

SPINE20

Recommendations to the G20 Group



**“One Earth, One Family, One Future
WITHOUT Spine DISABILITY”**

Contents

Executive Summary	2
Introduction	4
Method to make recommendations 2023	5
Recommendations	8
Spine disability and poverty Investments in health systems	8
Healthy spine and life Impact	9
Digital spine care Transformation	12
Economy Standardization	14
Patient's safety Culture of safety	16
Social determinants Social justice	17
Implementation of Recommendation	19
Tables	23
References	32
Contributors	36

Executive Summary

Spine disorders, such as low back pain, are a leading cause of disability in most countries. The need to optimize health systems and address the profound and increasing burden of disability associated with spine pain is well described, yet few policy changes have been achieved. Addressing spine disorders and disabilities aligns with multiple Sustainable Development Goals, including the promotion of good health and well-being, quality education, decent work and economic growth, reduced inequalities, sustainable cities and communities, as well as peace, justice, and strong institutions.

In 2019, SPINE20, an evidence-based advocacy group dedicated to raising global awareness about spine disorders, was established. Currently, 37 national and international societies are part of SPINE20. Since its formation, SPINE20 through the year develops evidence-based policy recommendations for G20 governments that can contribute to the progress of achieving the Sustainable Development Goals. These are finalised in the Annual Summit held in the country hosting G20. This year recommendations of Spine20 to G20 countries are as under.

Spine20 calls on the G20 countries to:

1. Establish, prioritize, and implement accessible National Spine Care Programs to improve spine care and health outcomes.
2. Eliminate structural barriers to accessing timely rehabilitation for spinal disorders to reduce poverty.
3. Implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice and measure outcomes.
4. Monitor and reduce safety lapses in primary care including missed diagnoses of serious spine pathologies and risk factors for spinal disability and chronicity.
5. Develop, implement and evaluate standardization processes for spine care delivery systems tailored to individual and population health needs.
6. Ensure accessible and affordable quality care to persons with spine disorders, injuries, and related disabilities throughout the lifespan.
7. Promote and facilitate healthy lifestyle choices (including physical activity, nutrition, smoking cessation) to improve spine wellness and health.

SPINE20 Proposed Recommendations to G20 New Delhi, 2023

RECOMMENDATIONS

SPINE20 calls on the G20 countries to eliminate structural barriers to accessing timely rehabilitation for spinal disorders to reduce poverty.

SPINE20 calls on the G20 countries to promote and facilitate healthy lifestyle choices (including physical activity, nutrition, smoking cessation) to improve spine wellness and health.

SPINE20 calls on G20 countries to implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice and measure outcomes.

SPINE20 calls on G20 countries to develop, implement and evaluate standardization processes for spine care delivery systems tailored to individual and population health needs.

SPINE20 calls on the G20 countries to monitor and reduce safety lapses in primary care including missed diagnoses of serious spine pathologies and risk factors for spinal disability and chronicity.

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Spine disability and poverty
Investments in health systems

Healthy spine and life
Impact

Digital spine care
Transformation

Economy
Standardization

Patient's safety
Culture of safety

Social determinants
Social justice

Implementation of recommendation

Keywords

Prioritize, implement, evaluate recommendations, Equitable spine care, Access to timely rehabilitation, Lifestyle for Environment (LiFE), Digital transformation, Poverty, Standardization for economic care, Safety in primary care, social determinants, accessibility, sustainable development, National Spinal Care program

Introduction

As the 2030 Agenda for Sustainable Development reaches its midpoint, world leaders prepare for a comprehensive review of the progress made on achieving the 17 Sustainable Development Goals (SDGs) put forth by the United Nations (UN).¹ However, the world currently faces multiple interconnected crises that may delay the advancement of SDG, marking a relapse from the progress made in previous decades. Therefore, it is imperative for world leaders to take urgent action. Addressing spine disorders and disabilities aligns with multiple SDGs, including the promotion of good health and well-being, quality education, decent work and economic growth, reduced inequalities, sustainable cities and communities, as well as peace, justice, and strong institutions. The present era of SDGs provides a platform to raise awareness and prioritize the need to improve spine care, given the significant impact on individuals, health services, society, and the global economy.

Spine disorders, such as low back pain, represent a leading cause of disability in most countries.² The need to optimize health systems and address the profound and increasing burden of disability associated with spine pain is well described, yet few policy changes have been achieved. There is a lack of political engagement and will to design initiatives tailored to decrease this burden.^{3,4}

In 2019, SPINE20, an evidence-based advocacy group dedicated to raising global awareness about spine disorders, was established through the collaboration of four prominent spine care and non-governmental professional organizations: EUROSPINE, the North American Spine Society, the German Spine Society, and the Saudi Spine Society. Currently, 31 societies support the activities of SPINE20 (Table 1). Since its formation, SPINE20 has convened annual meetings with leading international experts to develop evidence-based policy recommendations for G20 governments. These recommendations aim to alleviate the burden of spine disorders, spinal injuries, and related disabilities, and contribute to the progress of achieving the SDG.⁵ These recommendations need to be tailored to the cultural and economic reality of each country, aligning with the capabilities to implement the recommendations.⁵

The primary focus of the initial recommendations made by SPINE20 centered on raising awareness of the substantial impact of spinal disorders worldwide.

