Health Systems Strengthening to Promote Access to Care for Rheumatic and Musculoskeletal Diseases Globally

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KEYWORDS

• Musculoskeletal health • Rheumatic and musculoskeletal diseases
• Musculoskeletal conditions • Health priorities • Health networks • Burden of disease
• Health systems strengthening • Global • Policy

KEY POINTS

- Global health networks can influence global health priorities.
- There needs to be a shared understanding and framing of the problem.

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- Solutions need to be co-created and strategies align with the polital agenda.
- A framework for a health systems response to burden of musculoskeletal conditions has been developed, which could increase the global priority for action on musculoskeletal health.
- Case studies illustrate how this framework can be used to strengthen health systems to address specific challenges.

Abbreviation	
GBD	Global Burden of Disease
G-MUSC	Global Alliance for musculoskeletal
LMIC	low- and middle-income countries
MSK	Musculoskeletal Health
NCD	noncommunicable disease
SDG	Sustainable Development Goal
YLD	years lived with disability
YLL	years of life lost

INTRODUCTION—WHAT IS THE CHALLENGE?

Musculoskeletal (MSK) health is central to well-being, healthy independent lives and healthy aging.[1] MSK conditions, ranging from inflammatory rheumatic diseases to noninflammatory conditions such as osteoarthritis, back pain or osteoporosis, and fragility fractures, are common in people across all countries and cultures. They are a major cause of disability worldwide, in particular low back pain,[2,3] and they impose a major burden on health and social care. They are a common reason for reduced work productivity and for people to leave the labor market prematurely, resulting in less retirement wealth.[4–6] There are now effective ways of preventing and controlling MSK conditions, but these are not being implemented with equity within and between countries.[7,8] There is a lack of policies and priorities for MSK health and for the prevention and control of MSK conditions.[9–11] This results in a lack of investment in prevention, treatment, rehabilitation, workforce development, and research. Consequently, there is an enormous unmet need and avoidable disability. It is estimated that in 2021 there were 1.7 billion people across the globe who could benefit from interventions for MSK conditions.[12] The MSK community has been working over the last decades to reverse this and make MSK health and science priorities at the national and global level.[1,9,13–17] This means understanding how to influence health policy both at the country level (such as through prioritization within national public health and noncommunicable disease programs and policies) and at the global level (such as through intersections with the targets for the health-related Sustainable Development Goals (SDGs) and flagship programs within Agenda 2030). Here, we consider how the expert community, through lived and learnt experience, can together influence health policy and health priorities, nationally and globally.

Why is this important? A key insight from the last 2 decades is that without prioritization of MSK health through integration within agreed global health goals and targets, such as the Millennium Development Goals and the SDGs, country-level action is deprioritized relative to other conditions for which explicit performance indicators

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are established. On this background and decades of research and programs, there is clarity on *what* is needed, but *how* it can be achieved by health system with the support of the expert community, both from lived and learnt experience remains less clear. In this article, we focus on case studies of how change is being made through a lens of health systems strengthening.

WHAT IS *HEALTH SYSTEMS STRENGTHENING* AND WHY IS IT RELEVANT TO MUSCULOSKELETAL HEALTH?

Health systems strengthening refers to the process of improving a country's health care system to better address health challenges and deliver more effective, equitable, and sustainable health services.[18,19] It involves enhancing the system's capacity to provide quality care, ensuring access for all, and promoting better health outcomes. The clinical community and health service delivery organizations understandably tend to focus on point of care (micro) and organizational (meso) levels of health systems (**Box 1**). However, public health initiatives and care pathways for people with established conditions must be supported by policy and financing models, that is, the health system at the macro level needs to be considered. It is at this macro level that many of the barriers and solutions to sustainably implementing high value care exist as the macro level incorporates the fundamental building blocks of health and social care systems. Indeed, a focus on the macro level is advocated across guidelines and calls for action for most health conditions,[20] evidenced recently by the Political Declaration on the prevention and control of noncommunicable diseases and the promotion of mental health and well-being.[21]

