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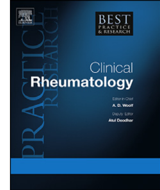

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Global health policy in the 21st century: Challenges and opportunities to arrest the global disability burden from musculoskeletal health conditions

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A B S T R A C T

The profound burden of disease associated with musculoskeletal health conditions is well established. Despite the unequivocal disability burden and personal and societal consequences, relative to other non-communicable diseases (NCDs), system-level responses for musculoskeletal conditions that are commensurate with their burden have been lacking nationally and globally. Health policy priorities and responses in the 21st century have evolved significantly from the 20th century, with health systems now challenged by an increasing prevalence and impact of NCDs and an unprecedented rate of global population ageing. Further, health policy priorities are now strongly aligned to the 2030 Sustainable Development Goals. With this background, what are the

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challenges and opportunities available to influence global health policy to support high-value care for musculoskeletal health conditions and persistent pain? This paper explores these issues by considering the current global health policy landscape, the role of global health networks, and progress and opportunities since the 2000–2010 Bone and Joint Decade for health policy to support improved musculoskeletal health and high-value musculoskeletal health care.

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Introduction

At the end of the 1990's it was recognised by clinicians, researchers and patients that the lack of priority for musculoskeletal (MSK) health and science was a barrier to developing and providing appropriate prevention and management of these common problems at both the clinical care level (micro) and at the health system level (macro) (Box 1). Champions for change came together and launched the Bone and Joint Decade in 2000, with the aim of improving the health-related quality of life for people with MSK disorders globally [1]. The World Health Organization (WHO) endorsed the Bone and Joint Decade.

The 2000–2010 Decade aimed to raise awareness of the suffering and cost to society associated with MSK conditions, empower patients to participate in their own care, promote cost-effective prevention and treatment and advance understanding of MSK conditions to improve prevention and treatment through research. The initial focus was on providing the evidence of burden [2,3]; encouraging and supporting best practice; and developing strategies for controlling MSK disorders through the implementation of such best practice [4,5]. In addition, to driving advocacy and reform, alliances of the key stakeholders of patient and professional organisations worked together nationally and internationally.

After the Decade, it was recognised that MSK health was still not being adequately reflected in health care provision or priorities. This was despite demonstrating the enormous and increasing burden of disease of MSK conditions and the major advances in what can be achieved in clinical and other aspects of MSK care. The Bone and Joint Decade subsequently evolved into the Global Alliance for Musculoskeletal Health (G-MUSC) to continue the work of the Decade. Here, a continued focus was needed on making MSK health a public health policy priority. Providing the evidence of the problem and clinical solutions was needed, together with supporting the policy environment to enable health systems to deliver good MSK health to all.

What is the political and health care context? What are the political opportunities? What are the competing priorities and challenges? A greater understanding of the policy landscape to achieve

Box 1
Definitions of levels within a health system

Macro: refers to the whole system level, including policy and governance, regulation, financing, workforce, information systems and strategy to deliver health services. Typically, this level refers to the system manager, such as the Ministry of Health.

Meso: refers to the level of health service delivery organisations, such as hospitals, community health centres and other service delivery organisations. Strategies developed at the macro level (e.g. Models of Care) are operationalised at this service level.

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

improved MSK health outcomes is needed through considering the myriad of factors that influence health policy (Fig. 1).

Clinical and health services research has provided great advances in our understanding of the aetiology of MSK conditions and their prevention and management through a range of innovative therapies: biologics, cell-based therapies, surgical advances (such as joint replacement), rehabilitation and support for self-management, particularly in the context of pain care [135]. Despite this knowledge and the increasing burden of disease, access to safe and effective care (high-value care) remains highly variable. Elshaug et al. [6] define high-value care as "*care for which evidence suggests it confers benefit to patients, or probability of benefit exceeds probable harm*." Conversely, low-value care is defined as "*care for which evidence suggests it confers no or very little benefit to patients, or risk of harm exceeds probable benefit*." There is also often a failure to ensure that innovations are implemented in an appropriate way to avoid low-value care and unwarranted care variation. As nation's economies develop, and commercial influence is inadequately regulated, clinicians often implement highly technical but low-value options rather than ensuring that the high-value fundamentals are also accessible [7]. Health systems have also been slow in ceasing support for treatments that are no longer supported by evidence and carry risk of harm, such as lumbar spinal fusion for non-specific back pain and opioid prescribing for chronic non-cancer pain [8,9]. Although clinical guidelines and Models of Care (system-level frameworks that guide service delivery for specific conditions [10]) recommend high-value options as preventive public health strategies and first-line treatments (e.g., exercise and weight loss for osteoarthritis pain), many health systems fail to achieve this. Instead, health systems continue delivering too much low-value care and too little high-value care.

The clinical community and health service delivery organisations tend to focus on the micro' and meso' levels of health reform (see Box 1 for definitions). However, public health initiatives and care pathways for people with established conditions must be supported by policy and financing models (that is, system or macro' level considerations) that emphasise first-line, effective interventions. It is at this macro' level that many of the barriers and solutions to sustainably implementing high-value care exist. The macro level incorporates the fundamental building blocks of health and social care systems:

Fig. 1. Schematic of the factors that influence health policy, adapted from Shiffman and Smith [134].

policy and regulation, financing models, workforce planning, information systems, and mechanisms for optimal service delivery. At a population level, these critical building blocks facilitate accessibility with equity and safety. They also promote effectiveness and sustainability of health care. Such strategies are typically created and operationalised by system-level managers (e.g. policy makers) and administrators within health services. Changes in priorities at the macro level are necessary to deliver the most cost-effective care for people with MSK conditions (Table 1).

Table 1
Summary of system-level (macro) and organisation-level (meso) factors that influence MSK health. Adapted from Briggs et al. [11] and Woolf et al. [12].

