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## OTHER MATTERS OF INTEREST

### Developing emergency medical dispatch systems in Africa – Recommendations of the African Federation for Emergency Medicine/International Academies of Emergency Dispatch Working Group



#### *Développement des systèmes de répartition d'urgence médicale en Afrique, selon les recommandations de la Fédération africaine de médecine d'urgence/Académies internationales du Groupe de travail de répartition d'urgence*

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Emergency medical dispatch (EMD) systems are a crucial component of effective Emergency Medical Services (EMS) systems. They provide a means of public access to emergency care information and out-of-hospital emergency care resources and expertise. EMD systems also link various components of EMS, thereby improving efficiency and performance. As EMS systems are rapidly developing across many parts of Africa, EMD systems which are context appropriate are in great need, but are mostly absent despite the wide availability of telecommunications technology.

To facilitate the development of EMD systems appropriate for the African setting, the African Federation for Emergency Medicine (AFEM) and the International Academies of Emergency Dispatch (IAED) convened a working group in November 2014 to provide conceptual, technical, and innovative recommendations for contextually appropriate EMD systems for African settings. It is hoped that these recommendations will augment efficiency, effectiveness, and standardisation within and among African EMD systems, thereby improving health outcomes for sufferers of acute illness or injury.

Les systèmes de Répartition médicale d'urgence (RMU) représentent une composante cruciale des systèmes efficaces d'Aide médicale urgente (SAMU). Ils fournissent un moyen d'accès public à l'information sur les soins d'urgence et aux ressources et expertise en soins d'urgence hors de l'hôpital. Les systèmes de RMU font également le lien entre divers composants de l'AMU, améliorant ainsi l'efficacité et la performance. Alors que les systèmes d'AMU se développent rapidement dans de nombreuses régions de l'Afrique, il existe un grand besoin de systèmes de RMU adaptés au contexte, souvent absents malgré la grande disponibilité des technologies de télécommunications.

Pour faciliter le développement de systèmes de RMU appropriés au contexte africain, la Fédération africaine de médecine d'urgence (AFEM, African Federation for Emergency Medicine) et les Académies internationales de répartition d'urgence (IAED, International Academies of Emergency Dispatch) ont convoqué un groupe de travail en novembre 2014 pour fournir des recommandations conceptuelles, techniques et innovantes aux systèmes de RMU adaptés au contexte africain. Il est à espérer que ces recommandations augmenteront l'efficacité, l'efficacité et la normalisation au sein et entre les systèmes de RMU africains, améliorant ainsi les résultats en termes de santé pour les personnes souffrant de maladie aiguë ou de blessures.

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#### African relevance

- Emergency Medical Dispatch (EMD) systems are a critical component of, and point of public access into, emergency care systems.

- EMD can and should be carefully integrated into African settings so that they are locally-appropriate, sustainable, efficacious, and innovative.
- EMD systems can be economically and efficiently configured to utilise centralisation of call-taking and decentralisation of dispatching.
- Call-taking and call-processing are best accomplished when rehearsed, pre-determined, standardised, algorithm-based processes are used.

**Introduction**

Africa shares a disproportionately large burden of the world’s morbidity and mortality, a significant proportion of which is attributed to acute illnesses and injuries.<sup>1-3</sup> The Disease Control Priorities project estimates that up to 45% of mortality and 36% of disability could be averted by effective emergency care systems.<sup>4</sup> Such systems function on a continuum, in which access and care occur in an uninterrupted, coordinated sequence (Fig. 1).<sup>4-6</sup>

The first four phases occur in the out-of-hospital setting.<sup>5</sup> Improved health outcomes may be achieved by strengthening each individual phase of care, and seamlessly integrating all phases.<sup>1,6,7</sup>