INFLUENCING HEALTH PRIORITIES AND POLICY TO STRENGTHEN HEALTH SYSTEMS

A potentially powerful way of influencing health priorities and policy is through health networks which bring together consumers, clinicians, researchers, policymakers, and industry who share a common concern.[17,22] This can be at the national level to influence national policies or at a global level with the purpose of influencing both global and national policies and priorities. Health networks have various levels of effectiveness and research indicates that they face strategic challenges which include problem definition, positioning and coalition building.[17,22] The key steps identified as being effective in catalyzing action to influence health priorities and policies include[23]

Box 1
Definitions of levels within health systems

Macro: refers to the whole system level, including policy and governance, regulation, financing, workforce, information systems, and strategy to deliver health services, aligned with the building blocks of health systems. Typically, the macro level refers to the system manager, such as the central Department of Health.

Meso: refers to the level of health service delivery organizations, such as hospitals, community health centers, and other service delivery organizations. Strategies developed at the macro level (eg, Models of Care) are operationalized at this service level, eg, through a model of service delivery.

Micro: refers to the level of clinical care (clinical encounters) and access to care by patients. The micro level refers to the activities and decisions of clinicians and patients/consumers.

Adapted from Briggs and colleagues[17]

1. Frame the problem
2. Co-create potential solutions
3. Position strategies aligned with the policy agenda
4. Build alliances to drive forward change.

First, there's a need to frame the problem. The definition of the problem must justify and facilitate collective action. There needs to be a common understanding and narrative of the basics by the stakeholders in the health network. This immediately creates complexity, and to some extent division, within the MSK health and pain communities due to the multiple conditions and disciplines represented by the umbrella term of MSK health. As a community, there is an urgent need unite around an agreed narrative for MSK health. The narrative needs to be clear and understandable for an external audience while intersecting with global health agendas. The narrative needs to distinguish MSK health from other health conditions. Second, we must co-create solutions at the health system (macro) level that are agreeable, feasible and achievable across settings. Formative work in this area has already been undertaken and evaluated.[9,14,15,24,25] Third, we must know what is important to policymakers. It is more achievable to integrate solutions into an existing policy agenda or service delivery framework, especially for more fragile health systems in low and middle-income countries.[17] Finally, we need to build alliances not only within our own community but also look for external partners where there is a case for shared vision and mission—here the intersection between the MSK health and pain care communities is an obvious example. A shared narrative with co-created and policy-relevant solutions needs to then be driven forward by a coalition of the stakeholders who share this mission and vision and can together identify opportunities for impactful, collective action.

The Bone and Joint Decade was launched in 2000 to challenge health priorities and make MSK health and MSK science top priorities for policy makers globally and nationally.[26] It took an evidence-based approach and was launched with a WHO meeting focused on the burden of disease.[27] At that time, the burden of MSK conditions was grossly underestimated, only considering rheumatoid arthritis, osteoarthritis, and a small burden attributable to low back pain. The Global Burden of Disease (GBD) study was broadened, and an expert group identified the full burden of the spectrum of MSK conditions by bringing together the inflammatory rheumatic diseases and noninflammatory causes of pain and disability.[28] This has resulted in these conditions being recognized alongside mental health as the greatest causes of disability globally and in most countries.[2] This is a notable example of the strength and impact achievable when bringing together the wide spectrum of conditions that affect the MSK system and the need for us to adopt a shared narrative.

Framing the Problem

The problem needs to be framed so that it enables the MSK community to adopt a shared mission and vision, justifying and facilitating collective action. It also needs to make a clear case why policymakers should respond to it.

Why is musculoskeletal health important?