Health system level	Determinants of musculoskeletal health	What could be changed to deliver sustainable, high-value care
Macro	The macro level considers the functionality and scope of health systems, health policy, infrastructure and resource allocation, and socioeconomic factors. Health systems and their governance through health policy play a critical role in the planning and delivery of MSK health care. Health care systems in developed nations are usually oriented towards acute care services and respond to mortality risk rather than long-term morbidity associated with MSK conditions and their co-morbidities, which hinders opportunities for service development in ambulatory and primary care – arguably, the setting where MSK health care is most needed. Given that the MSK conditions are less frequently associated with mortality, health systems and policy tend to be less responsive to these conditions and place lower importance on the development of policies and programmes to address them. This contributes to a general lack of population awareness concerning the burden and impact associated with MSK conditions. Further, access to MSK health care is variable according to geography, ethnicity and socioeconomic status, creating unhelpful care disparities [13–17].	• The impact of impaired MSK health on function, mobility, quality of life, mental health and economic prosperity of the individual and their society should be communicated at a societal level – governments, employers, educators and to communities. The inaccurate perception that pain and disability are an inevitable part of ageing or due to tissue-level wear and tear' should be addressed. • Given that populations are ageing and becoming more obese and less active, the impacts on the MSK system will be profound [18]. Primary prevention initiatives for chronic diseases should include messages about preventing impairments in the MSK system. Mass media campaigns for back pain, for example, are known to be effective in this regard [19–21] and potentially transferable to low and middle income settings [22]. • MSK health should be explicitly included in polices and frameworks that address non-communicable diseases, chronic diseases or lifecourse and ageing [17,23]. • Developing system capacity (governance, resourcing, infrastructure) to support MSK health care delivery in community or ambulatory care settings in urban and rural locations is important for health system sustainability. Operationally, this is likely to be achieved by implementing evidence-based Models of Care at the community level [23,24]. • Encourage multidisciplinary stakeholders (including funders, insurers, policy makers, educators, consumers and carers) to co-design and co-implement Models of Care [25].
Meso	The meso level considers health services, the volume and competencies of the clinical workforce, health professional and student/ trainee education, service delivery systems and clinical infrastructure. Despite the identified burden of disease, the delivery of MSK care from practitioners and health systems often inadequately aligns with best available evidence for what works [26–28]. This may be attributed, in part, to deficiencies in knowledge and skills of health professionals, but it is also largely influenced by funding and service models that inadequately support effective co-care. Access to, and delivery of, care is further complicated by the chronicity of MSK conditions and the high prevalence of comorbid conditions, particularly mental health conditions.	• Development of knowledge and skills among health professionals to manage MSK health conditions using a best practice, person-centred approach is required [17,26] to ensure that people receive the right treatment, at the right time, by the right person. As MSK problems are so common, health professionals and community health workers at the first point of contact need approprite competencies (e.g. for osteoarthritis care [136]). In high-income countries, this is required amongst family physicians [26], and in low income countries by community health workers [29]. • Professional bodies representing MSK health should support curriculum development and delivery for junior health professionals. • Develop capacity of the non-medical health workforce to contribute to the management of MSK health conditions in an interdisciplinary, inter-professional and non-hierarchical manner [29–31]. Further, it is important, where feasible, to work towards achieving a

Table 1 (*continued*)

Health system level	Determinants of musculoskeletal health	What could be changed to deliver sustainable, high-value care
		level of specialist medical oversight to ensure access to the latest specialist evidence. For the many geographic regions where this is not feasible due to the vast MSK health burden and high service need, access to evidence-based guidelines and inter-disciplinary collaboration is crucial. • Given the known workforce shortages of medical specialists such as rheumatologists, endocrinologists and pain medicine specialists [17], further extension of the scopes of practice of other health professionals, such as nurses, allied health professionals and pharmacists, are needed to deliver best-practice care to people with MSK health conditions. Capability frameworks have been developed to support this. • Develop funding models that appropriately support interdisciplinary care that is required for people with MSK health conditions and their co-morbidities. • Extend the reach of telehealth to provide multidisciplinary clinical services to people who live in rural and remote areas or during times when access to health services is limted (e.g. the COVID-19 pandemic). • Ensure that curricula for a broad range of relevant non-medical students as well as medical students align with contemporary best practice and minimum standards for adequacy of skills and knowledge in MSK health care [32–35]. For rheumatology education in particular, the disproportionate emphasis on autoimmune and inflammatory conditions to the detriment of higher burden conditions such as MSK injury, osteoarthritis, osteoporosis, fracture, low back and neck pain needs to be addressed. • Resource health and rehabilitation services in community-based settings with minimum standards for service delivery of MSK health care [36,37]. • Undertake more health services research relating to the implementation of best practice Models of Care that incorporates program evaluation, health economic evaluation and consumer-centred outcomes [23,38]. • Encourage employers to support older employees with MSK health conditions to maintain productive employment and promote safe workplaces. • Improve referral networks and pathways between providers, especially between those in primary and secondary care (e.g. between family physicians, hospital- and primary-care based allied health practitioners, rehabilitation services and medical specialists).

This paper highlights why we need to address health policy to ensure that all health systems are fit for the purpose of providing high-value care for MSK conditions and it covers health promotion, prevention, management, rehabilitation and palliation.

We consider the current global health landscape, including opportunities and challenges for reform, and the role of global health networks. We also consider what has been achieved through the Bone and Joint Decade and beyond. We also address the gaps and priorities in the context of influencing global health policy and health systems reform.

The global health policy landscape: challenges and opportunities

Evolving challenges

The global health policy landscape has evolved from the 20th century into the 21st century, reflecting dramatic changes in population health over this period. Although the burden of disease associated with MSK conditions has remained high over time, evidenced for example by low back pain being the leading cause of global disability since Global Burden of Disease (GBD) study measurements commenced in 1990 [137], it was not prioritised as a global health priority in the 20th century. Whereas priorities for the 20th century largely focussed on communicable diseases such as HIV, nutritional deficiency disorders, maternal and child health and injury and trauma associated with war, the issues impacting human health in the 21st century have evolved, creating new and complex challenges for health systems at all stages of maturity [40]. Health systems in the 21st century face new and complex challenges such as rapid population ageing, increasing disability attributed to non-communicable diseases (NCDs) and multimorbidity of NCDs, antimicrobial resistance, rapid transfer of pathogens through travel and migration that have the potential to create pandemics (e.g. coronavirus disease COVID-19 pandemic), climate change and natural disasters [40,41]. For low and middle-income countries (LMICs), these contemporary challenges are being experienced along with ongoing challenges of communicable diseases, thus creating an increased burden and complexity of challenges for these nations. The issues of ageing and behavioural determinants leading to increased morbidity from NCDs are of particular relevance to MSK health and are the focus of this paper. We acknowledge, however, that injury from falls, violence, war, workplace incidents and road trauma are highly relevant to MSK health and the global burden of injury [42].