These recommendations sought to actively engage experts, organizations, and governing bodies in identifying strategies to alleviate the burden and misery of spine disorders.³ In the subsequent year, SPINE20 developed the second set of recommendations to emphasize "Spinal disability," "Value-based care," "Access to care," "Research and innovation," and "Aging spine." Recently, SPINE20 emphasized that "Implementation and outcomes" and "Building capacity" were key themes. It is imperative to establish global outcome measures to monitor progress and establish benchmarks for improving spine care within governmental frameworks. Building capacity entails establishing a sustainable environment that reduces disability and promotes spine health.⁶ In the third year, SPINE20 expanded its focus to include seven principal domains, consistent with previous years. Particular emphasis, however, was placed on the subdomains of Diversity, Patient safety, Aging, Rehabilitation of spinal cord injury, Research priorities, Economy, and Determinants of health.⁵ (Table 2) The purpose of this paper is to report the fourth series of recommendations developed by the SPINE20 advocacy group with the overarching theme of **"One Earth, One Family, One Future WITHOUT Spine DISABILITY."**

Method to make recommendations - 2023

Authors

SPINE20 'Scientific task force' members and 'Recommendation and Publication taskforce' members from 15 countries coordinated the development of recommendations. Both taskforces involved multidisciplinary panels including surgeons, rehabilitation clinicians, researchers, epidemiologists, primary care physicians, education professionals, and strategic health leaders.

Domains

The SPINE20 recommendations were based on domains that were designed to include the themes selected by consensus process in previous years. Subdomains were designed to focus the activities within each domain. All domains were reviewed and updated between January 7 and 23, 2023 by the SPINE20 scientific task force composed of international, multi-professional members. This year we accepted 6 new domain candidates from the panels.

Selection of Domains

We held an online Delphi consensus meeting on January 30, 2023, to select the domains.⁷ Two facilitators (KT from Japan and PC from Canada) facilitated the meeting, and 29 scientific taskforce members participated in the consensus survey. The Delphi method was designed to select six of the 12 domains using an on-line voting software (Forms, Microsoft, Redmond, WA).

For the first round of voting, participants scored each domain from 1 to 10 with 1 the lowest and 10 the highest score. The top 10 domains with the highest mean scores were brought to the next round, where participants were asked to agree or disagree with each specific domain. The first six domains reaching consensus were selected, (defined as agreement of $\geq 75\%$, over a maximum of four rounds).

The key domains selected for the SPINE20 2023 recommendations were:

- Spinal disability and poverty (94.1% agreement in 1st vote),
- Healthy spine and Lifestyle for Environment (LiFE) (88.2% agreement in vote),
- Digital spine care (76.4% agreement in 1st vote),
- Economy of spine care (76.4% agreement in 1st vote),
- Patient safety (87.5% agreement in 3rd vote),
- Social determinants (81.3% agreement in 4th vote).

Each year, SPINE20 adopts one additional domain proposed by the host of the SPINE20 annual meeting. This year the host, the Association of Spine Surgeons of India, proposed a domain focused on “Implementation” (Table 3).

Development of recommendations

Each domain elected three writers who were assigned by the SPINE20 scientific task force to draft the recommendations. Writers were allowed to select one sub-domain. The recommendations were drafted by:

- Spinal disability and poverty: PC (Canada), CR (Italy), RM (India)
- Healthy spine and LiFE: BD (Indonesia), DL (USA), RH (Indonesia)
- Digital spine care: GC (Italy), LR (UK), HA (Saudi Arabia)
- Economy of spine care: SA (Saudi Arabia), FK (Germany), CM (Brazil)
- Patient safety: CT (Brazil), MA (Germany), BG (India)
- Social determinants: WS (USA), SB (India), SW (India)
- Implementation of Recommendation: HC (India), SK (Japan), AB (Canada)

Writers set the subdomain which specified the detailed direction of their respective domain and developed the recommendations with multi-professional experts based on their domain/subdomain. Each group of writers submitted 2-3 candidate recommendations for each domain. The candidate recommendations were discussed and refined at the Scientific Task Force through weekly online meetings between February 6 and June 5, 2023.

Selection of recommendations

An online consensus meeting was held on June 12, 2023, using the real-time Delphi method to select the final recommendations.

Two facilitators (KT from Japan and PP from Portugal) facilitated the meeting, and 49 international, multidisciplinary experts from 29 countries participated in the meeting. Recommendations were selected using an online voting software (Forms, Microsoft, Redmond, WA). A week prior to the Delphi consensus meeting, participants scored each recommendation (from 1 to 10) to provide an initial prioritization by the group. Recommendations reaching a level of agreement $\geq 75\%$ were kept and the next round of voting was carried out, with a maximum of 5 rounds of voting per recommendation. Recommendations that did not reach the 75% level of agreement after 5 rounds were rejected. All candidates of recommendation statements and the voting results are shown in Tables 4 and 5.

Publication of recommendations

Recommendation statements and supporting rationales were published on the SPINE20 website (<https://spine20.org>) 14 days before the SPINE20 summit which took place on August 10-11, 2023, in New Delhi, India. Public comments were invited via website and if needed, the recommendations were modified accordingly. The recommendations were discussed at the SPINE20 Summit 2023, allowing Summit participants to debate the recommendations and suggest modifications.

A. Spinal disability and poverty | Investments in health systems

Recommendation

SPINE20 calls on the G20 countries to eliminate structural barriers to accessing timely rehabilitation for spinal disorders to reduce poverty.

