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# Uchunguzi (Journal WatchMontre de Journal) March 2015

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## Recommended Citation

Wachira, B. (2015). Uchunguzi (Journal WatchMontre de Journal) March 2015. *African Journal of Emergency Medicine*, 5(1), 45-47.

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### Uchunguzi (Journal Watch/*Montre de Journal*)



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Received 12 January 2015; accepted 13 January 2015; available online 28 January 2015

Uchunguzi means investigation in Swahili and provides a summary of some of the most recent international literature as presented in other leading journals, but with an emphasis on what is relevant to our continent.

#### **Ebola: Coming to an EC near you**

The 2014 Ebola outbreak in West Africa is the largest in history. Despite ongoing efforts directed at experimental treatments and vaccine development, current medical management of Ebola viral disease (EVD) is largely limited to supportive therapy, thus making early case identification and immediate implementation of appropriate control measures critical. Given their place on the front lines of patient care, emergency centre (EC) physicians should be knowledgeable about EVD. This article provides up-to-date information required to identify, evaluate, and manage EVD for the EC physician. Transmission of EVD occurs by direct contact through broken skin or mucous membranes or by objects such as needles. Bodily fluids, including saliva, blood, vomit, diarrhoea, and semen, appear to be infectious even from deceased Ebola victims or direct contact with infected animals. Simple physical contact with an infected individual does not appear sufficient for contracting the disease. Ebola infection is characterized by an initial nonspecific viral syndrome that is further complicated by septic shock and disseminated intravascular coagulation (Table 1).

Bleeding manifestations are not always present. Incubation time for humans ranges from 2 to 21 days. Most patients become symptomatic after 8–9 days, and once symptoms are present, the infection is contagious. Malaria is an important alternative diagnosis to consider. Table 2 presents a comparison of EVD and malaria.

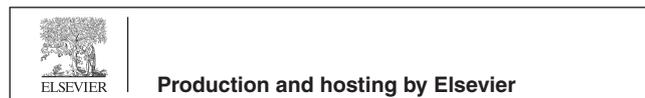
After implementing appropriate isolation precautions and providing early stabilization and supportive care, EC personnel suspecting a case of EVD should immediately consult with local health authorities.

Meyers L, Frawley T, Goss S, Kang C. Ebola virus outbreak 2014: clinical review for emergency physicians. *Ann Emerg Med* 2015;**65**(1):101–108.

#### **Emergency care in Somaliland**

In resource-poor settings, where health systems are frequently stretched to their capacity, access to emergency care is often limited. Triage systems have been proposed as a tool to ensure efficiency and optimal use of emergency resources in such contexts. However, evidence on the practice of emergency care and the implementation of triage systems in such settings, is scarce. In this cross-sectional descriptive study, the authors implemented the South African Triage Scale (SATS) tool in a district referral hospital EC in Somaliland. Their aim was to assess emergency service utilization, the capacity to meet the pre-set indicators of the SATS tool, and outcomes of patients seen in the EC in such a context. The American College of Surgeons Committee on Trauma (ACSCOT) indicators were used as SATS targets for high priority emergency cases (“high acuity” proportion), over triage and under triage (with thresholds of >25%, <50% and <10%, respectively). Out of the 7212 patients attending the EC, red and orange cases represented 6% and 17% of all patients respectively, indicating a “high acuity” proportion of 22.3% (95% CI 21.3%–23.3%). The immediate target time to treat for red cases was exceeded in more than 60% of the cases, and only half of the orange cases received treatment within the target time of 10 min. Patients for whom the target time to treat was not met were at increased risk of death, with a Relative Risk of 2.2 (95% CI 1.4–3.4,) when compared with all patients treated within time,

Peer review under responsibility of African Federation for Emergency Medicine.



<http://dx.doi.org/10.1016/j.afjem.2015.01.003>

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**Table 1** Clinical features of Ebola virus.