Challenges and opportunities in context: global population ageing

Population ageing is advancing at rates not previously seen in human history [43]. This is particularly apparent in LMICs due to reductions in mortality at younger ages and fewer deaths from infectious diseases. Most older people now live in LMICs and this distribution is expected to continue [43]. Life expectancy has increased in most countries (expectancy has risen by about 7 years since 1990; from 66 years in 1990 to 73 years in 2017 [44]), with the age-standardised global mortality rate declining by 22% from 2007 to 2017 [45]. The implications of extended longevity include unprecedented demand on health and social care services and the need to dramatically realign health systems to respond to changing health needs, which include the delivery of care over extended periods to manage long-term health conditions and the establishment of long-term care systems [46,47]. While some countries have made considerable advances in this area, such as Japan and Korea, much system reform is needed in many others, especially in LMICs [47]. It is estimated that by 2050, the number of people aged 60 and over globally will comprise about 22% of the world's population [43]. With a total population estimate of 9.7 billion by 2050 (an increase of 26% from 2019 estimates), people aged over 60 years will comprise more than 2.1 billion persons, or more than double the current number, with most living in LMICs [48]. The prevalence of age-related MSK conditions will undoubtedly continue to rise placing increased demand on surgical, pharmaceutical and rehabilitative care interventions. Systems and regulations to prioritise delivery of high-value MSK care will become more imperative and urgent across the globe [7,49]. For high-income economies, overcoming unhelpful commercial influence over access to, and delivery of high-value MSK care will be important [7]. Conversely, in LMICs, building system capacity to deliver basic, effective MSK pain care remains a priority [50]. The 2020–2030 Decade of Healthy Ageing is therefore a timely and appropriate opportunity to leverage global efforts to support *healthy ageing* and it explicitly includes MSK health [43,51]. In this context, the optimisation of the MSK system to maintain a person's intrinsic capacity will become increasingly important, creating opportunities to realign health systems to better support functional ability through improved prevention and management of MSK conditions. This is evidenced by the fact that MSK function and mobility are key components of the WHO Integrated Care for Older People approach [51] and are a focus of the WHO Rehabilitation 2030 agenda [52,53].

Challenges and opportunities in context: non-communicable diseases and healthy life expectancy

Health-adjusted life expectancy (HALE), or healthy life expectancy', which quantifies years expected to live in good health, increased between 1990 and 2017, although by a smaller magnitude than total life expectancy—from 57 years in 1990 to 63 years in 2017 [44]. The gap between life expectancy and HALE points to a period of living in poorer health. Notably, the gap has increased by a larger magnitude for people in LMICs and is largely related to the burden of NCDs. NCDs account for the majority of the current total burden of disease (now 62%; an increase of 16% from 2007 to 2017) [44] and the majority of the current total disability burden (now 80%; an increase of 61% from 1990 to 2017) [54]. Critically, the disability burden is largely attributed to MSK pain conditions [54] and persistent pain more generally [55]. Health system challenges are further exacerbated by a rise in NCD multimorbidity prevalence, commonly featuring MSK pain conditions [56–58]. When considering MSK pain as an index condition, up to 75% of adults aged 18–64 years have a concurrent chronic health condition [58]. A prevalent MSK health condition concurrent with other chronic conditions is associated with poorer health (higher ratings of pain, psychological distress and work interference) and significantly greater health costs (up to 16 times higher) compared to those without multimorbidity [58,59]. Multimorbidity with ageing is now the norm [60,61], not the exception, suggesting that integrated care approaches that explicitly include MSK health are essential, rather than the usual siloed, disease-specific care [46]. There is a strong argument and opportunity, therefore, to strengthen health systems to respond to the increasing burden of NCDs, particularly multimorbidity of NCDs, and to integrate MSK conditions within this agenda as an equal priority with other NCDs [11,50,55,62–66].

The Sustainable Development Agenda: implications for global health policy

Global health system reform and health priorities for the next decade will largely be responsive to the 2030 Agenda for Sustainable Development. This Agenda is framed by the 17 interdependent Sustainable Development Goals (SDGs), providing a 15-year global blueprint (2016–2030) that aims to deliver a better and more sustainable future for all, including health. The 17 SDGs replace the eight Millennium Development Goals (MDGs) of 2001–2015. Three of the eight MDGs included a focus on health: child mortality (MDG 3), maternal health (MDG 4) and communicable diseases (MDG 5). While the progress towards the targets for these health-related MDGs was encouraging, many fell short of targets [67].

The health goal for the 2030 Sustainable Development Agenda (SDG 3) aims to "*Ensure healthy lives and promote well-being for all at all ages*" and is intentionally linked with the other 16 goals. Indeed, a recent analysis confirmed the highly synergistic relationship between the SDGs, as illustrated in Fig. 2 [68]. Several of the other SDGs have direct relevance to supporting the health SDG (SDG 3), and the health SDG synergistically supports the non-health SDGs [68,69]. Brolan et al. [69] highlight the importance of the non-health SDGs in promoting the social determinants of health such as nutrition (SDG 2), education (SDG 4), gender (SDG 5), water and sanitation (SDG 6), employment (SDG 8), reducing inequalities (SDG 10), housing (SDG 11) and healthy environments (SDGs 13–15). They further highlight the importance of SDGs 16 and 17 to support health system strengthening through good governance and multi-stakeholder partnerships for health, strong data and information systems, and equitable access to quality health care services and associated entitlements. SDG 8 (Decent Work and Economic Growth) aims to "*achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value*". A healthy population is a prerequisite for development and underpins economic growth [68]. SDG 8 is, therefore, particularly relevant to people with MSK conditions in the context that MSK conditions are the main contributor to loss of productive life years and the disability employment gap [70,71].

The health goal (SDG 3) has 13 targets, which include four implementation targets (3a-3d; Box 2). The SDG 3 targets present both challenges (to address) and opportunities (to lever) to improve MSK health. Target 3.8, focusing on Universal Health Coverage (UHC), is the unifying target for all the other health targets and arguably relevant to other SDGs [72]. The WHO defines UHC as "*all*