Relevance to United Nations SDGs

SDG1-No Poverty

SDG3-Good Health and Well-being

Background

Persons with disability are more likely to live in poverty and experience barriers to accessing rehabilitation than people without disability.⁸⁻¹⁰ This is particularly relevant to individuals who experience disability because of low back pain.^{11,12} In 2021, an estimated 619 million people lived with low back pain making it the main cause of disability worldwide.² However, in most countries, insufficient rehabilitation services are available to persons with low back pain. In fact, low back pain is a leading reason for unmet rehabilitation needs in G20 nations.¹¹ Inadequate provision of quality spine rehabilitation is pervasive worldwide and results in additional expenditures that further increase the financial hardship of persons with disability.

Problem

People who live in poverty face structural barriers in accessing adequate spine rehabilitation.¹¹ These barriers include stigmatization, marginalization, social isolation, absence of adequate transportation, financial constraints, lack of a trained workforce, lack of political prioritization for rehabilitation, and the absence of integration of rehabilitation in universal health systems.^{13,14} Additionally, few public health and healthcare policies are in place to remove these barriers. This is a significant global health problem because the burden of disability related to back pain is increasing rapidly, especially in low- and middle-income countries.² Therefore, it is imperative to invest in health systems integrated within universal coverage and supported through sustainable funding from government and non-government resources.

Potential solutions

SPINE20 calls on the G20 nations to eliminate structural barriers to accessing timely rehabilitation for back pain as a means to reducing poverty.



Persons with disability are more likely to live in poverty and experience barriers to accessing rehabilitation than people without disability



People who live in poverty face structural barriers in accessing adequate spine rehabilitation



The World Health Organization's (WHO) *Rehabilitation 2030 Call for Action* offers practical solutions to this problem through the conduct of 10 activities.¹⁵ These include:

1. Creating strong leadership and political support for rehabilitation at regional, national, and global levels.
2. Strengthening rehabilitation planning and implementation at national and regional levels, including within emergency preparedness and response.
3. Improving integration of rehabilitation into the health sector and strengthening intersectoral links to meet population needs more effectively and efficiently.
4. Incorporating rehabilitation into universal health coverage.
5. Building comprehensive rehabilitation service delivery models to progressively achieve equitable access to quality services, including assistive products, for the entire population, including those in urban and rural/remote areas.
6. Developing a strong, multidisciplinary rehabilitation workforce, suitable for each country's context, and ensuring rehabilitation as a topic is included in all health workforce education.
7. Expanding financing for rehabilitation through appropriate mechanisms.
8. Collecting information relevant to rehabilitation to enhance health information systems, including system-level rehabilitation data and information on functioning using the International Classification of Functioning, Disability and Health (ICF).
9. Building research capacity and expanding the availability of quality evidence for rehabilitation.
10. Establishing and strengthening networks and partnerships in rehabilitation, particularly between low-, middle-, and high-income countries.

The implementation of these activities is described in detail in *Rehabilitation in Health Systems: Guide for Action*.¹⁶

B. Healthy spine and life | Impact

Recommendation

SPINE20 calls on the G20 countries to promote and facilitate healthy lifestyle choices (including physical activity, nutrition, smoking cessation) to improve spine wellness and health.

Relevance to United Nations SDGs

SDG3-Good Health and Well-being
SDG13-Climate action

Background

Obesity, inactivity, and smoking are major factors affecting spine health and are the greatest behavioral factors contributing to premature death.



Obesity, inactivity, and smoking are major factors affecting spine health



Exploring this synergistic relationship and understanding what changes need to be made are key to protecting both the environment and our spine. Implementing related solutions will help promote good health and well-being while decreasing greenhouse gas emissions to help preserve our climate and the environment. The world population has grown tremendously over the past 20 years, from the six-billion mark in 1999 to over eight-billion people in November 2022.¹⁷ If only 13% of the global population adopted lifestyle behavior changes, carbon emissions would be reduced by 20%.^{18,19} Active steps through multiple means must be taken to preserve our overall well-being, our spine health, and our environment.

Problem

Reducing atmospheric CO² concentration is critical. Not only is CO² in the environment now at its highest levels in human history,¹⁹ one would need to go beyond the beginning of human history — to the Pliocene Epoch (between 4.1 to 4.5 million years ago) — to find a time when Earth's atmosphere held a similar amount of carbon.²⁰ Walking or cycling to work or school can have a positive effect on the environment and on spine health. Reducing carbon dioxide emissions through a reduction in driving and an increase in active transportation would exceed the reduction in greenhouse-gas emissions that could be expected from the increased use of lower emission motor vehicles.²¹ Exercise also helps to reduce the physiologic toxins produced through muscle contraction and relaxation, which, if left to accumulate, can cause back muscle stiffness and decreased flexibility.²² This is important because the trunk, core, and lower back muscles play a vital role in maintaining the stability and movement of the lower back and keeping the spine healthy.²³

In 2015, excess body weight was estimated to affect 2 billion people worldwide, and accounted for approximately 4 million deaths and 120 million disability-adjusted life-years.²⁴ The Global Burden of Disease data suggest that, by 2025, nearly 268 million children and adolescents in 200 countries will be overweight and 124 million will be obese. Overeating and food wastage are common denominators in people who are obese. It is estimated that wasted food by one person can feed up to 3 people annually.^{18,19} By eating smaller food portions and finishing the food on your plate, one can avoid 74 kgs of food waste per year while reducing the weight and decreasing the load on the spine.²⁵

The WHO reported that the industry's carbon footprint from production, processing, and transporting tobacco is equivalent to one-fifth of the CO² produced by the commercial airline industry each year, further contributing to global warming.²⁶ Overall, tobacco farming and curing are one of the most environmentally destructive agricultural practices in low- and middle-income countries.^{27,28}



Walking or cycling to work or school can have a positive effect on the environment and on spine health.



