

# EXERCISE IS MEDICINE®

## A FLEXIBLE GLOBAL MODEL FOR LINKING SPORTS MEDICINE TO PRIMARY AND COMMUNITY CARE

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The costs of non-communicable disease (NCD) are significant and growing worldwide, making this a major risk to economic loss<sup>1</sup>. Without adequate prevention and early detection, the costs of NCD will continue to rise as they require expensive treatments and cut productive lives short<sup>2</sup>. Investing in lifestyle medicine can halt the incidence and costs of NCD as it addresses unhealthy lifestyle behaviours that fuel the NCD burden<sup>3</sup>. Physical inactivity, for instance, is a leading NCD risk factor and is responsible for a substantial economic burden worldwide<sup>5</sup>. A reduction in the prevalence of physical inactivity could increase life expectancy<sup>4</sup> and could lead to improved health, as well as productivity cost savings through NCD prevention<sup>5</sup>.

Effectively promoting physical activity requires evidence-based, sustainable

interventions that can be implemented at scale, regularly assessed and embedded within existing systems<sup>6</sup>. Clinic-based physical activity promotion strategies are promising population-wide approaches that can be integrated within existing healthcare systems<sup>7</sup>. These strategies have the potential to improve patient physical activity<sup>8</sup>, promote patient satisfaction within clinical care<sup>9</sup>, reduce the risk of NCD<sup>10,11</sup> and reduce healthcare costs associated with inactivity<sup>5</sup>. Strategies that have been used in clinical settings include provider physical activity prescription<sup>12</sup>, provider physical activity counselling<sup>13</sup> and exercise referral schemes<sup>14</sup>.

While prescription, counselling and referral strategies seem to promote small-to-moderate improvements in patient physical activity, evidence on which

strategy is most effective is not conclusive. However, emerging evidence supports the use of comprehensive strategies that combine prescription, counselling and referral, in particular those linking clinical and community care<sup>7</sup>.

### COMMUNITY CARE

Community care is emerging as a space to extend the reach of health systems into the communities they serve. It is designed to deliver NCD prevention and care programmes via trained health professionals in accessible settings, at a low-cost. Through this value-driven approach, populations with increased risk for NCD can be reached to tackle unhealthy behaviours early on. This can slow, stop or even reverse NCD progression before the need to migrate to a high-risk, more expensive care approach.



For instance, in interventions delivered in clinical and community settings, the cost of making one person physically active has been found to be lower than that of drugs for treating diabetes<sup>15</sup>. Similarly, exercise referral schemes have been found to be more cost-effective than usual care, especially among individuals with pre-existing conditions<sup>16</sup>.

Clinical and community care should be linked to facilitate patient behaviour change, promote sustained behaviour change and lower the cost of NCD management. Linking clinical and community care to promote physical activity can also remove the time restraints and training barriers that prevent providers from offering behaviour change counselling<sup>17</sup>. By linking clinical care with community care, providers can reach individuals who do not regularly seek

primary care<sup>17</sup>. Further, provider counselling and referral strategies that link clinical and community care are feasible and cost-effective strategies for promoting physical activity<sup>15,18</sup>. Because physical activity counselling in healthcare systems is usually not adequately reimbursed, referrals to community care represent a cost-effective strategy to enhance patient counselling<sup>17</sup>.

Numerous referral strategies to link clinical and community care have been explored, though not all strategies seem to work. For example, provider referrals to community programmes that encourage physical activity or exercise have poor patient participation and compliance rates and achieve small effects on physical activity<sup>14</sup>. Some have argued that the effects of community programme referrals are unlikely to be sustained in the long term and

to lead to health benefits<sup>19</sup>. Because referring patients to programmes in the community may not be enough to achieve sustained behaviour change<sup>20</sup>, a collaborative, co-ordinated effort between providers, trained professionals and communities is warranted.