Most high income settings have Emergency Medical Services (EMS) systems in place; this is not the case in Africa, where such formalised systems are relatively rare and comparatively immature in their development.<sup>8,9</sup> Emergency medical dispatch (EMD) systems are a foundational, key component of EMS systems and play a critical role in strengthening the first four phases of the emergency care continuum.<sup>6</sup> EMD systems can provide populations with continuous, timely, and reliable telephone-based access to emergency care and information. Additionally, EMD systems can be innovatively configured to provide efficient, economical means of public health assistance, such as telephone advice for non-acute conditions and information on local healthcare resources.<sup>10</sup>

According to the International Telecommunication Union, there are ten times as many cellular phones as landlines in sub-Saharan Africa, and 60 percent of the population have mobile phone coverage, growing at a rate of about 10 percent per year from 2002 to 2007. Given the extensive coverage and increasing penetration of cellular phone technology within Africa,

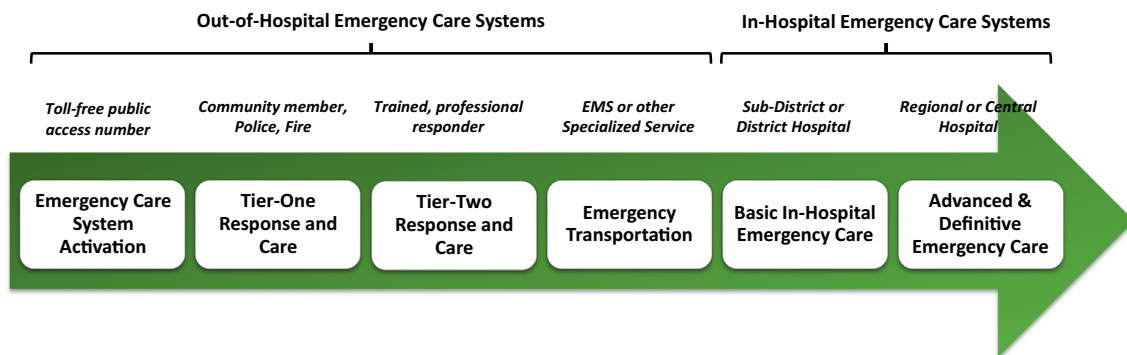
and the existence of telecommunication infrastructure,<sup>11</sup> EMD systems that are well-integrated, sustainable, culturally appropriate, comparatively low-cost, and tailored to the local burden of disease are theoretically implementable.<sup>5</sup> Further, the rapid expansion of technological solutions and the proliferation of ‘cloud’ based services adds a further dimension to the large scale impact that investment in technology could have – not just within a country, but potentially across regions. This may be even more marked in low resource areas where any investment towards greater efficiency and improved resource allocation is accompanied by significant improvements across the service platform.

Despite this significantly beneficial potential, a 2014 survey of African EMS officials and experts indicated that, while most had public access numbers, they did not utilise formalised EMD processes or systems.<sup>12</sup> In response, the African Federation for Emergency Medicine (AFEM) and the International Academies of Emergency Dispatch (IAED), recognising the potential beneficial impact on public health that development of African EMD systems may achieve, convened a joint meeting of individuals with expertise relevant to the development of EMD. The goal of this African EMD working group was to facilitate EMD development which is context-appropriate for the African setting, and had the following objectives:

1. To formulate and document the envisioned purposes, roles, and attributes of African EMD systems.
2. To identify priorities in the management of illness and injury conditions and complaints received by EMD systems in Africa.
3. To describe optional configurations and models of EMD for implementation in African settings.

**Process**

Twenty individuals with expertise in African emergency and trauma care, EMS, and emergency communication participated, constituting the African EMD working group. In addition to the US based IAED personnel, they represented 10 countries: Botswana, Cameroon, Ethiopia, Ghana, Kenya, Malawi, South Africa, Tanzania, Uganda, and Zambia. The two-day meeting was convened during the November 2014 African Conference on Emergency Medicine, in Addis Ababa, Ethiopia.



**Figure 1** The emergency care continuum.

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