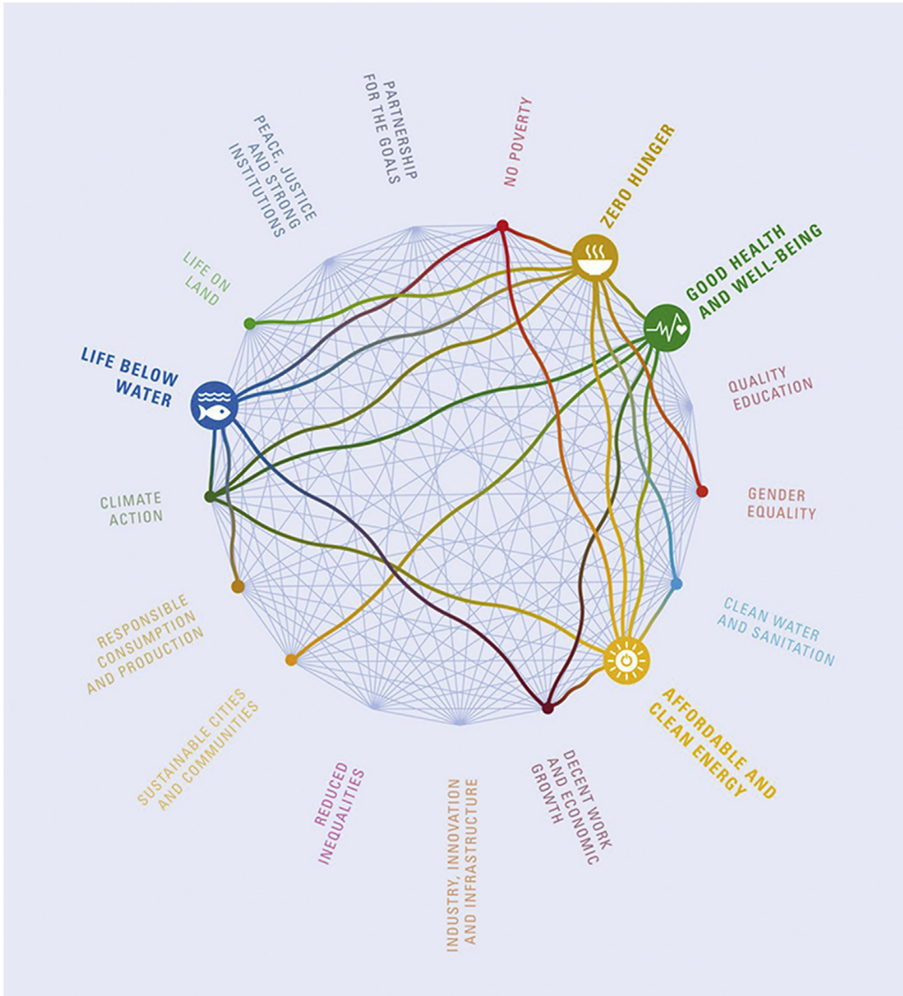

Fig. 2. Graphic of the interdependency of the Sustainable Development Goals. Reproduced with permission from the International Science Council, Paris, France [68]. The graphic is based on an analysis of four SDGs and their interactions with other goals: SDG2: Zero Hunger; SDG3: Good Health and Well-being; SDG7: Affordable and Clean Energy; and SDG14: Life Below Water.

people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship" World Health Organisation, https://www.who.int/health_financing/universal_coverage_definition/en/. UHC is relevant to achieving MSK health gains and provides an opportunity to do so, for example through providing access to important promotive and rehabilitative services and medicines that are relevant to MSK health through essential packages of care. However, although SDG target 3.4 appropriately aims to reduce mortality attributed to NCDs (predominantly cancer, diabetes, respiratory disease and cardiovascular disease), there remains an under-emphasis on reducing disability associated with NCDs, despite unequivocal data highlighting the growing global burden of disability [54]. The apparent mismatch between the target and global health estimates limits the opportunity to strengthen health systems in the area of greatest need; that is, to respond to the burden of disability which is largely attributed to MSK conditions [64].

Box 2
2030 targets for SDG 3: Ensure healthy lives and promote wellbeing for all at all ages' (reproduced from https://www.who.int/sdg/targets/en/).

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births.
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
3.4 By 2030, reduce premature mortality from non-communicable diseases by one-third through prevention and treatment and promote mental health and well-being.
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents.
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
3.a Strengthen the implementation of the WHO Framework Convention on Tobacco Control in all countries, as appropriate.
3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.
3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.
3.d Strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks.

Heath policy evolution in the 2030 Sustainable Development era

Considering the Sustainable Development Agenda and evidence of global health trends, national governments and intergovernmental organisations are increasingly cognizant of the urgency to reform and realign health systems to respond to contemporary health challenges, particularly those in relation to ageing and NCDs [43,73]. The historical approach to health care is no longer fit for the purpose, and health systems in many countries remain ill-equipped to manage trajectories for NCDs and ageing [46,73–75]. While there is absolutely a need for episodic and curative care for communicable diseases and responding to natural disasters and health emergencies (such as the COVID-19 pandemic) and for tertiary hospitals to deal with complex case management and maintain standards of maternal and child health, a system that overemphasises episodic curative health care grounded in a biomedical approach cannot meet contemporary and evolving health needs [7,40,46]. Rather, what is needed is a strong primary health care system that is accessible through UHC that supports promotive, preventive, rehabilitative and palliative care through integrated care delivery and is bolstered by a long-term care system [47,76]. The

necessary realignment of health systems to address these challenges presents opportunities to better address the burden of long-term and high-burden MSK conditions.

Achieving system-wide reform demands both global cooperation and national effort in responsive health policy [73,74]. Globally, the 2018 Declaration of Astana catalysed recommitment to the 1978 Declaration of Alma-Ata to strengthen people-centred primary health care systems that are "*high quality, safe, comprehensive, integrated, accessible, available, and affordable for everyone and everywhere*" [77], consistent with the concept of UHC. The Astana declaration is highly relevant to the contemporary health need, particularly in addressing multimorbidity from NCDs and supporting healthy ageing [46,76,78], and is therefore relevant to optimising MSK health. Examples of other relevant global initiatives supporting system reform for NCDs and ageing include the WHO Integrated Care for Older People (ICOPE) approach as a component of the Global Strategy and Action Plan on Ageing and Health [79], the WHO Rehabilitation 2030 agenda [80] and WHO Best Buys' for NCD prevention and control [81]. All these initiatives offer direct and indirect opportunities to support MSK health care. However, the horizon for improvement in MSK health through national health policy for NCDs remains challenging [7,63]. Linked to SDG 3.4, global performance and monitoring targets for NCDs are principally aligned with mortality reduction for cancer, diabetes, respiratory conditions and cardiovascular disease, leaving less flexibility for prioritisation of MSK health, thereby offering fewer opportunities for governments to support necessary reform efforts for MSK health care [82]. The WHO Package of Essential Noncommunicable Disease Interventions for Primary Health Care in Low Resource Settings is also focussed on heart disease, stroke, cardiovascular risk, diabetes, cancer, asthma and chronic obstructive pulmonary disease [83] and policy initiatives in LMICs have historically overlooked MSK health [66]. In a recent systematic analysis of health policies focusing on integrated prevention or management of NDCs among member states of the Organisation for Economic Co-operation and Development, most countries had policies with targets for cancer (83%), cardiovascular disease (77%), diabetes (77%), respiratory disease (63%) and mental health (63%), while only 50% of countries had policies with an explicit focus on MSK health and/or pain [63]. Nonetheless, many of the proposed activities across the policies were relevant to improving MSK function, potentially offering opportunity for improvement. Further, several nations are developing national and sub-national responses to the burden of MSK conditions through the development of strategic frameworks and Models of Care [23,84–88]. For example, the Australian Commonwealth Government has commissioned National Strategic Action Plans for a range of NCDs, including arthritis, osteoporosis and pain management, and resourcing to support implementation of the Actions Plans has commenced [85–87]. Other examples include a strategic framework for the prevention of MSK health conditions across the life course by Public Health England (Box 2) [88] and the ongoing development of a National Pain Strategy in Canada. The NCD health policy and strategy landscape for LMICs remains less clear.