Among collaborative referral strategies, provider advice followed by a referral to physical activity programmes supervised by exercise specialists can increase physical activity, though additional strategies are needed to maintain patient behaviour change<sup>21</sup>. Patient referrals to community health educators who act as liaisons between the clinic and the community have also been explored; behavioural counselling by health educators coupled with patient progress reports sent to providers was found to facilitate patient behaviour change<sup>22</sup>. Referring patients to certified programmes in the community where they receive personal physical activity plans and individual support by certified fitness professionals has been shown to work better than provider advice alone<sup>23</sup>. However, providers are unlikely to refer patients if they lack information about the availability and quality of programmes and/or fitness professionals in the community<sup>23</sup>.

#### CREATING EFFECTIVE CLINIC-COMMUNITY LINKS

Overall, successful physical activity referral strategies require trained providers that advise patients on physical activity, refer them to quality professionals or certified programmes in the community and a referral infrastructure that facilitates this linkage. To achieve this, the following

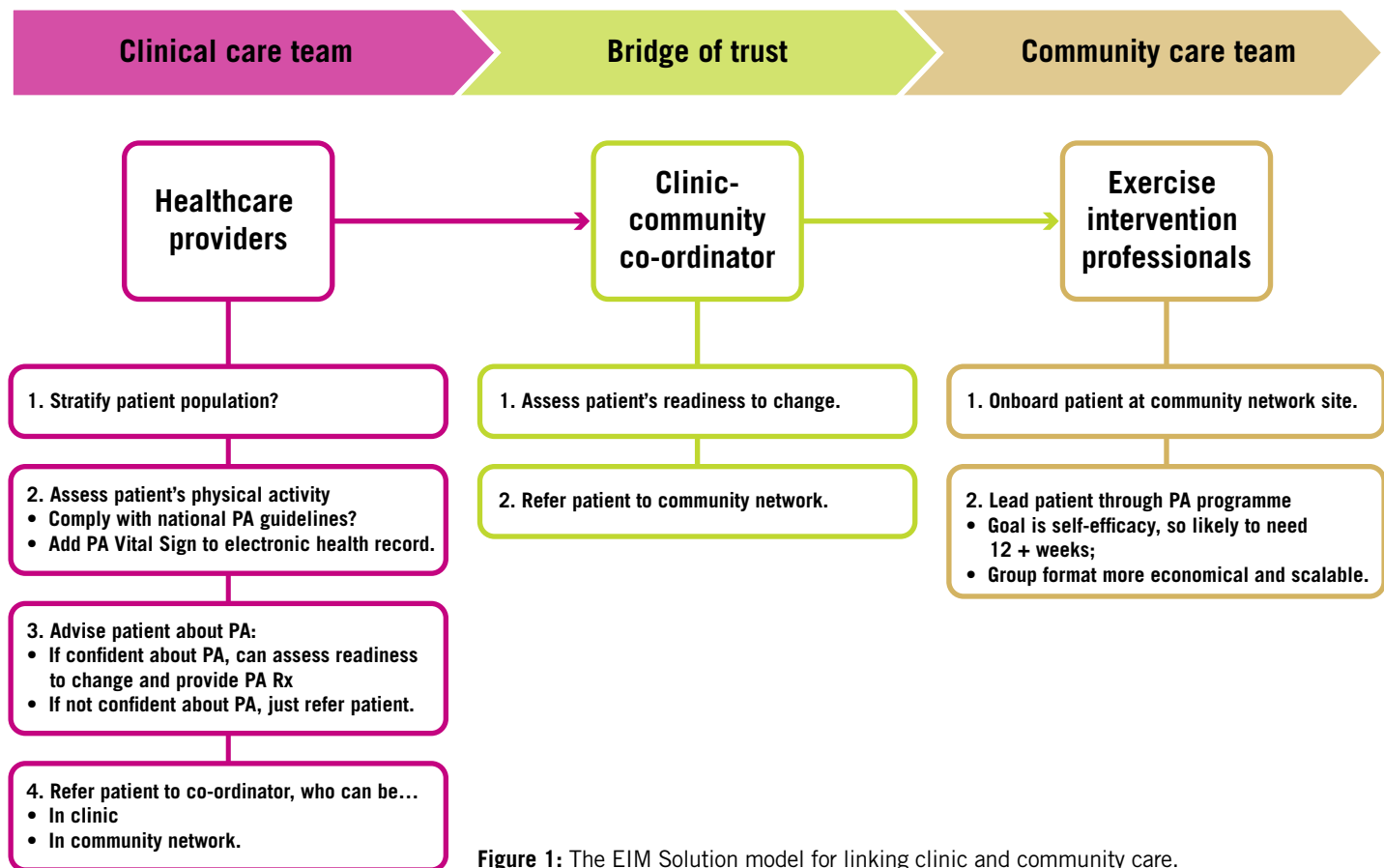


Figure 1: The EIM Solution model for linking clinic and community care.