MSK health is central to healthy people and healthy populations. It enables physical function—mobility, dexterity, and agility—giving the ability to do the physical tasks of daily life and independence with social and work participation. Enabling physical function also has wider health impacts, such as the prevention and control of other noncommunicable diseases (NCDs). Mobility is a strong predictor of adverse health outcomes and is viewed as a critical component of healthy aging.[29,30] There is a strong argument, therefore, that maintaining good MSK health over the life course is central

to healthy populations, and this is a key component of the WHO Strategy for Healthy Ageing.[1,31,32]

Musculoskeletal health over the life course

MSK health conditions are critical across the entire life course.[33] Over the life course MSK health develops to reach peak structural integrity and function in early adulthood but then declines with aging with loss of fitness, agility, flexibility, muscle strength, muscle mass, bone mass, balance, and coordination.[1] This may lead to sarcopenia and frailty resulting in an increased risk of falls and fragility fractures. People experience a loss of intrinsic capacity which may contribute to the occurrence and impact of other acute and chronic diseases.

MSK health is also impacted by a spectrum of health conditions and injuries that include inflammatory joint diseases, osteoarthritis, neck and back pain, primary and secondary pain syndromes, osteoporosis and fragility fractures, injuries and trauma commonly related to road traffic accidents, occupation, or sports. Irrespective of the disease classification, they share common features of pain, often persistent and loss of physical function. They are commonly present in comorbidity and multimorbidity scenarios involving other NCDs,[34,35] can serve as risk factors for the development of NCDs,[36] and are key determinants of intrinsic capacity central to healthy aging.[37] Among the world's poorest populations, MSK conditions are among the primary drivers of disease burden from NCDs and injuries.[38]

The burden of musculoskeletal conditions

The impact of MSK conditions can be considered at the individual level in terms of symptoms, function, and quality of life. However, the impact of MSK conditions must be considered at the population level to help health systems set effective priorities. The GBD study introduced key metrics—years lived with disability (YLDs), years of life lost (YLLs), and disability-adjusted life years—to enable consistent comparison of health conditions across populations and countries. Within this framework, MSK conditions collectively emerge as a leading cause of disability worldwide, accounting for 16% of global YLDs in 2023,[39] second only to mental health conditions (17% of YLDs). Since 1990, the rate of MSK-related YLDs per 100,000 population has increased by 26%.[40]

MSK conditions also represent the greatest global need for rehabilitation services throughout the life course,[12] and are a significant contributor to the burden of chronic pain.[41] Among them, low back pain has remained the single largest cause of disability worldwide since 1990, regardless of a country's economic status.[2] Other MSK disorders such as neck pain and knee osteoarthritis also rank among the top 20 contributors to global disability.[40]

The high population-level burden of MSK disability is largely due to the widespread prevalence of noninflammatory MSK conditions (or chronic primary MSK pain). However, the impact of inflammatory rheumatic diseases, while less common, is substantial at the individual level. Furthermore, the overall burden of MSK-related disability increases significantly when accounting for MSK impairments beyond the scope of NCDs. These include injuries and trauma from road traffic accidents, falls, and workplace incidents, as well as persistent pain presenting through MSK structures.[2,42,43]

Economic consequences of musculoskeletal conditions

The economic impact also needs to be considered, both at the level of personal and also the national economy. Economic impact is often a powerful factor in influencing policy priorities.

The economic burden of MSK conditions is profound, being estimated in 2021 as having a total worldwide lost value of US$2099.84 billion, equivalent to 1.41% of global GDP.[44] Through a recent decomposition analysis in GDB data, direct health care costs of MSK conditions attributed to aging was estimated at US$96 billion (0.1% global GDP).[45] In the Europe Union the potential costs have been estimated to reach 2% of GDP through work disability, sickness absence, and lost productivity,[46] while in the United Kingdom, MSK conditions are the third-largest area of spending by the health system.[47]

Although the health care costs are significant, the impact on lost productivity and the costs of welfare and social support are far greater.[48] MSK conditions are a primary reason for work disability, presenteeism, and sickness absence particularly in older workers.[4] With aging populations, this is becoming unaffordable and is an opportunity to drive for policy changes and reorientating of health systems. For example, in the United Kingdom, the government has established a joint Work and Health Directorate of the Department for Health and Social Care and Department for Work and Pensions that is driving changes in delivery of services for MSK conditions to reduce work loss.