There are a number of contemporary whole-of-system opportunities to positively influence global health policy and improve MSK health outcomes, including:

- consistent and unequivocal data on burden of disease for MSK conditions [54].
- unsustainable health expenditure on MSK conditions that eclipses other NCDs (e.g. $USD 380.9 billion for MSK health care in the US in 2016) [89] and the costs of work loss and reduced productivity attributed to MSK conditions [90],
- promotion of global initiatives that prioritise functional ability (e.g. ICOPE [78])
- evolution of national health policy and strategic action plans that prioritise MSK conditions within the NCD area [63,85–88].
- recommendations from the WHO Independent High-Level Commission on NCDs that efforts to address premature mortality and disability attributed to NCDs must be rapidly accelerated [73], and
- widespread promotion of initiatives to support delivery of high-value MSK care, such as '*Choosing Wisely*' [91].

Harnessing global health networks to influence the global health policy and drive system reform

The global community (consumers, clinicians, researchers, policy makers and industry) concerned with MSK conditions constitutes a global health network—a web of "individuals and organisations linked by a shared concern to address a condition that affects or potentially affects a sizeable portion of the world's population" (p. 183) [92]. Over the past quarter century global health networks have proliferated and now exist for most major health conditions, including MSK conditions (e.g. through the Global Alliance for Musculoskeletal Health (G-MUSC): https://gmusc.com/, and others). Many, such as the Global Polio Eradication Initiative, are governed by formal institutions. Others are characterised by informal ties, such as an emerging network concerned with the provision of surgical care in LMICs [93]. The global health network concerned with MSK conditions is of this informal kind. Differences in the effectiveness of global health networks may be one reason for the considerable variance that exists in the amount of attention and resources global health conditions receive. For example, HIV attracts considerable global attention, resources and priority in health policy and programs relative to MSK conditions, despite the burden of disease of MSK conditions being far higher. The proportion (95% UI; rank) of global disability-adjusted life years in 2017 for HIV was 2.64% (2.31–3.07; 17th) and for MSK was 5.53% (4.43–6.72; 5th) based on GBD health estimates.

Research on global health networks indicates that nearly all face a set of four strategic challenges [92,94,95]:

1. Problem definition,
2. Positioning,
3. Coalition-building and
4. Governance.

Evidence concerning the global health network that addresses MSK conditions suggests that it also faces challenges in each of these areas. An opportunity exists, therefore, to optimise the effectiveness of the global health network for MSK health by considering and responding to each of these challenges.

The first two challenges, problem definition and positioning, pertain to framing'. Framing is a process of constructing meaning that enables individuals to organise experience, to simplify and make sense of the world around them, and to justify and facilitate collective action [96,97]. Problem definition pertains to a challenge internal to the network—how members understand the problem and its solutions. Problems and solutions can be conceptualised in many ways. For instance, those involved with population and reproductive health policy have disagreed on whether individual rights or social consequences provide the primary rationale for addressing these issues, and on the centrality of family planning provision in this agenda [98]. In MSK health and pain care, for example, there has been a historical lack of consensus about the classification of chronic primary pain as a condition in its own right, requiring a unique ICD classification [99]. A key challenge for global health networks is that they often become embroiled in conflict over problem specification and solutions, hampering their ability to act collectively.

If problem definition is largely an internal framing matter, positioning is an external framing concern—how the network portrays the issue to external audiences [100–102]. Any given issue can be portrayed in multiple ways, and only some may resonate with the external actors whose resources are needed to make progress in addressing a problem. For example, HIV/AIDS has been portrayed as a public health problem, a development issue, a humanitarian crisis and a threat to security [103]. Some positionings resonate more than others, and different positionings appeal to different audiences. A key positioning challenge for MSK health is that most MSK conditions are chronic and impact function, while other NCDs are more closely associated with mortality than morbidity. There is also a public perception that MSK health conditions are an inevitable consequence of ageing. Finance ministers, for instance, might be more likely to respond to portrayals that

emphasise the economic costs of a health problem than health ministers, who might pay more attention to ones that focus on public health benefits, losses and mortality. The external positionings networks usually mirror the problem definitions they create.

Coalition-building pertains to the recruitment of allies beyond core proponents. Many global health networks are insular; they consist largely of individuals and organisations within the health sector and with a specific focus on the issue. Research indicates that those networks that build coalitions that reach beyond like-minded actors and that extend beyond the health sector—a task that necessitates engagement in the politics of the issue, not just its technical dimensions—are more likely to achieve their objectives [95]. Since MSK health is highly relevant beyond ageing and co-morbidity of NCDs, creating stronger alliances in areas of education, work health and safety, child and adolescent health, road traffic injury and trauma, building and infrastructure and sports may be effective in coalition-building and increasing global attention.

Governance pertains to the establishment of institutions to facilitate collective action. Provan and Kenis [104] identify three primary modes of network governance:

1. Shared: where most or all network members interact on a relatively equal basis to make decisions;
2. Lead organisation: where all major network-level activities and key decisions are coordinated through and by a single participating member; and
3. Network administrative organisation: where a separate entity is set up specifically to govern the network and its activities.

It is not that one mode is better than others; the question is whether the mode is congruent with characteristics of the network. For instance, a small network whose members trust one another and agree upon goals may be destroyed if a single individual or organisation with a particular agenda comes to dominate it. A large network whose members lack trust in one another and who disagree on goals may need a lead organisation to bring about effective collective action [94].

What has been achieved from the Bone and Joint Decade and where are the gaps in influencing global health policy and system reform?

Positively influencing global health policy and system reform requires attention to the challenges of *problem definition*, *positioning*, *coalition-building* and *governance*. How well the MSK health community address these challenges will likely shape its capacity to generate attention and resources for MSK conditions during the SDG agenda and beyond. Here, we reflect on how these challenges resonate with the global MSK health community, actions that have been taken to date in addressing these challenges and future priorities to enable positive global action on MSK health.

Problem definition (internal framing)

Resonance with the MSK health community

In 1998, clinicians, researchers and patients from a spectrum of international and national organisations that were all relevant to MSK health came together in recognition of the lack of priority for MSK health and MSK science to consider how this could be collectively changed [105]. The following priorities were identified:

- raise awareness of the impact of MSK disorders;
- enable patients to more effectively participate in their own care,
- provide accessible cost-effective prevention and treatment, and
- increase knowledge through research.

The vision for improving MSK health globally was consistent with ensuring high-value evidence-based accessible UHC for people with, or at risk of, MSK conditions. Broad adoption of this internal framing by the global MSK health community was required, although a range of challenges existed and

continue to be relevant. Historically, a challenge has been how to define the problem of MSK health impairment and possible solutions in a way that the whole MSK health community, or global network, understands and supports the need for collective action at a global scale.

The first challenge is to agree on what are MSK conditions. There is a wide range of problems that affect the MSK system including sprains and strains; traumatic injuries; osteoporosis and fragility fractures; back pain and other regional or generalised pain problems; osteoarthritis; and inflammatory diseases of joints and other MSK structures such as rheumatoid arthritis, ankylosing spondylitis, gout, and systemic lupus erythematosus. This broad suite of more than 150 conditions makes defining MSK health challenging and MSK health may mean different things to different groups.