Tobacco farming and curing are one of the most environmentally destructive agricultural practices



The cost of cleaning up littered tobacco in India alone is equivalent to \$766 million US dollars per year.²⁹ Further, numerous studies show a link between cigarette smoking and back pain.³⁰

The effects of nicotine on the vascular system, as well as the cellular damage caused by smoke toxins, lead to a breakdown of the intervertebral disc leading to degenerative disc disease. Smoking also increases the risk for osteoporosis, a bone-thinning disease that weakens bones over time and can lead to disabling back pain from compression fractures.³¹

Potential solutions

SPINE20 calls on the G20 to raise awareness of how our everyday lifestyle decisions about wellness, physical activity, smoking, and nutrition globally impact the world's resources and individually affect our spine health. In 2008, the WHO described a dominant holistic perspective of wellness as that which includes the absence of illness and is a state of well-being. Thus, with wellness, an individual is seen from multiple dimensions to create a holistic perspective. As the understanding of wellness began to shift from programs and circumstances designed to alleviate illness or increase health risks, wellness dimensions have been highlighted with wellness related to quality of life and life satisfaction. All dimensions of wellness need to be examined including Physical Wellness, Emotional/Psychological Wellness, Social Wellness, Intellectual /Cognitive Wellness, Occupational Wellness, Environmental Wellness, Economic Wellness, Cultural Wellness, and Climate Wellness. These aspects of wellness need to be incorporated to protect our overall health, our spine health, and our environment.

In summary, changes to our fundamental values, philosophies, and principles need to be put in place to live a healthy life and protect our spine while curbing greenhouse emissions. This will require coordinated and sustained actions across many sectors, including but not limited to healthcare, agriculture, environment, finance, transportation, and economic development, from local to global levels.



**Changes to our
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C. Digital spine care | Transformation

Recommendation

SPINE20 calls on G20 countries to implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice and measure outcomes.

Relevance to United Nations SDGs

SDG3-Good health & well-being
SDG10-Reduced inequalities

Background

Digitization has revolutionized the field of spine health, offering improvements and efficiencies in diagnostics, treatment, evaluation, and delivery of spine care. In diagnostics, the integration of artificial intelligence (AI) with imaging technologies enhances image definition and unveils intricate structures and details that might otherwise remain unseen, although further exploration is warranted.³²

Digitization brings benefits to patients experiencing spinal symptoms through tools such as wearable devices and mobile applications that facilitate symptom monitoring, record-keeping, and access to self-management support.^{33,34} These tools optimize treatment outcomes by empowering patients to actively participate in their own healthcare.

Telehealth advances have the potential to enhance access to spine specialists, decreasing the need for patients to physically travel for consultation visits. This allows evidence-based interventions to be delivered remotely via cost-effective and commonly used devices like smartphones or internet-connected devices. This innovative approach mitigates issues related to geographical distance, healthcare attendance, work absence, and reduced productivity. Notably, during the COVID-19 pandemic, remote rehabilitation programs using smartphones and devices have demonstrated promise.^{35,36}

In addition, digitization has applications in the management of spinal deformities, where computer-aided design programs facilitate the creation of custom-made corsets.³⁷ Furthermore, cutting-edge research has shown that implanting electronic chips in nervous structures upstream of a spinal cord injury enables the recovery of voluntary limb movements, upright posture maintenance, and even the ability to walk short distances.³⁸



Telehealth advances have the potential to enhance access to spine specialists, decreasing the need for patients to physically travel for consultation visits



In the field of surgery, digitization enables the generation of three-dimensional models of patients' spines, aiding surgeons in surgical planning, visualization, and precise navigation.³⁹ The use of instrumentation, augmented reality, and robotics in the operating room expands the scope and complexity of minimally invasive procedures. This has important implications for cost-effectiveness and patient safety, particularly among an aging population with comorbidities.³⁹

Digitization also facilitates the evaluation of clinical practice through the extensive use of internationally shared digital registries of surgical records. These registries enhance the selection of appropriate, safe, and cost-effective surgical procedures.⁴⁰

Moreover, digitization plays a vital role in clinician training. For instance, Virtual Reality can be employed to facilitate the dissemination of advanced evidence-based knowledge via the internet, bridging the gap between international centers of excellence and hospitals in low-income countries.⁴¹

Problem

Low back pain (LBP) is a highly prevalent and burdensome global health condition, affecting more than half a billion individuals worldwide, with a lifetime prevalence of up to 84%.^{2,42-44} The digitization of spine care has been shown to offer substantial improvements and efficiencies across many aspects.⁴⁵ However, there are limited recommendations in treatment guidelines promoting or supporting digital spine health.^{46,47} Although the evidence is growing in favor of digital spine health, there is relatively little evidence evaluating the outcomes and cost-effectiveness of these interventions worldwide.