The gap between the problem and implementing the solutions

There have been great advances over recent decades in what can be achieved in the prevention, treatment, and rehabilitation of MSK conditions. Remission is a realistic goal for inflammatory rheumatic diseases.[49] Restoring function is possible following trauma or joint diseases such as osteoarthritis (OA) and chronic primary MSK pain such as low back pain.[50–52] Much can be achieved by simple lifestyle changes and self-management, meaning that cost-effective scale-up at a population level is an achievable goal with appropriate resourcing, workforce capability development, and supportive public health policy. There are many models of care for MSK conditions along with quality indicators. However, these are not being translated into high value clinical care, either through lack of access or because service models enable or preference low value care options. There are few national policies or programs for MSK conditions,[9,10,53] and a lack of implementation of guidelines. Consequently, there is a lot of unwarranted variation in care between and within countries and a large burden of avoidable disability.

Co-creating Potential Solutions—A Framework for Health Systems to Respond

While the clinical community reasonably concentrates on service delivery, sustainable health initiatives and care pathways require transformation in other dependent “building blocks” of health systems, such as supportive policy, workforce development, and financing frameworks.[15,54] Health systems strengthening refers to actions that sustainably improve key functions of the health system, historically categorized under 6 “building blocks”: service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance.[19] However, this framework often underemphasizes critical factors such as co-creation with communities, addressing inequities, considering the social, commercial, and environmental determinants of health, and genuinely including the voices of marginalized populations.[55–57] Considering these broader elements increases the likelihood of generating solutions that are not only effective but also acceptable, feasible, and scalable within diverse local contexts—ultimately contributing to healthier populations.

One key learning from previous efforts is that simply reiterating the scale of the problem and demonstrating effective interventions, while necessary, is not sufficient to drive meaningful change. A compelling case for change must be paired with co-created, locally adaptable solutions that go beyond identifying *what* needs to happen

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and clearly articulate *how* to implement change.[13] Further, implementation is more likely to succeed when initiatives are aligned or integrated with existing or emerging programs or agendas—especially in low- and middle-income countries (LMICs), where capacity and resources for new efforts may be limited.[9,58]

Recognizing this, the Global Alliance for Musculoskeletal Health (G-MUSC) issued a call for a coordinated global response to the growing burden of MSK conditions. In response, an international consortium worked with the global community to co-develop a strategic roadmap outlining prioritized areas and concrete actions to strengthen health systems for MSK health.[15,25] The aim was to equip stakeholders—including global and national health agencies—with clear, actionable priorities for driving system-level reforms, expanding the focus beyond health service delivery alone. An inclusive and co-creative approach was adopted to develop an adaptable blueprint to support global and country-level systems strengthening in value-based MSK health, injury and pain care, involving 678 individuals from 72 countries (46% LMICs).

The roadmap report, *Towards a global strategy to improve musculoskeletal health*,[25] was developed through a rigorous, mixed-methods research process. This included a qualitative study involving international key informants, a scoping review of global MSK health policies, and a global eDelphi study to refine and prioritize focus areas and actions.[10,15,16] Importantly, the actions extend beyond health care delivery and encompass social determinants such as finance and taxation, urban development and transport, education, and industry. The roadmap is grounded in 5 guiding principles: adaptability to local contexts; inclusiveness through wide consultation and co-design with patients, citizens, and stakeholders; focus on improving function, quality of life, and overall health; a life-course approach to MSK health, from childhood through older age; and equitable access to early, value-based care. Eight priority areas—or "pillars"—for strengthening health systems were identified. Each is supported by specific, detailed actions, with some focused on global strategies and others tailored to national contexts (**Fig. 1**). These pillars are interrelated and should be viewed as an integrated suite of interventions. Special attention has been given to ensuring relevance and applicability within LMICs.[9]

Positioning Musculoskeletal Health into Political Context

In framing the problem of MSK health and the need for health systems to respond to the burden of MSK conditions, if we want health system strengthening, we have to understand the opportunities, needs and priorities of the policymakers.