measures can be implemented:

1. Physical activity assessment should be integrated in standard clinical care to identify inactive patients<sup>24</sup>, which has been shown to improve provider counselling practices and patient metabolic outcomes<sup>25</sup>. Further, providers should be trained in brief physical activity counselling and prescription to facilitate their counselling practices<sup>23</sup>. Based on patient preferences, providers can then refer them to individual counselling with certified professionals, certified physical activity programmes in the community or to self-manage using mobile health technologies (mHealth).
2. A solid infrastructure and communication system should be built to foster successful clinical and community links<sup>26</sup>. Embedding referral protocols within electronic medical records appears to be both feasible and adaptable to the healthcare setting<sup>23</sup>. Clinic-community links can be further facilitated by communication technologies that automate patient

referrals to community counselling, which have been shown to improve provider referral rates and patient behaviour<sup>27</sup>.

3. Quality physical activity programmes and trained professionals available in the community should be identified, catalogued and – if necessary – further developed. Inventorying trusted resources in the community is critical given that providers are unlikely to refer patients due to lack of knowledge about the quality and accessibility of programmes and/or fitness professionals<sup>23</sup>. If trusted programmes or fitness professionals are non-existent, programmes should be developed and personnel trained using standardised protocols<sup>28</sup>. Since exercise referral schemes don't always work<sup>20</sup>, creating a network of trusted community programmes and trained professionals to refer patients to is critical to improve the likelihood of changing patient behaviour. Though using certified professionals and programmes may cost more, they ensure quality of

services provided to patients, promote better patient engagement and offer accessible places with safe spaces.

4. Trusted mHealth resources can be used to promote patient self-management and engagement. Indeed data are emerging in support of mHealth tools for improving patient engagement, health service efficiency and health outcomes. For instance, physical activity electronic monitors have been used to promote self-monitoring, provide feedback and offer physical activity counselling, successfully improving behavioural and clinical outcomes<sup>29,30</sup>. Further, mHealth smartphone applications hold promise for promoting patient engagement and self-management<sup>31</sup>. mHealth tools can also facilitate links between patients, community programmes and providers by offering a common platform to share data and communicate. mHealth resources that tailor advice to patient engagement level, are equipped to respond to health emergencies and that guarantee data privacy and security are preferred<sup>31</sup>.

## Sustainable Community Network

Clinic-community links can benefit both patients and providers and can lessen the burden of addressing physical inactivity on healthcare systems; however, a solid infrastructure, communication system and network of trusted resources are needed to foster successful links.

### THE LAUNCH AND GROWTH OF EXERCISE IS MEDICINE® AS A GLOBAL HEALTH INITIATIVE

The growing body of evidence showing that promoting physical activity can contribute to the prevention and treatment of NCD led to the launch of the Exercise is Medicine® (EIM) initiative in 2007. It was co-launched in the United States by the American College of Sports Medicine (ACSM) and the American Medical Association. By 2010, this grew into a global health initiative as many international medical and scientific societies expressed interest in forming a global EIM collaboration. To date, EIM is present in almost 50 countries on six continents.

Although evidence suggests physical activity prescription and counselling is a promising clinical tool, this approach might not lead to sustainable, clinically significant improvements in health outcomes, unless it is part of a clinical-community link – often referred to as an ‘exercise referral scheme’<sup>14</sup>. This is not surprising considering the limited time that physicians and healthcare providers have available during an office visit. This time barrier limits their capacity to engage in behavioural counselling, thus reducing the likelihood of changing patient’s behaviour, a strong driver of patient health status<sup>32</sup>. To overcome this, patients can be referred to community care health professionals who have more time to assist them in changing their physical activity behaviour, coupled with trusted community intervention programmes. Because exercise referral schemes are not universally effective, the focus of EIM is to discriminate between those elements of an exercise referral scheme that are key to success and those that are not – and that may even be a barrier to success.