Potential solutions

SPINE20 calls upon G20 countries to implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice, and measure outcomes. The primary objective of this transformative approach is to prioritize patient empowerment and preventative care. To achieve these goals, it is crucial for decision-makers to prioritize research funding, invest in capacity-building initiatives, and establish the necessary infrastructure to support the digital transformation of spine health.



**There are limited
recommendations in
treatment guidelines
promoting or supporting
digital spine health**



D. Economy | Standardization

Recommendation

SPINE20 calls on G20 countries to develop, implement and evaluate standardization processes for spine care delivery systems tailored to individual and population health needs.

Relevance to United Nations SDGs

SDG3-Good Health and Well-being
SDG10-Reduced Inequalities

Background

Standardization has been defined formally as “the process of developing, agreeing upon and implementing uniform technical specifications, criteria, methods, processes, designs, or practices that can increase compatibility, interoperability, safety, repeatability and quality.”⁴⁸ Timmermans and Epstein usefully distinguish between four sub-types of standards that underpin standardization processes: design standards, an example of which is the promulgation of standardized clinical practice guidelines; terminological standards, such as the International Classification of Disease; performance standards, which set outcome specifications for service delivery; and procedural standards that specify how processes are to be performed and the steps to be taken.⁴⁹ Standardization, especially in healthcare, helps to decrease variation, minimize the risk of errors, and increase patient safety. It provides guidance during emerging health threats, allows for a more predictable patient experience, and can promote the wider adoption of efficient workflows.⁵⁰ Standardization of uniform healthcare treatment reached its apotheosis in the evidence-based medicine (EBM) movement aiming to reduce variations in practice that had previously been hidden by public deference and a lack of information

The trend, particularly in large healthcare organizations, is toward standardization of clinical policies and care delivery aiming for greater reliability and better outcomes.⁵⁰ Yet standardization has its natural limitations, in particular, due to its inability to account for unforeseen elements in different clinical situations. Where deviations from guidelines for specific cases may be necessary and beneficial, customization and personalization approach could provide a construct to address gaps in knowledge.



Healthcare systems around the world are always challenged with rising costs and variable quality of healthcare provided



Four sub-types of standards that underpin standardization processes: design standard, terminological standards, performance standards, and procedural standards



Customization is the tailoring of standardized treatment and diagnosis to the psychological, social, and cultural dimensions of the patients, while personalization in medicine means the adaptation of treatment to the biological dimensions of the patient's genomic variation. Customization "for specific circumstances" is demanded by both patients and health authorities, propagating for shared decision-making,^{52,53} patient-centeredness,⁵⁴ precision medicine,⁵⁵ and care co-creation.⁵⁶

Determining the optimal point along the continuum between these standardization and customization approaches for any given processes of delivering spine care requires careful consideration and should be a paramount goal of organizational leadership, standard developers, and regulators.⁵⁷

Problem

There is inherent complexity in spine care practice, and this complexity comes from the wide spectrum of spine disorders that may cause back pain, diversity of treatment options, and the multiple professional backgrounds involved, in addition to many other contextual factors. Such complexity will be even more difficult to approach in the absence of adopted standardized and "if needed" monitored customized practice in delivering spine care.

Potential solutions

Healthcare systems around the world are always challenged with rising costs and variable quality of healthcare provided. For this reason, strategies are evolving with a goal of maximizing value for patients by achieving the best outcomes at the lowest cost, while reducing inequalities. Back pain is one of the most challenging areas in any health system economy because of the high medical cost associated with its treatment, and with more than half a billion prevalent cases worldwide, back pain remains the leading cause of YLDs globally.² SPINE20 believes in turning the tide on low back pain in a meaningful way through establishing and amplifying it as a priority on the global health agenda. Ensuring sustainable access to quality spine care would contribute to making the world a better place to live.



Standardization has its natural limitations due to its inability to account for unforeseen elements in different clinical situations




There is inherent complexity in spine care practice



E. Patient's safety | Culture of safety

Recommendation

SPINE20 calls on the G20 countries to monitor and reduce safety lapses in primary care including missed diagnoses of serious spine pathologies and risk factors for spinal disability and chronicity.

Relevance to United Nations SDGs

SDG3-Good Health and well-being

SDG10-Reduced inequalities

Background

Low back pain is associated with 832 per 100,000 years lost to disability (YLDs),² representing an increase of 54% between 1990 and 2015 due to population increase and aging, with the highest increase in low- and middle-income countries.⁵⁸ For the majority of patients with back pain, a specific cause cannot be identified and most will have a predictable self-limited progression to resolution; nevertheless, patients often believe their symptoms are related to a severe and progressive illness, and that imaging and referral to a spine surgeon is imperative.²² It is the role of primary care professionals to deliver appropriate information and foster the necessary changes of beliefs and behaviors to alter the inappropriate care commonly observed in low- and middle-income countries. By definition, patient safety is a framework of organized activities that creates culture, processes, procedures, behaviors, technologies and environments in healthcare that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely, and reduce the impact of harm when it does occur.⁵⁹

Outpatient care accounts for an enormous burden in healthcare systems worldwide. In fact, about half of the global burden of patient harms occur in the primary and ambulatory care settings, with direct costs related to safety lapses accounting for up to 2.5% of the total health expenditure.⁶⁰ The broader economic impact of delayed or wrong diagnosis, and delayed treatment for chronic illness could approach 0.5% of GDP, which represents approximately 5% of health expenditures.⁶¹

In primary care management of back pain, the safety culture may be defined by all actions that might mitigate the risk of transition to chronic pain and persistence of untreated chronic pain, as well as early detection of yellow flags (psychological, emotional, social factors, and risk factors of chronicization) and red flags (indicative of serious spine pathology, such as neurologic causes, tumor, and infection).