Evolving challenges

The WHO has called for a paradigm shift in global health, where health systems prioritize health and disease prevention rather than just treating the sick. Such a transformation demands a whole-of-government and whole-of-society approach that considers not only the delivery of health care, but recognition that healthy populations are influenced by what happens in homes, streets, schools, and workplaces.[59] There is a need to transition from "health systems" to "systems for health" which are responsive to threats, hazards, and risks, and address the social, economic, environmental, and commercial drivers of health.[57] This is in response to people living longer but not healthier, with a change in the burden of disease with decreasing years of life lost but increasing YLDs and increasing years lived in poor health.[39]

There is a growing burden of disability resulting from NCDs, the increasing co-occurrence of multiple NCDs (multimorbidity), antimicrobial resistance, and the rapid spread of infectious pathogens due to global travel and migration—all of which have

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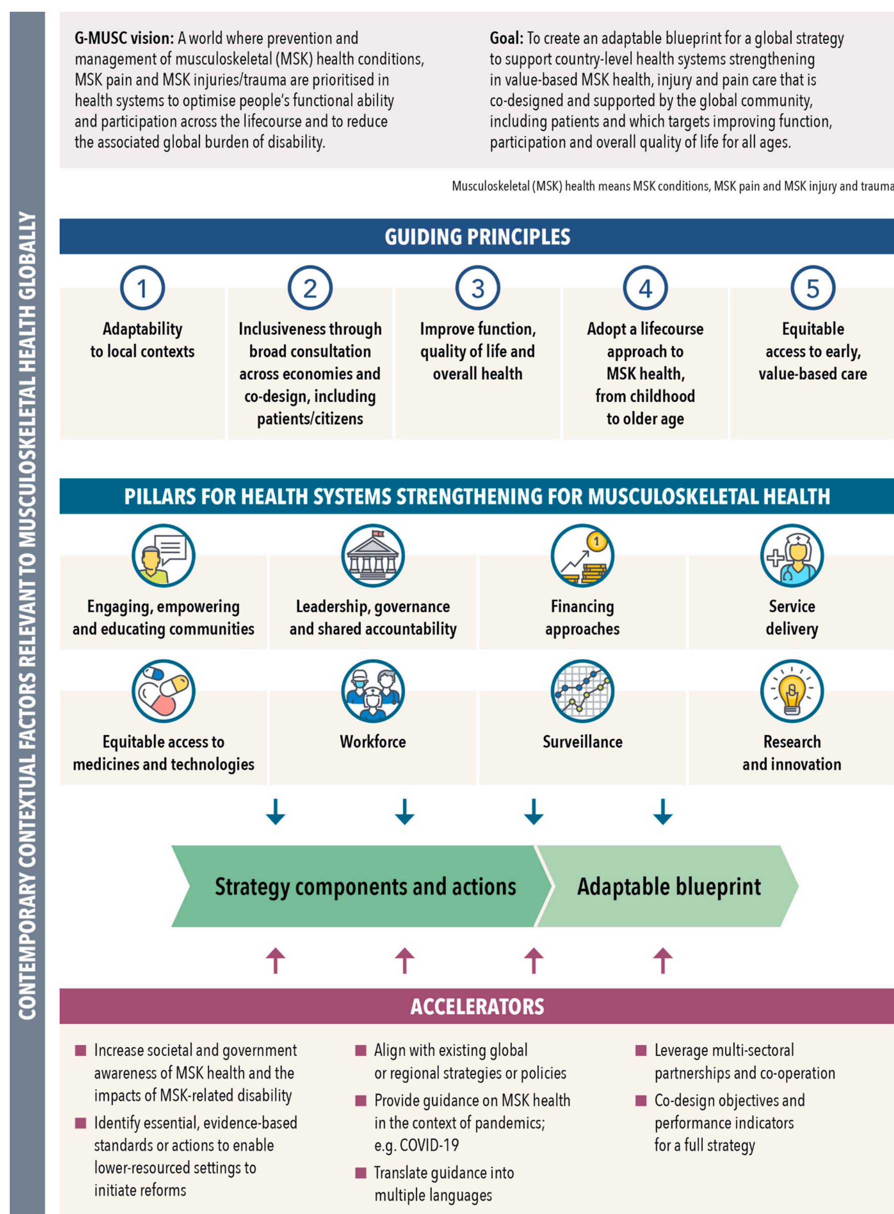