The second challenge is that, despite the commonality between these conditions in the resultant pain and impact on physical function, there are wide differences in which professionals manage them. This varies by the stage of the care pathway and by differences in health systems. For example, inflammatory conditions are usually managed by rheumatologists; trauma and advanced structural deformity by orthopaedic surgeons; regional pain problems by physiotherapists, chiropractors and pain medicine specialists; and osteoporosis by a wide range of specialties; and most interface with family physicians. In LMICs, workforce configurations differ according to setting. Although the management of these conditions is ideally through integrated care pathways, there is commonly a lack of integrated working between the different professional groups and health care settings and a lack of understanding of each other's capabilities in interprofessional care. There is also often competition between different professions in some health systems where there is an activity-based or fee for service funding model, which may not encourage high-value care interventions [7].

The third challenge is harnessing a global network to influence global policy and drive reform. Stakeholders do not always recognise the importance and power of collective action at the global policy level. They may not appreciate how collective action is relevant to their context, which is usually at a local or national level and often specific to their professional or patient community.

Actions in addressing the challenge

The Bone and Joint Decade 2000–2010 initiative focused on collective action at the global and national levels [1]. A WHO Scientific Group Meeting was held concurrent to the launch of the Decade to define the global impact of MSK conditions, collating data from all global regions [3]. The Decade intentionally enabled organisations from international and national clinical, research and patient communities to come together and work as an alliance to deliver the shared goals of the Decade. Champions were identified within the different stakeholder groups and nationally to develop the collective approach. A person-focused appraoch provided a unifying goal for the stakeholders to encourage joint action and was facilitated at the local level through national action networks. Through sharing experiences, opportunities for global action could be addressed by the MSK global network.

It was recognised that the lack of priority and policies related to MSK health was due to absence of awareness among policy makers, non-expert health workers and public about:

- the impact of MSK conditions (epidemiology, costs, etc.);
- what can be achieved through prevention and treatment; and
- how to implement evidence to optimise prevention and management of MSK conditions.

To provide this evidence and to support advocacy, the Bone and Joint Monitor Project was initiated as a flagship initiative of the Decade [106]. The project focused on identifying the burden of disease by working with the WHO and the GBD study group. Concurrently, it considered what could be achieved through the implementation of current evidence, what was being achieved, where were the gaps and how can they could be closed (Fig. 3). All activities to provide the evidence for advocacy were undertaken in a collaborative way, bringing together experts and organisations from the wider MSK health community so there was a shared understanding of the problems and solutions and a common narrative. The work stream is ongoing.

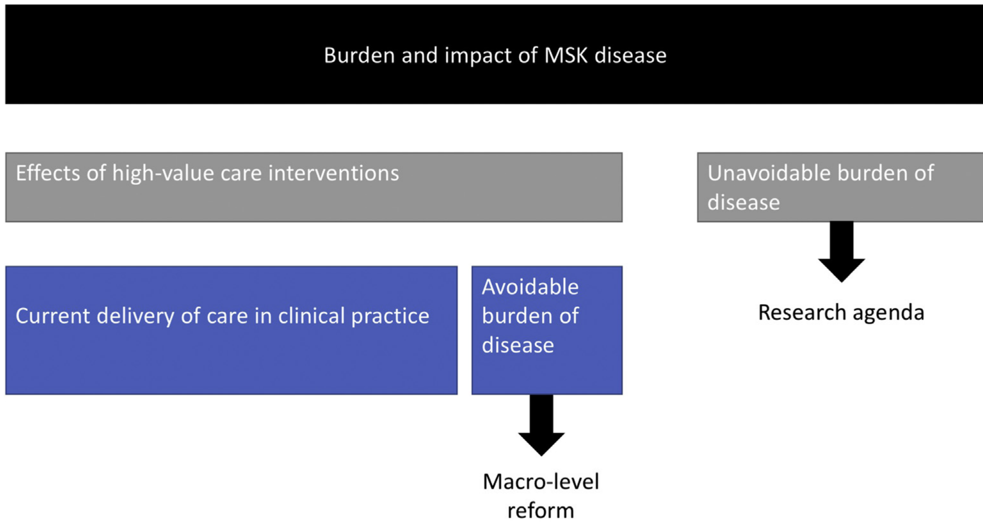

Fig. 3. The burden and impact of disease and what cannot be achieved with existing high-value care makes clear the priority research agenda. What is not being achieved in routine practice makes clear the avoidable burden that can be reduced with the better application of existing interventions with more priority and resources; i.e. macro-level reform. Figure adapted from Woolf [106] and reproduced with permission from The Journal of Rheumatology Publishing Company Ltd (permission licence 20–0054).

A major step in promoting global attention to MSK health was recognising at the start of the Decade that the burden of MSK disorders on individuals and society needed to be better characterised and communicated. Critical promotion was achieved through collaboration with the WHO and the GBD study and working with experts in all diseases across the globe. To ensure wide relevance, this has included all disorders that can affect MSK health. From a conviction of the unrecognised burden, this coalition has provided independent evidence that MSK conditions are the greatest cause of disability in most parts of the world, which is influencing priorities at the policy level [54]. This theme of work has continued since the Decade concluded in 2010 through a range of global initiatives in addition to the ongoing activities of G-MUSC; for example through the Lancet Series on Low Back Pain [65], dedicated reports on MSK burden of disease [55,107–113,137] and advocacy initiatives from international organisations such as the Fragility Fracture Network [114], International Osteoporosis Foundation [115] and the International Association for the Study of Pain.

Future priorities

1. Evolve a robust and consistent web of evidence concerning the costs to society from MSK health conditions in terms of health and social care and lost productivity. While summative health estimates are important to measure relative disease burden and set priorities, measuring and communicating the economic impact is necessary to achieve greater investment in MSK health. MSK conditions are amongst the greatest causes of work loss through absenteeism and presenteeism as most work-related activities are dependent on good MSK function. With ageing populations and extended working lives in many countries, these costs will grow significantly unless more is done to prevent and control MSK conditions. The increasing magnitude of cost related to lost productivity has resulted in greater priority for MSK health in countries where the state bears a large part of the cost of people unable to work, such as in the United Kingdom (UK) where policies are being developed to address this [116].
2. Address misconceptions about MSK health. The barriers to prioritising MSK health are the inaccurate concepts that MSK conditions are inevitable consequences of ageing or of certain occupations and that little can be done to prevent or treat them. Communicating evidence about high-value

interventions that health systems and services can implement, including disinvestment in care that is ineffective remains important. An early project of the Bone and Joint Decade was the European Action Towards Better Musculoskeletal Health' [117]. This project developed a common policy to prevent and control a spectrum of MSK conditions, reviewing the evidence base and identifying what actions the public, people with MSK conditions, clinicians and policy makers could take. Simple messages were developed for the whole population, for those at risk, for those with early disease and for those with established conditions. These messages were elaborated with more specific recommendations for the different MSK conditions to meet all stakeholders' needs. Cost-effective health interventions for MSK conditions were also developed for LMICs as part of the Disease Control Priorities in Developing Countries' report – an initiative of the World Bank, WHO and National Institutes of Health [118].