In the majority of patients with back pain, a specific cause cannot be identified



Outpatient care accounts for an enormous burden in healthcare systems worldwide



In most low- and middle-income countries, there are no specific guidelines to approach back pain in primary care. For example, even in large countries such as Brazil, the burden of back pain is widely unrecognized, and data are scarce and unreliable. Additionally, there are no specific health policies to tackle the back pain burden, and the financial and economic burden is broadly unknown.

Problem

Recognizing patient safety lapses, such as appreciating the risk of acute to chronic pain conversion and the undetected presence of red and yellow flags in the primary care setting, may be a cost-effective opportunity to help mitigate the enormous economic and public health burden back pain represents worldwide. In most low-income countries, health authorities are not sufficiently aware or committed to mitigating the impacts of back pain on its economy and health services (especially for the poor and most vulnerable populations), evidenced by the absence of reliable statistics (health and social security), well-established protocols and guidelines, educational strategies (for both patients and healthcare professionals), and specific public policies.

Potential solutions

SPINE20 calls on the G20 countries to raise awareness among governments worldwide, particularly in low- and middle-income countries, of the need to urgently assess back pain patient safety lapses in primary care, hereby defined as undetected red flags and unidentified risks of chronicity. To achieve the SDG-3.c, it is key to achieve full and reliable safety coverage for patients with back pain in primary care to develop and train healthcare teams to deliver appropriate content, foster self-care and critical reasoning, and to educate patients about coping with back pain. This coverage will mitigate the enormous economic, financial, and public health burden and the cost of unnecessary and harmful treatments (surgery included), misleading beliefs, unnecessary referrals, and imaging. Furthermore, to achieve SDG-3.d, there is an urgent need to address back pain as a major burden for public health because back pain has remained the main cause of disability worldwide over the past several decades. As part of their management, patients with back pain should have rapid access to evidence-based, high-value primary care.



In most low- and middle-income countries, there are no specific guidelines to approach back pain in primary care




There is an urgent need to address back pain as a major burden for public health



F. Social determinants | Social justice

Recommendation

SPINE20 calls on G20 countries to ensure accessible and affordable quality care to persons with spine disorders, injuries, and related disabilities throughout the lifespan.

Relevance to United Nations SDGs

SDG3-Good Health and well-being

SDG10-Reduced inequalities

Background

Health inequities cause unnecessary suffering and result from adverse social conditions and failing public policies. These inequities are the same factors that undermine development, environmental sustainability, the well-being of societies, and societies' capacity to provide fair opportunities for all. Health inequities are problematic for all countries and reflect not only differences in income and wealth, but also differences in opportunity based on factors such as ethnicity and racism, class, gender, education, disability, sexual orientation, and geographical location. These differences have profound consequences and represent the impact of what we know as 'social determinants of health.' Yet health inequities, by definition, are not inevitable.



Health inequities cause unnecessary suffering and result from adverse social conditions and failing public policies



Health is determined by medical and non-medical factors. Understanding the non-medical factors of health and their impact is a relatively recent phenomenon. The WHO recognized this formally in 2005 when they established a commission that produced a comprehensive report in 2008. The WHO Commission on Social Determinants of Health (SDH) compiled recommendations to create an extensive roadmap of what is required to “close the gap” through action on social determinants across all sectors of society. After considering the commission’s report at the 2009 World Health Assembly, Member states resolved to implement these recommendations, adopting resolution 62.14, “reducing health inequities through action on the social determinants of health.”



The non-medical factors that influence health, can have a major impact on people’s health, well-being, and quality of life



As per the WHO, the Social Determinants of Health, the non-medical factors that influence health, can have a major impact on people’s health, well-being, and quality of life. SDH include: i) safe housing, transportation, and neighborhoods; ii) Racism, discrimination, and violence; iii) education, job opportunities, and income; iv) access to nutritious foods and physical activity opportunities; v) polluted air and water; and vi) language and literacy skills.

Problem

It is reported that SDH accounts for about 30-55 percent of health outcomes.⁶² These social determinants are being considered in the health conditions related to the spine, such as disorders and diseases, deformities, and injuries.

Potential solutions

SPINE20 calls upon G20 countries to ensure accessible and affordable quality care to persons with spine-related disorders, diseases, deformities, and injuries throughout the lifespan. SDH are known to significantly (and often differentially) impact the final outcomes of treatments of many spine-related health issues. Early recognition of the important contribution of SDH to disparities in spine health is warranted. A recent study aimed to understand how the SDH influences spinal surgical outcomes. Findings suggested that appropriately tailored care practices may lead to better patient outcomes. Social determinants and social justice must consider spine health across all age groups, genders, strata of society, and types and degrees of severity of spine-related disorders (congenital or acquired, painful or not).⁶³ To address the SDH and social justice, national policy and programs should encompass all the important clinical spine health services, including prevention (at multiple levels), early diagnosis (clinical, supported by appropriate investigations where required), and comprehensive patient-centered care across all levels of care, namely acute care, rehabilitation, medical, surgical, and palliative care. The SPINE20 initiative formulated easy-to-implement recommendations through a National Spine Health Program to address the enormous burden of spine-related disorders on a nation's economy. To this end, governments, in collaboration with the non-government sector, shall involve multiple ministries and agencies to establish a National Policy that cuts across center state barriers.