Fig. 1. Summary of the G-MUSC roadmap for strengthening health systems for musculoskeletal health. (Briggs AM, Huckel Schneider C, Slater H, Jordan JE, Parambath S, Young JJ, et al. Health systems strengthening to arrest the global disability burden: empirical development of prioritised components for a global strategy for improving musculoskeletal health. BMJ Global Health. 2021;6:e006045. https://doi.org/10.1136/bmjgh-2021-006045.)

the potential to trigger pandemics, as demonstrated by the COVID-19 pandemic of 2019 to 2020.[60,61] For LMICs, these emerging challenges are layered on top of persistent struggles with communicable diseases, creating a complex dual burden.[39] Additionally, injuries related to falls, violence, armed conflict, workplace accidents, and

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motor vehicle accidents remain significant concerns in many regions and are particularly relevant to MSK health and the broader global injury burden.[62]

There is a commitment by countries to achieve the triple billion target of Universal Health Coverage, but the coverage of NCDs lags well behind that for communicable, maternal, neonatal, and nutritional diseases.[63] Health systems are largely designed for fixing short-term health conditions and not for the long-term management of chronic diseases that need strong primary health care systems. Rehabilitation services also need to be strengthened, and better integration of care is needed for older people.[12,64]

There are also the financial pressures as health systems struggle to meet the needs of the increasing burden of long-term conditions and social care and community-based health care is inadequate to meet the needs. These financial pressures are worsened by the impact that health conditions have on the productivity through absenteeism, presenteeism, and long-term work loss through people leaving the labor market.

All these challenges are potential opportunities where health system strengthening to respond to MSK conditions can be part of the solution. In the UK, a joint policy unit between the Departments of Health and Labour has identified that improving access to MSK care can enable people to stay in the labor market, increase productivity, and reduce the costs of disability which falls on the government.[65]

Build Alliances and Drive Change Collectively

The critical role of global leadership in influencing and driving the global health agenda has been established by experience in other areas.[23,66] This needs to come from within the MSK community, while at the same time engaging and empowering the community to bring together a wide coalition who share the missions and vision.[17] That is why a common narrative to frame problem and co-creating contextually relevant solutions are central to driving change. There is a broad scope for such a coalition because of the range of conditions that affect MSK health, the wide-reaching impacts of disability and pain, the increased burden in older people, the range of professional and patient stakeholders, as well as other stakeholders who have a common vision. In addition, one needs to look outside the MSK community to gain wide support and maximize opportunities in a resource-competitive environment. The pervasiveness of the impact of MSK conditions on individuals and society gives many opportunities, for example, the impact on work gives opportunities to work with employers and labor organizations. The increased impact in older people gives opportunities to align with activities focusing on healthy aging.[67,68]

CASE STUDIES AND LESSONS LEARNED

Finally, we provide a suite of 7 case studies to demonstrate applied examples of *where* and *how* activities aligned with the principles and pillars of the G-MUSC roadmap can support health systems strengthening responses to MSK health, either regionally, nationally, or internationally. In this way, each case study provides a “real-world” illustration of how the pillars, guiding principles, and accelerators have, and can be, used in an integrated way to strengthen a health system to respond to a specific gap relevant to MSK health and well-being. The case studies are structured to identify the challenge and the context, then describe the activities undertaken and how these relate the to the G-MUSC roadmap. Collectively, the case studies show what opportunities, actions, and levers can be used to influence a national health system, or systems internationally. The case studies illustrate that actions typically intersect with more than one of the 8 priority pillars and the 5 guiding principles, illustrating that complex

solutions typically require activity across pillars (or health system "building blocks") to support a whole of health system change. The 7 case studies are presented in the Supplementary File.

