were displaced children from other (eastern) parts of Croatia, and 97 (45%) were from (mostly northern) Bosnia. Among the 46 killed, 29 (63%) were from Slavonski Brod, five (11%) displaced Croatian children, and 12 (26%) Bosnian refugees.

The data on age and sex of child casualties (table 2) reveal a significantly higher casualty toll among boys than girls, especially among the boys over 10 years of age. Out of the total of 46 killed children, 32 (70%) were boys, and among 215 wounded 162 (75%) were boys ($p < 0.05$, χ^2 test). Among 32 killed boys, 20 (62%) were over 10 years of age, and among 162 wounded boys, 132 (81%) were over 10 years of age (table 2) ($p < 0.05$ for both comparisons, χ^2 test). Similarly, out of 25 killed children older than 10, 20 (80%) were boys ($p < 0.01$ in comparison with the girls).

Discussion

In natural disasters or war, child health care should be conducted in the same way as in peace. In this war, we could not do this because of frequent transfers of our paediatric institutions, massive displacement of children of the region towards the safer parts of Croatia, and the influx of a large number of displaced and refugee children.

The number of wounded and killed children from the area amounted to about one third of the total number of child war casualties in Croatia, indicating the intensity and duration of aggression. Moreover, relative to the enemy lines, the geographic position of the area was very unfavourable (fig 1). Reports from other parts of Croatia on the high number of child

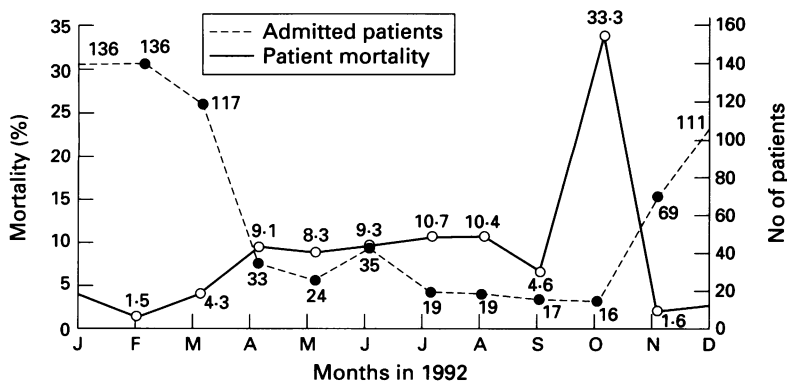


Figure 2 Number of admitted patients and patient mortality at the paediatric ward of the Slavonski Brod General Hospital during 1992.

victims suggest that it is difficult to take adequate professionally organised and timely precautions for the protection of children in war.³⁻¹³ The data presented in table 2 clearly show that boys suffered many more casualties than girls, especially boys over 10 years of age. The possible explanation for this is that boys, especially older ones, are less efficiently controlled with respect to their behaviour. It was difficult to keep them in shelters and prevent them from going out to play and see what was happening in the town. One should remember that the shelling of the area lasted for some 13 months, that many children had one or both parents on the battlefield, and that refugee and displaced children were often without parents, alone, or with grandparent(s) only. Chaotic developments in the area (raids, casualties, destruction, uncontrolled flow of refugees and displaced persons, passing soldiers, and arms) and very poor shelters (flat countryside near the river did not allow building of safe cellars) contributed to inadequate control of children and their desire to get out of shelters and play in the fresh air.

For the most part, paediatricians were not asked to join and participate in the general organisation of care for the children residing in the city and community. Exclusion of paediatric workers from regularly established reception committees for displaced children and refugees particularly affected the health of those children. This was especially the case with the refugees from Bosnia who had entered Croatia illegally by crossing the Sava

river (fig 1). Many of them went westward and a few arrived with great delay at the hospital's paediatric ward in a severe state of health.

In conclusion, our experience has shown that wartime child health care should not be organised spontaneously. It should be planned in advance and professionally organised, as it is a question of preservation and protection of the most precious part of the nation.

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