Signs and symptoms	Laboratory findings
<i>Early</i>	<i>Haematologic</i>
Fever	Thrombocytopenia (50,000–100,000 per mm <sup>3</sup> range)
Malaise	Leukopenia
Headache	Anaemia
Myalgias	Coagulation abnormalities (elevated prothrombin time and activated partial thromboplastin time, elevated D-dimer level; decreased fibrinogen)
Vomiting	<i>Hepatic</i>
Diarrhoea	Transaminitis (high alanine transaminase to aspartate transaminase ratio)
Abdominal pain	<i>Renal</i>
Conjunctival injection	Elevated creatinine level
Rash	Proteinuria and haematuria
<i>Late</i>	<i>Metabolic</i>
Bleeding	Low calcium level (< 6 mg/dL)
Petechiae	
Mucosal	
From puncture sites	
Haemoptysis	
Melena	
Altered mental status	
Tachypnoea	
Shock	

**Table 2** Comparison of clinical manifestation between Ebola and malaria.

Similarities	Differences
Both present with flulike illness, including fever/chills, headache, malaise, gastrointestinal symptoms, and myalgias	Malaria may present with paroxysms of fever
Incubation period for both diseases varies from several days to weeks	Acute respiratory distress syndrome is more common in complicated malaria than Ebola
Both diseases show laboratory abnormalities including transaminitis, elevated BUN and creatinine levels, coagulopathy, anaemia	Hypoglycaemia is a common finding in malaria
	Malaria is not associated with a maculopapular rash
	Petechiae and mucosal haemorrhages are rarely observed in severe malaria

although the difference was not significant when stratified for SATS score. The overall EC mortality rate (excluding cases who were dead on arrival) was 1.3% (95 cases, 95% CI 1.0%–1.6%). Leading causes of death were cardiovascular diseases (16 cases, 17%), lower respiratory tract infections (13 cases, 14%), and accidental trauma (11 cases, 12%). Hospital admission and mortality rates were correlated with the degree of urgency, as expected; over triage (40%) and under triage (9%) remained under the pre-set thresholds (50% and 10%, respectively). This study clearly demonstrates the need to sort out patients in the EC based on their acuity status even in resource limited settings as this has direct implications on their mortality.

Sunyoto T, Van den Bergh R, Valles P, et al. Providing emergency care and assessing a patient triage system in a referral hospital in Somaliland: a cross-sectional study. *BMC Health Serv Res* 2014;**14**(1):531.

### EC care...complex, effective and dangerous

EC care has been reported to be prone to patient safety incidents (PSIs) for a variety of reasons including a chaotic work environment, high patient acuity, multiple transitions in care, and EC crowding. Some reports have suggested that PSIs in emergency medicine (EM) occur in diagnosis, pharmacotherapy,

procedures, and communication, and that many EC PSIs may be preventable. This observational study conducted over a period of 24 months at a tertiary care adult urban EC identified in total 152 cases (92%) in which PSIs occurred, of which, twelve cases (8%) resulted in patient harm. Of these twelve cases, eleven (92%) involved one or more system failures, and nine (75%) involved a practitioner-based error. Eight of the nine cases of harm with a practitioner-based error (89%) had a concomitant system failure, and only in one case of the twelve (8%) did a practitioner-based error alone lead to patient harm. In ten of the twelve cases (83%) of PSIs resulting in patient harm, multiple failures/errors were determined to have occurred, and multiple failures/errors were determined to have occurred in all three of the most serious cases of resultant harm (permanent harm or death). EC teamwork failures and major cognitive errors occurred in each of the cases of permanent harm or death, and in two of these cases, hospital teamwork failures also occurred. The results of this investigation clearly demonstrate that PSIs occur frequently in the EC and there is a need to develop systems that identify PSIs and contributing factors and collect this information for use in quality improvement processes that ensure patient safety in the EC.

Jepson ZK, Darling CE, Kotkowski KA, et al. Emergency department patient safety incident characterization: an observational analysis of the findings of a standardized peer review process. *BMC Emerg Med* 2014;**14**:20.