G. Implementation of Recommendation

Recommendation

SPINE20 calls on the G20 countries to establish, prioritize, and implement accessible National Spine Care Programs to improve spine care and health outcomes.

Relevance to United Nations SDGs

SDG3 - Good Health and Well-being
 SDG4 - Quality education
 SDG6 - Clean water and sanitation
 SDG8- Decent work and economic growth
 SDG10 - Reduced inequalities
 SDG11 - Sustainable cities and communities
 SDG17 - Partnerships for the goals

Background

Spine problems affect over one billion people worldwide and remain the leading cause of global disability since 1990.^{11,64} The best available evidence on the management of spine problems is not well integrated in health policy in most countries.⁶⁵⁻⁶⁹

Problem

While high quality, evidence-based guidelines on the management of spine disorders are available,⁷⁰ many people with spine symptoms continue to receive unnecessary and potentially harmful investigations, treatments, or experimental procedures, together resulting in wasted resources.

Potential solutions

The activities and initiatives of SPINE20 are consistent with the SDGs,¹ by helping to mitigate the impact of spine conditions on peoples' health and promote healthy lives and well-being for all at all ages. Globally, spine disorders (including common back pain, spinal cord injury, and other spinal disorders) are the leading cause of disability, affecting more than 1 billion people on Earth.^{11,64,65} SDGs 4, 6, 8, 9, 10, 11, and 17 ensure the inclusion and optimal development of persons with disabilities. '*Leaving no one Behind*' is the overarching SDG philosophy and explicitly mentions '*include disability*' and '*persons with disabilities*' in relation to education, growth and employment, inequality, accessibility of human settlements, as well as data collection and the monitoring of the SDGs.⁶⁶ In summary, the SDGs have a strong emphasis on promoting healthy lives, well-being, and the inclusion and empowerment of persons with disabilities. Robust health policies, prevention strategies, and National Spine Care Programs designed to support the implementation and evaluation of SPINE20 recommendations can help countries achieve the SDGs and enhance equitable access to high-value spine care.

SPINE20 calls upon the G20 countries to establish National Spinal Care programs, and to prioritize, implement, and evaluate recently compiled SPINE20 recommendations across health systems to improve equitable spine care and health outcomes. The proposed solution entails establishing comprehensive national spine care programs to promote the delivery of safe, effective, culturally relevant evidence-based non-operative care, encompassing rehabilitation and spinal cord injury management, as well as emergent and surgical care when required.^{65,67-69}



Educational activities of SPINE20

At the 2022 SPINE20 Summit in Bali, the Education Committee (EdCom) introduced the idea that spinal disorders are a silent syndemic. A 'syndemic' creates a set of health problems involving two or more affiliations, which can interact to create a multiplier effect that contributes to the excess burden of this condition in our populations. Given the absence of actual figures, we postulated that the true annual global cost of this syndemic in terms of treatment costs, rehabilitation costs, lost work productivity costs, and family burden ran into hundreds of billions of dollars.

We suggested that all stakeholders must come together to mobilize resources and share current knowledge (mistakes and success) to appropriately address the increasing burden caused by these disorders. The SPINE20 EdCom is advocating that the first step towards a solution to the ineffective primary care, rehabilitation and surgical interventions, medical waste and social burden must be standardized, quality controlled, and universally accessible spine care education of key spine care stakeholders. We stand united behind a very simple ethos to deal with this syndemic: The implementation of standardized and accessible Interprofessional Training programs which show spine care professionals that delivering approved clinical pathways in the most expedited and cost-effective fashion will improve patient outcomes and unburden the healthcare system.

In Bali we presented a range of topics that highlighted the enormous challenges and hurdles to delivering true behavior change in the clinical education of spine care. We recognized that to make the transformation needed, we would have to align all key stakeholders able to address these challenges and issues in a systematic manner. Our first activity in 2022 was to present a downloadable PDF – EdCom eBrochure – which provided a background to our activities and plans and expanded on the Bali presentations. The eBrochure was followed by the EdCom Virtual Workshop to engage a wider audience in a discussion related to different categories of Spine Care Curriculum Mapping and Curriculum Delivery. The aim of these discussions is to gain real and quantitative feedback from the audience about the importance of different projects within the two categories

https://spine20.org/event/wp-content/uploads/2023/03/Spine20_Education_Committee_eBrochure.pdf

For the 2023 SPINE20 Summit in New Delhi, India, the EdCom is proposing a model for developing and delivering evidence based Interprofessional Education that is free from corporate influence, and discussing how to develop a spine care curriculum that considers the different stakeholders involved in spine care from the moment of onset of the spinal disorder to its resolution.

The EdCom session will present:

1. The merits and challenges of delivering Interprofessional Training (IPT),
2. EdCom initial ideas to invest in projects that prove the value of IPT, and
3. The views of two industry stakeholders on spine care education.*

* We elected to involve industry stakeholders, an established global medical device player and a new company coming with a “cutting edge” technology. We believe learning to build true partnerships with industry will be key to EdCom’s success in the future.

