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## ADOPTING THE 'CASCADE OF CARE' FRAMEWORK: AN OPPORTUNITY TO CLOSE THE IMPLEMENTATION GAP IN ADDICTION CARE?

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Despite a growing number of evidenced-based addiction treatments, a substantial implementation gap in addiction medicine remains. The 'cascade of care' framework can serve as a tool to identify gaps along the continuum of care and tailor interventions to improve the quality of addiction care and outcomes.

According to recent estimates, there are approximately between 73 and 81 million individuals with alcohol use disorders, and 16–19 million with substance use disorders (SUD) related to illicit drugs globally [1, 2]. These numbers, alongside the numerous direct and indirect adverse health and social consequences arising from untreated SUD, translate into a significant and growing disease and economic burden [1, 3].

Unfortunately, despite the growing availability of evidence-based behavioural and pharmacotherapeutic interventions for the treatment and prevention of SUD, a substantial implementation gap in addiction medicine remains [4, 5]. This results in only a minority of the more than 80 million individuals with substance use disorders world-wide receiving evidence-based treatments. Indeed, it is estimated that only one-sixth of individuals with SUD access treatment each year, with large regional variations, ranging from fewer than 5% in Africa to up to 25% in western Europe and North America [2]. Even these figures are likely to be overestimations, as suggested by recent US data indicating that from the estimated 22.5 million individuals with SUD in the United States, only approximately 12% received treatment in 2014 [6], of whom only a fraction are likely to have received evidence-based treatments matched to disease severity.

Factors underpinning this gap are numerous, and span throughout and beyond the health system, including a historical lack of addiction medicine training in the health-care work-force, traditional restrictions on coverage for addiction treatment, as well as the criminalized and stigmatized nature of substance use that can act as important deterrent of health-care-

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seeking among individuals with SUD [3, 4, 7]. Encouragingly, increasing recognition of SUD as a chronic disease requiring comprehensive continuing care approaches rather than simplistic detoxification strategies have led to the development and scale-up of addiction medicine training programmes, as well as to regulations expanding health-care coverage for SUD in many settings [4, 7-10]. In this context, monitoring the quality of addiction care will be critical to assess the success of these emerging and future efforts towards closing the implementation gap between research evidence and access to evidence-based addiction care.

Despite the essential role of measurement to improve the quality of health-care delivery, the SUD field has lagged behind in this area [7]. Thus, to further these efforts, it might be necessary to draw upon lessons from other fields. For instance, the 'cascade of care' has emerged as a useful tool to monitor system-wide effectiveness and performance across key stages of the continuum of care for certain chronic diseases. The 'cascade of care' was proposed originally as a key metric to assess the quality of HIV care delivery, from HIV diagnosis to access and retention in care and treatment, to viral suppression, the ultimate goal in HIV care to improve survival and reduce HIV transmission [11]. Identification of stages where major gaps occur along the continuum, in turn, can help in the design of targeted interventions to address them. Further, when standardized metrics are used, they can serve to track progress over time, as well as to compare results across subpopulations and settings. Indeed, the cascade framework has been adopted increasingly by national governments and international agencies to track the progress of the HIV response over time [12]. For example, Fig. 1a shows data for a recently estimated US HIV 'cascade of care', which demonstrates shortfalls between current estimates and recently defined targets [13].

The 'cascade of care' framework has been adapted recently to other chronic communicable and non-communicable diseases, including hepatitis C [14] and diabetes [15]. US 'cascades of care' for these diseases have also pointed to major gaps between current care and recommended treatment goals [14, 15]. Existing estimates and a hypothetical cascade of care for SUD in the United States are presented in Fig. 1b, highlighting the lack of available data to populate most of the steps in a recovery-orientated system of care. Understanding the present status of the local epidemic and identification of priority needs is a crucial first step to inform programme planning and evaluate the impact of quality improvement efforts. As such, spearheading the use of the 'cascade of care' framework in addiction care may be a unique opportunity to increase public and political awareness of the public health importance of SUD, advocate for resources and set treatment targets.

Extending the 'cascade of care' framework to addiction care will be not without challenges. Particularly challenging would be the identification and validation of a set of relevant, feasible and simple quality metrics, covering the entire continuum of addiction care, from diagnosis to long-term recovery, as well as whether individuals received evidence-based treatment, and the impact of treatment on individual (and community) outcomes [7]. This will require efforts and consensus to ensure that the proposed set is comprehensive and meaningful, capturing the heterogeneity of individuals and models of care for different SUD, and for different levels of severity. Much as has been applied in HIV and other chronic diseases, a 'cascade of care' for specific SUD and populations would also need to account

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The dramatic rise in the misuse of prescription opioids and associated increases in fatal opioid overdoses in North America and Europe should serve as a reminder on how the historical disengagement of the health-care system in the care of SUD may result in severe unintended population health consequences [16]. Here, the 'cascade of care' has the potential to provide the health-care system with a framework to help tailor interventions for SUD and to evaluate outcomes, providing a basis for accountability and for improving individual and population health outcomes affected directly or indirectly by SUD.

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#### Figure 1.

Cascades of care for HIV and substance use disorders. (a) HIV cascade of care, USA, 2011. (b) Hypothetical substance use disorders cascade of care for US population 12+, 2014. PLHIV = people living with HIV; SUD = substance use disorders