## Deliver me from pain

Albert Schweitzer once said, “We must all die. But that I can save a person from days of torture that is what I feel is my great and ever-new privilege. Pain is a more terrible lord of mankind than even death itself”. Pain has frequently been regarded as the fifth vital sign in the EC leading to its inclusion in many EC triage scores. Unrelieved pain remains a global health problem. In the US alone, the costs of pain have previously been estimated to be around US\$100–200 billion a year. Limited facilities for pain treatment, and poor access to drugs for pain relief are thought to be some of the contributing factors for poor pain management in resource limited settings. In this prospective cross-sectional survey performed in a Moroccan EC, the authors evaluated the prevalence of unrelieved acute pain and identified factors associated with unrelieved pain amongst consecutive patients hospitalized in the EC. Acute pain was the chief complaint in 73.4% of the patients included in the study. At the first interview, pain was categorized as intense to severe in 91.1% of cases. The rate of analgesics use was of 78.1%. At discharge, the intensity of pain decreased in 46.9% of cases. One quarter of patients felt on discharge from the EC that their pain had not been relieved. In multivariate analysis, factors associated with insufficient pain management were: accompanied patients (OR = 2.72, 95% CI = 1.28–5.76,  $p = 0.009$ ), pain as chief complaint (OR = 2.32, 95% CI = 1.25–4.31,  $p = 0.007$ ), cephalic site of pain (OR = 6.28, 95% CI = 2.26–17.46,  $p < 0.001$ ), duration of pain before admission more than 72 h (72–168 h (OR = 7.85, 95% CI = 3.13–25.30,  $p = 0.001$ ), and >168 h (OR = 4.55, 95% CI = 1.77–14.90,  $p = 0.02$ )). The finding of a high incidence of relief of pain in this study is corrigible. Comprehensive pain assessment and management are essential to reduce the prevalence and burden of pain, and new strategies are required to support these changes. In providing effective care to the populations served by the EC healthcare workers, we have a great responsibility to relieve pain by all possible appropriate means in a timely, efficient and effective manner.

Louriz M, Belayachi J, Armel B, et al. Factors associated to unrelieved pain in a Moroccan Emergency Department. *Int Arch Med* 2014;7(1):48.

## Who, why and how much

EC overcrowding has become a global phenomenon with many ECs across the world working at full capacity or above capacity. Several studies looking at this have identified several factors that have contributed to this including, an increase in the burden of disease, increasing demand for emergency care, inappropriate use of the EC for “non-emergent” problems etc. South Africa is amongst the countries facing this growing phenomenon with some of their ECs simply not keeping up with the increasing demand due to a limitation in the resources available. In this study from Polokwane-Mankweng Tertiary Hospital Complex EC in South Africa, the author reviewed 250 random patients’ records from a cohort of 14,113 patients seen in the EC during the one year study period. The aim was to determine the EC case load and the factors influencing this case load and its implications on resource utilization by the department. One fifth (20%) of the patients seen were referrals from other health facilities, the rest were self-referrals. Almost half of the patients arrived after-hours (from 18h00 to 6h00). Patients were mainly admitted to the EC due to injuries (25%), and maternal- and cardiovascular conditions (12%). More than 60% of the patients were discharged after receiving treatment which implied that these patients could have been managed at a regional or district level hospital. The combined unit cost was estimated at R731.34 (US\$64) per single emergency care patient excluding the capital costs. With the growing demand for emergency care in resource limited settings, this study’s findings are helpful for the effective planning and appropriation of resources for ECs in these settings.

Mohapi, MC. Evaluation of the casualty department at Polokwane Mankweng Hospital Complex in the Limpopo province. [Online] Wits Institutional Repository on DSpace, 2014. [Cited: January 12, 2015.] <http://hdl.handle.net/10539/15517>.

## Conflict of interest

The author declare no conflict of interest.