Thus, the goals of EIM are to:

1. Establish physical activity as a standard practice in healthcare.



**Figure 2:** The three key elements of a sustainable community network for physical activity interventions.

2. Determine the best model/s for promoting sustainable improvements in patient self-efficacy and physical activity while reducing healthcare costs.
3. Work with health systems to implement, test and refine optimal models.

To achieve these goals, the EIM model needs to be flexible enough to be adaptable for different healthcare policies, regulations and systems in different countries. At the same time, EIM needs to integrate the core elements shown to effect sustained improvements in patient behaviour that can impact health outcomes and decrease healthcare costs. As a shorthand descriptor for these goals, EIM has termed this model ‘The EIM Solution’ (Figure 1).

Based on the best available evidence, the EIM Solution work in the United States has modelled its community care implementation protocol on three key elements:

1. Qualified, trusted community care professionals.
2. Evidence-informed physical activity intervention programmes.
3. A network of accessible clinic and/or community locations (Figure 2).

EIM is currently working with the EIM Global Research and Collaboration Center at Emory University (EIMGRCC) and with health systems to evaluate the effectiveness of this model in the United States. Early pilot work shows that this model is likely to be effective in increasing patient physical activity compliance in United States health systems (unpublished data, Exercise Is Medicine® Global Center, Indianapolis, USA). These preliminary findings need to be confirmed and several programme evaluation projects are currently underway led by the EIMGRCC team, which will be published as the data become available. Though evaluations are still underway, the EIM Solution model is built on the best available evidence, which makes it likely to satisfy the key criteria necessary for success:

- Providing the core elements necessary for improved health outcomes and reduced healthcare costs.
- Delivered within a framework that is flexible enough to be adaptable for different countries and healthcare systems.

So, for example, patients may be referred to a medical fitness centre that is part of the clinic (e.g. Aspetar, Doha) or to a site





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that is part of a community network (e.g. Greenville, USA).

This model has been shared with the nearly 50 EIM National Centers, including the EIM Qatar National Center based at Aspetar – Orthopaedic and Sports Medicine Hospital in Doha. It is anticipated that many EIM National Centers will customise the EIM Solution model for their own country and health system needs. The EIM Global Center housed at ACSM's national headquarters in Indianapolis, United States, serves as a technical assistance global resource centre for EIM National Centers, while the EIMGRCC serves as a programme evaluation and analytics collaboration partner for EIM National Centers. Both EIM and the EIMGRCC are keenly interested in collaborating with any National Center that would like to implement the EIM Solution or to evaluate a customised EIM Solution type of programme. Interested healthcare professionals, researchers, policy makers and healthcare systems are encouraged to get in touch with these centres at [http://exerciseismedicine.org/eim\\_map/](http://exerciseismedicine.org/eim_map/).

EIM Solution's primary target. Sports Medicine societies throughout the world have begun to conclude that their scope of practice extends beyond just that of the athlete and other performance-oriented individuals. It also includes those that view exercise and physical activity as a means of treating and preventing NCD. For example, the British Association of Sports Medicine changed its name to the British Association of Sports and Exercise Medicine in 2000 and became a recognised specialty at both the primary care and consultant level in the United Kingdom in 2005. If the proposed EIM Solution model is widely adopted by health systems, it would lead to an expanded, rather than diminished role for the sports medicine physician. With the anticipated significant increase in population that would benefit from the EIM Solution model, the sports medicine physician could provide the highest level of expertise to this population pool, with the primary care physician attending to more routine physical activity-related cases<sup>32</sup>.

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#### THE ROLE OF SPORTS MEDICINE IN THE EIM SOLUTION MODEL

Finally, it is worth commenting on the relationship between sports medicine and primary care medicine, which is the

*Referencess available at  
[www.aspetar.com/journal](http://www.aspetar.com/journal)*