3. Support health systems to deliver high value care. An ongoing challenge is that guidelines and recommendations often do not get implemented in practice. The "European Action Towards Better Musculoskeletal Health" project suggested ways to improve implementation. Models of Care for MSK conditions have and continue to influence health system governance and service delivery for MSK conditions [10,23] and a framework to support development, implementation and evaluation of Models of Care has been created and globally supported [119]. Standards of care for various MSK conditions have also been developed to support consistent delivery of high-value care [120–123]. National strategies have been developed to prioritise MSK health, most recently in Australia [85–87] and England [88]. Box 3 provides an overview of the approach taken by Public Health England in this regard.

The approach of the Bone and Joint Decade and subsequently of G-MUSC in supporting collective and incremental action has enabled the MSK health community to define the problem and identify jointly agreed solutions, with efforts and outcomes focused mainly at the micro and meso levels. The emergence and acceptance of Models of Care have been instrumental in influencing reform at the system level. A continued effort towards influencing policy makers at the national and global levels through health system strengthening approaches is essential [7,50].

Positioning the case (external framing) and coalition building

Resonance with the MSK health community

To influence policy makers, there is a need for them to be empathetic to the importance of MSK health through evidence or personal experience. There is also a need to identify what issues are relevant and important to them and how prioritising MSK health will enable them to achieve their goals, such as reducing work absenteeism or increasing physical activity. Supporting policy makers to explicitly integrate MSK health into policies for NCDs more generally remains an important priority [63]. To further strengthen the case for action, there is a need to identify, engage and develop partnerships with stakeholders/alliances external to health where there is a potential benefit of improving MSK outcomes, such as manufacturing, construction, logistics and other sectors where MSK function is essential for people to remain in work.

Actions in addressing the challenge

Action on external framing has been pursued since the launch of the Decade and increasingly since the transition of the Decade to G-MUSC, with a range of successful cross-sectoral partnerships established.

While health policy makers are the obvious primary external stakeholders to influence, there are competing priorities with health conditions which have a higher mortality burden, are part of the growing burden of diseases associated with unhealthy lifestyles, such as diabetes and heart disease, or which garner a lot of public support, such as mental health and dementia. The necessary attention to, and resourcing for the COVID-19 pandemic will undoubtedly have an impact on health services for people with MSK conditions. The evidence of the burden of MSK conditions supported by evidence-based policies that support high-value care which will prevent MSK problems has gained traction.

Box 3
Developing a whole system collaborative and partnership to prevent musculoskeletal health conditions and improve musculoskeletal health across the life course in England.

This case study summarises the experience in England of developing and implementing a public health approach to the prevention of and intervention in, MSK conditions across the life course. It highlights key elements of the approach, the essential role of galvanising and supporting partnerships, achievements and future aspirations. A more detailed commentary has been published previously [124].

Policy Context

England, like many other countries, does not have a specific Government policy purely focussed on MSK health, despite MSK conditions imposing the greatest burden of disease, with lower back and neck pain the leading causes of disability in England from 1990 to 2017 [125]. The estimated MSK prevalence of chronic back pain in adults in 2017/18 was 16.9% [126]. A systematic review of the prevalence of chronic pain in the UK indicates a pooled prevalence of 43% (the majority of which is likely from MSK aetiology), with evidence of an increasing prevalence over time [127]. MSK conditions are costly for the UK health services, with over 20% of the UK population consulting their general practitioner about an MSK condition each year and the National Health Service (NHS) spending an estimated £5 billion each year on treating them [128]. Further, approximately 28.2 million working days were lost in 2019 as a result of an MSK condition [128]. In the last couple of years, there has been a recognition of the importance of maintaining good MSK health in Work and Health Policy – Prevention Green Paper-Advancing Our Health [129], the NHS 10 Year Long Term Plan [130], Government's Ageing Society Grand Challenge [131] and the development of Public Health England's 5 Year MSK Strategic Framework [88].

Driving system change for MSK health: lessons from England's experience

Coalition building

A whole system approach that starts with the development of robust partnerships and collaborations to deliver a *shared vision for* population health is essential. Public Health England provided system leadership, bringing together a coalition of willing and committed stakeholders from across national and local Governments, the NHS, third sector, professional bodies, and Arthritis and Musculoskeletal Alliance to "*Improve the musculoskeletal health of the population in England across the life-course,* supporting *people to live with good lifelong MSK health and freedom from pain and disability*" [132].

Partnerships inevitably bring with them new and diverse capability, capacity and additional resources to support the vision to be realised. This is sustained through continuous joint prioritisation, candid conversations and monitoring of impact.

Government Policy and Plans

After a gradual build-up of five years of activity based on incremental action, in 2019 the UK Government published a number of documents that supported the case for increased attention to the MSK health of the population:

- The Green Paper Advancing our health: prevention in the 2020s' [129], which offers the next opportunity to further galvanise a shift of focus from cure to prevention.
- Health is everyone's business: proposals to reduce ill health-related job loss [132].

- The NHS 10 Year Plan, which makes reference to workforce capability to implement frontline MSK support, the scaling up of evidence-based interventions, such as ESCAPE pain, and digital platforms to deliver information to patients [130].
- Ageing Society Grand Challenge, with a mission to *"ensure that people can enjoy at least 5 extra healthy, independent years of life by 2035"* [131].

Taken together with the Secretary of State's prevention vision [129], prevention of MSK conditions and other NCDs is now seen as everyone's responsibility.

Integration with other health improvement policy areas

Major amenable risk factors of MSK conditions are shared with many other NCDs and therefore, Public Health England has taken the approach of embedding MSK health in its work across multiple teams, such as the Mental Health, Obesity, Life course, Inequalities, Physical Activity, Healthy Places, Work and Health.

Surveillance and Metrics

Data and surveillance must be used to understand MSK conditions in the population, monitor them over time and continuously drive improvement in health for people with MSK conditions. Public Health England works in partnership with Versus Arthritis and other organisations to increase the quality and availability of data concerning MSK conditions and the health and care services needed to address them [126].

Future Aspirations

The 5 Year Strategic MSK prevention framework [88], along with plans to design a holistic adult health check in 2021 [129] that may incorporate a functional capability element, followed up with tailored lifestyle advice and interventions will support population MSK health in England. On the horizon are innovative ways of providing personalised care and health interventions using Artificial Intelligence and wearable devices.