SUMMARY

With unequivocal evidence for the profound current and projected global burden of MSK conditions across the life course and the relative de-prioritization of MSK health within national health policies and strategies for NCDs, there remains an urgent need to strengthen health systems internationally to support populations with physical function, mobility, and pain care through MSK health. A unified global community that adopts common framing of the "problems" and co-creates solutions that are adaptable across countries at different levels of development is a potentially powerful catalyst to system-level change. Real-world case studies illustrate how collaborative networks, co-created solutions, and contextually adapted strategies can drive meaningful change at national and global levels. Key accelerators include raising awareness, aligning with existing health agendas, and building inclusive alliances that unite lived and learnt experience. The G-MUSC roadmap provides a framework for action, guiding stakeholders to integrate MSK health into broader health priorities. Ultimately, comprehensive, adaptable, and equitable strategies are essential to ensure that all populations benefit. The Global Alliance for Musculoskeletal Health and its partners continue to work toward promoting the roadmap for health systems strengthening through the network of MSK stakeholders as well as its implementation. The goal is that countries and the global health community as represented by WHO should have comprehensive plans for strengthening health systems to respond to the great and growing burden of MSK health impairments.

CLINICS CARE POINTS

- Access to timely high-value care for MSK conditions is constrained by the de-prioritization of MSK health relative to other noncommunicable diseases.
- Health policy can be influenced by networks that bring together the lived and learnt experience of MSK conditions and co-created solutions to address system needs.
- A strategic road map to strengthen health systems to respond to the growing burden of MSK conditions has been co-developed that outlines prioritized areas and concrete actions.

DISCLOSURE

A.D. Woolf, K.E. Akesson, F. Manase, and F. Moscogiuri have nothing to declare. A.D. Woolf is an unpaid and voluntary member of the International Coordinating Council of the Global Alliance for Musculoskeletal Health. N. Betteridge declares, in the last 36 months, consulting fees from Alfasigma, Galapagos, Grunenthal, Sanofi and support to attend meeting from Alfasigma, Galapagos, Grunenthal, Sanofi. A.E. Bussières serves on World Spine Care scientific committee and is an unpaid and voluntary member of the research stream of the World Rehabilitation Alliance and SPINE20 Scientific Taskforce. He has received travel support to attend scientific meetings from World Spine Care, a non-for-profit charity organization. G.A. Finley received support from Co-chair Global Advocacy Working Group, International Association for the Study of Pain. No financial conflicts of interest. D. Kopansky-Giles serves on World Spine Care scientific committee and is an unpaid and voluntary member of the primary care work stream of the World Rehabilitation Alliance; is an unpaid and voluntary

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member of the International Coordinating Council of the Global Alliance for Musculoskeletal Health. R. Parker serves on the council of the International Association for the Study of Pain and as co-chair of the Global Advocacy Working Group; has received fees for teaching on pain management from the Train Pain Academy. R.K. Wicksell serves as the WHO liaison of the International Association for the Study of Pain. Has received honoraria for lectures and royalties from a book publisher, both unrelated to the current submission. A.M. Briggs declares research grant income, unrelated to the current submission, paid to his institution in the 36 months prior to submission of the current paper, from the following agencies: Government of Australia (Health Professional Pain Education; Health Professional Arthritis Education), AO Alliance, Asia Pacific League of Associations for Rheumatology, Australian Rheumatology Association, Pan American League of Associations for Rheumatology, World Federation of Chiropractic, Western Australian Government Department of Health Grant, Arthritis Australia and Arthritis and Osteoporosis Western Australia. A.M. Briggs. also declares consulting fees paid by the World Health Organization, an honorarium paid by the American College of Rheumatology, and travel support to attend technical and scientific meetings from the World Health Organization, University of Otago, World Federation of Chiropractic and Australian Rheumatology Association. A.M. Briggs is an unpaid and voluntary member of the International Coordinating Council of the Global Alliance for Musculoskeletal Health.

SUPPLEMENTARY DATA

Supplementary data related to this article can be found online at https://doi.org/10.1016/j.rdc.2026.02.003.

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