

The hidden toll of war: long-term health risks at Europe's doorstep

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Dear Editor,

Armed conflicts unfolding along and near Europe's borders have generated an extraordinary humanitarian response and a justifiable focus on acute trauma care. Yet the legacy of these conflicts will be written just as much in chronic, indirect, and system-level health consequences as in battlefield injuries. We argue that European health systems should anticipate an impending wave of long-tail morbidity spanning malnutrition, infectious disease, respiratory illness from environmental exposures, destabilization of non-communicable diseases (NCDs), mental-health disorders, and antimicrobial resistance (AMR).¹⁻³ Our purpose here is to outline the principal risk pathways and propose concrete, near-term priorities for preparedness and early recovery, tailored to the European context.

Even when hostilities abate, the health effects of war persist for years. Disrupted food supply chains and purchasing power, damaged water and sanitation (WASH) infrastructure, population displacement, and health-workforce attrition predict increases in under-nutrition and micronutrient deficiencies, especially among children, pregnant people, and the elderly. Prolonged delays and interruptions in food delivery are likely to precipitate malnutrition.^{1,4,5} The underlying causal chain is sound and widely observed across conflicts: protracted shortages and high prices diminish dietary quality; infection-malnutrition cycles develop; and the consequences for immune function, wound healing, and recovery from acute illnesses are profound.

The collapse of buildings and the use of munitions create persistent airborne hazards.^{6,7} Dusts of varied composition, such as silicates, metals, combustion by-products, that drive a spectrum of respiratory outcomes, from upper-airway irritation to chronic bronchitis and pneumoconiosis-like syndromes, particularly in those forced to live or work amid rubble and reconstruction. This warrants specific planning for post-conflict respiratory clinics, spirometric surveillance, and exposure-mitigation guidelines for cleanup crews, volunteers, and returnees. The time window is measured in years, not months, and respiratory services should therefore be integrated into early recovery budgets rather than relegated to emergency phases alone.

Conflicts reshape pathogen transmission. Crowding, intermittent water supply, poor sanitation, and interrupted vaccination programs raise risks for enteric infections and vaccine-preventable diseases.^{2,8-12} Simultaneously, constrained diagnostics, empiric broad-spectrum antibiotic use, and fragmented steward-

ship infrastructure can accelerate AMR selection and spread.³ The theme is actual and urgent: without deliberate stewardship adapted to resource-limited settings, AMR will worsen and complicate any surge of post-conflict infections. That, in turn, increases length of stay, cost, and mortality once patients reach European hospitals, a pressure already familiar to acute care units managing older, frailer patients with resistant infections.

A major yet underappreciated consequence of war is the destabilization of chronic illnesses: heart failure, chronic obstructive pulmonary disease (COPD) and asthma, diabetes, chronic kidney disease, and severe mental illness. Medication interruptions, loss of records, missed follow-up, and dietary change push-controlled disease into decompensation. Continuity of chronic care is a life-saving, not merely quality-of-life, priority in post-conflict planning. For European systems likely to receive displaced patients or repatriated citizens, that means investing in rapid medication reconciliation, flexible prescribing to bridge formulary gaps, and protocols to fast-track high-risk NCD patients (*e.g.*, insulin-dependent diabetes, advanced heart failure) into stabilization pathways upon arrival or return.

The psychological toll of conflict, post-traumatic stress disorder (PTSD), depression, anxiety, and substance-use comorbidities falls on civilians, combatants, humanitarian staff, and journalists.¹³⁻¹⁵ In our opinion, European health systems should anticipate prolonged demand for evidence-based mental-health and psychosocial support (MHPSS): stepped-care models, trauma-informed primary care, community-based supports for adolescents, and stigma-sensitive outreach to men (who often underutilize services). The crucial point is longitudinal: PTSD and depression often surface after initial resettlement once survival stressors recede. Building surge-capable, culturally competent MHPSS now will reduce downstream social and economic costs.

Certain groups will face disproportionate harm: infants and small children; pregnant and postpartum people; older adults with frailty, cognitive impairment, or multimorbidity; people with disabilities; and those with serious mental illness or substance-use disorders. Our clinical work with frail older inpatients, where functional vulnerability predicts infection risk and resource use, reinforces how conflict-exposed older adults may present to European hospitals: atypically, with non-specific symptoms and rapid functional decline rather than classic febrile syndromes. Preparedness plans should therefore include geriatric-aware triage, rapid functional screening, and pathways

linking acute care with rehabilitative and social services to prevent avoidable institutionalization.

We propose a pragmatic set of near-term priorities for European health systems and their partners. These measures can be embedded in humanitarian corridors, border reception, and municipal health services in regions likely to receive displaced people, as well as in cross-border support to rebuilding health sectors.

- i) Targeted surveillance and early warning. Adopt syndromic surveillance (respiratory, diarrheal, febrile, and rash illnesses) in reception centers and community clinics; integrate point-of-care diagnostics where feasible; create feedback loops to rapidly adjust vaccination and prophylaxis strategies. Surveillance should explicitly include AMR patterns through low-burden sampling and simplified antibiogram reporting to inform empiric therapy.¹⁰⁻¹²
- ii) Catch-up immunization and infection-prevention basics. Prioritize measles-mumps-rubella, polio, diphtheria-tetanus-pertussis, influenza, and pneumococcal catch-up, adapted to age and risk. Pair with WASH and ventilation improvements in shelters and schools; provide hygiene kits and risk communication materials in relevant languages. These are cost-effective, high-impact steps that reduce outbreak risk while broader recovery unfolds.^{2,8,9}
- iii) Continuity of chronic care. Implement accelerated medication reconciliation at entry points; establish emergency formularies aligned with likely pre-war regimens; support rapid referral for unstable heart failure, insulin-dependent diabetes, and advanced COPD/asthma; equip primary care with protocols for re-stabilization and for safe de-escalation of high-risk polypharmacy. Electronic “minimum datasets” for displaced patients, medications, allergies, and key diagnoses can reduce errors when records are fragmentary.¹⁶⁻¹⁸
- iv) Respiratory clinics and exposure mitigation. Create post-conflict respiratory assessment tracks for symptomatic returnees and workers engaged in debris removal; provide spirometry, imaging when indicated, and occupational guidance (mask use, wet methods to suppress dust). Include smoking cessation and vaccination as part of the package.^{6,7}
- v) Workforce and financing for early recovery. Protect and expand the local health workforce through supportive supervision, mental-health support for clinicians, and streamlined hiring of multilingual staff. Ring-fence budgets for recovery-phase priorities (surveillance, chronic-care continuity, MHPSS, stewardship, rehabilitative services) so they are not crowded out by short-term emergency line items.¹³⁻¹⁵

In conclusion, the end of active hostilities will not be the end of conflict-related disease. On current trajectories, European health systems will be asked to absorb prolonged indirect morbidity shaped by disruptions to basic determinants of health, chronic-care interruptions, environmental exposures, and the dynamics of AMR. If we plan now, by building targeted surveillance, securing chronic-care continuity, embedding stewardship, anticipating respiratory and mental-health needs, and protecting the workforce, we can blunt a predictable wave of avoidable mortality and disability. The priority actions we outline are feasible, scalable, and comparatively low-cost relative to late-stage rescue care. What they require is foresight: recognizing that the most consequential health work of war often begins *after* the shooting stops.

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