** Public Health England (PHE) is an executive agency of the Department of Health and Social Care. PHE provides government local government, the NHS, Parliament, industry and the public with evidence-based, professional, scientific expertise and support. PHE exists to protect and improve the nation's health and wellbeing and reduce health inequalities.

System-wide implementation of osteoarthritis care programmes and secondary fracture prevention are notable examples [84,133].

The policy agenda in global health may differ from national priorities and this needs to be monitored and influenced to arrive at a consistent approach in external framing. The MSK health community, largely through the Bone and Joint Decade and subsequently G-MUSC, has positioned MSK health in the global agenda of ageing, pain management, rehabilitation, road safety and care of the injured, interprofessional care, workplace health, workforce development and other areas where there is a recognised problem that the MSK health community can help solve. The relevance of addressing MSK health is not often spontaneously recognised by policy makers and the non-MSK clinical community but these opportunities have been proactively identified and the case framed to show relevance. For example, G-MUSC has worked with the WHO on the WHO Strategy for Noncommunicable Diseases; WHO Europe Action Plan for NCDs; the WHO Decade of Action for Road Safety; WHO Global Alliance for the Care of the Injured; WHO Partners working in Disability and Rehabilitation; WHO Global Disability Action Plan 2014–2021; WHO ICD revision through MSK Topic Advisory Group; WHO World Report on Ageing and Health; WHO Global Strategy and Action Plan on Ageing and Health including the WHO Integrated Care of Older People approach, and the WHO Rehabilitation 2030 Agenda.

Future priorities

1. Articulate evidence-based arguments that clearly demonstrate how attention to MSK health can achieve objectives of increasing healthy life years and control of other NCDs through enabling mobility and physical activity. Here, building coalitions with other disease groups will be essential.
2. Shift global health targets to also address morbidity. The WHO approach to prevention and management of NCDs prioritises those conditions associated with high mortality and common risk factors, consistent with SDG 3 [82]. This is not intended to de-prioritise other NCDs, such as MSK health, but in reality Member States will respond to the given priorities and do not therefore engage the wider community, leaving out the importance of MSK health from their discussions and plans. The priority of mental health, for example, often inadequately considers the bidirectional association between MSK pain and mental health, leading to non-integrated solutions.
3. Develop economic arguments for health to be seen as an investment into a productive workforce and a healthy independent ageing population. Finance and employment ministries need to be aware of the costs of poor MSK health and the return on investment of optimising it. This framing of the case has supported making MSK health a priority in England (Box 3).

Governance

Addressing the challenge

A current challenge is to know how best to work together as an MSK health community, so we can take full advantage of the current and emerging opportunities to influence global and national health policy. Policy makers prefer a consistent message, and the MSK health community needs a way of developing and communicating a collective position that is supported by robust evidence. However, the implementation of such positions will most likely mean different things for the different stakeholders. There needs to be clarity as to:

- what is best done by G-MUSC;
- what is best done by individual stakeholders with the support of other stakeholders through G-MUSC, and
- what is done by single stakeholder groups with an awareness by others.

The Bone and Joint Decade 2000–2010 initiative subsequently G-MUSC has brought together champions for change from the MSK health community who have led the campaign for MSK health as a global priority, identifying opportunities and co-ordinating responses, working as committed individuals not formally representing organisations but coming from the wide spectrum of MSK stakeholders and understanding issues of high, middle- and low-income countries. Importantly, the programme of activities has been undertaken collaboratively with the wider MSK health community, with the key partners being national networks and the major professional, scientific and patient organisations to ensure a person-centred and interprofessional approach.

Future priorities

1. Now that the burden of disease and importance of MSK health is clearly recognised, with many national and sub-national governments developing action plans, it is timely to consider changing the way the global campaign and global MSK network is governed.
2. The global MSK health community needs to decide its future and governance model to work collaboratively. Different governance models have been described above and the power of social media to connect individuals, organisations and networks should be leveraged.

Summary and priorities for research, practice and policy

The burden of disease of MSK health is well established and likely to increase, along with other NCDs. Health policy is a critical component of health system strengthening to respond to the burden of MSK diseases and persistent pain. The priorities for health systems in the 21st century have evolved from the 20th century, particularly in the context of challenges associated with ageing and NCDs and also, currently, the COVID19 pandemic. In this context, there are opportunities and challenges to optimise global and national health policy responses to address MSK health and persistent pain and improve outcomes for people at risk of or living with MSK health impairment. The 2030 Sustainable Development Agenda represents an important contextual backdrop to health policy evolution in the next decade and this must be considered in the advocacy for MSK health. Unified and collective action from the global MSK network will be important in influencing system-level change at scale. Reflecting on the successes of other global networks, the achievements of the 2000–2010 Bone and Joint Decade and unfinished business from that period should also help to inform the priorities, actions and governance of the global MSK health community in the next decade. Recommended foci for research practice and policy are outlined in Box 4.

Box 4
Research Agenda and Practice Points

- With the necessary and dramatic shift of health priorities and resources to acute health care in the context of the COVID-19 global pandemic, the MSK health community needs to ensure it is well placed to i) argue the case for the importance of MSK health for economic recovery (external framing); and ii) develop policies and service strategies to ensure people with MSK health conditions can access care in circumstances where services are no longer provided due to the pandemic and post-pandemic.
- Continued efforts to influence global health policy are needed in order to improve service delivery for MSK health care, particularly in LMICs. Health policy foci around ageing and prevention and management of NCDs present opportunities to positively influence MSK health care. In particular, MSK health should form a component of essential care packages in UHC arrangements [64].
- Communicating the relevance and importance of MSK health to global health policy and system reform efforts, such as the Declaration of Astana, Rehabilitation 2030 and subsequent iterations of the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases, will be important.
- Integrated care approaches for NCDs should explicitly include optimisation of MSK health, particularly in the context of multimorbidity. As national health policies evolve in response to changing health needs, particularly for NCDs, MSK health should be explicitly included as an equal priority with other NCDs and in the context of multimorbidity and integrated care pathways [63].
- Global health targets must evolve beyond just mortality reduction from specific NCDs to also include arresting the trajectory of global disability, largely attributed to MSK health and persistent pain conditions.
- Harnessing the potential of the global MSK health network by effectively confronting problem definition, positioning, coalition-building and governance will enable positive action in global health policy for MSK health.
- Continued efforts to measure the economic impacts of MSK health impairment on health systems (e.g. proportion of health expendutire) and society (e.g. work productivity) remain important while MSK clinical trials networks have a critical role in establishing evidence for interventions and implementation feasibility. Health policy and systems research similarly has a critical role in continually evaluating options for health system strengthening for MSK health.

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Declaration of Competing Interest

The authors declare no conflicts of interest.

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