The EdCom would like to partner with all stakeholders and governments around the world to help solve the spine care educational problems for each specific situation.

Conclusions

SPINE 20 is an international coalition that was created to bring global attention to the burden of disability caused by spinal disorders. Our advocacy efforts focus on developing public policy recommendations to improve the health, welfare, and wellness of all who experience spinal pain and disability. We propose that focusing on facilitating access to health systems that prioritize high value care delivered by a competent healthcare workforce will contribute to reducing disability and improve the productivity of the G20 nations. In addition, it is our proposition that the alignment of SPINE20 recommendations will make a valuable contribution to the advancement of SDGs.

Table 1. Societies participating in SPINE20 (March 2023)

Society	Nations
Australian Physiotherapy Association	Australia
Brazilian Spine Society (BSS)	Brazil
World Federation of Chiropractic	Canada
German Spine Society (DWG)	Germany
NSPINE	Germany
Hellenic Spine Society	Greece
Association of Spine Surgeons of India (ASSI)	India
Indian Association of Physical Medicine and Rehabilitation	India
Indian Head Injury Foundation	India
Nina Foundation	India
Society of Indian Physiotherapists	India
Spinal Cord Society	India
Spine Society Delhi Chapter	India
The Ability People	India
The Association of People with Disability (APD)	India
The Spinal Cord Injury Association	India
The Spinal Foundation	India
Indonesia Spine Society	Indonesia
The Indonesian Association of Physical Medicine and Rehabilitation	Indonesia
Italian Spine Society (SICV&GIS)	Italy
Japanese Association for Patients with Spinal Ligament Ossification	Japan
Japanese Society for Spine Surgery and Related Research (JSSR)	Japan
Asociación Mexicana de Cirujanos de Columna AMCICO	Mexico
Society of Spine Surgeons of Pakistan	Pakistan
Saudi Association of Neurological Surgery	Saudi Arabia
Saudi Spine Society (SSS)	Saudi Arabia
EUROSPINE	Switzerland
North American Spine Society (NASS)	United States
World Spine Care	United States
Sociedad Iberolatinomericana de Columna – SILACO	Uruguay

Table 2. Domain and SDG number of our previous recommendation

Domain	Year published:
SDG#	Statement
Implementation of Recommendation #3 Good health and well-being #4 Quality education #6 Clean water and sanitation #8 Decent work and economic growth #10 Reduced inequalities #11 Sustainable cities and communities #17 Partnerships for the goals	2020: Develop policies and support systems to mitigate the increasing burden of spinal disability on healthcare, the economy, and social security systems. 2021: SPINE20 calls upon the G20 countries to promote strategies to transfer evidence-based advances into patient benefit through effective implementation processes. 2023: SPINE20 calls on the G20 countries to establish, prioritize, and implement accessible National Spine Care Programs to improve spine care and health outcomes.
Prevention #3 Good health and well-being	2020: Examine and adopt prevention strategies to limit spine problems, including exercise incentive programs to cultivate healthy populations.
Pediatric spine #2 Zero hunger #3 Good health and well-being	2020: Promote balanced nutrition in the young population, to ensure full access to vitamins and nutrients throughout childhood.
Aging spine #3 Good health and well-being	2020: Encourage and support osteoporosis preventive strategies and early detection measures, particularly in the older population at risk of developing osteoporotic fractures. 2021: SPINE20 calls upon the G20 countries to adopt a strategy to promote daily physical activity and exercises among the elderly population to maintain an active and independent life with a healthy spine, particularly after COVID19 pandemic. 2022: SPINE20 calls upon G20 countries to develop policies using the best available evidence to properly manage spine disorders and to prolong functional healthy life expectancy in the era of an aging population.
Spinal cord injury #3 Good health and well-being #10 Reduced inequalities	Create global awareness for the prevention of spinal cord injury.

Value based care #3 Good health and well-being #8 Decent work and economic growth	2020: Implement the principles of Valued based Healthcare in spine practice to optimize spine care in the global community. 2021: SPINE20 calls upon the G20 countries to adopt value based interprofessional spine care as an approach to improve patient outcomes and reduce disability. 2022: SPINE20 calls upon G20 countries to develop international consensus statements on patient outcomes and how they can be used to define and develop pathways for value-based care.
Access to care #3 Good health and well-being #10 Reduced inequalities	2020: Promote global access to comprehensive healthcare for individuals with spinal cord injury to facilitate community inclusion, return to the work force and improve quality of life. 2021: SPINE20 calls upon the G20 countries to facilitate access and invest in the development of a competent rehabilitation workforce to reduce the burden of disability related to spine disorders. 2022: SPINE20 calls upon G20 countries to develop action plans to provide universal access to spine care that incorporates the needs of minorities and vulnerable populations.
Education #3 Good health and well-being #4 Quality education	2020: Define global standards for continuing education and training curricula for spine care practitioners that promote interprofessional collaboration and patient centered care. (Continued to the Education committee activity)
Patient safety #3 Good health and well-being #10 Reduced inequalities	2020: Recognize the need to address patient safety which requires appropriate training and teamwork in spine care. 2022: SPINE20 calls upon G20 countries to invest in the development of sustainable human resource capacity, through multisectoral and inter-professional competency-based education and training to promote evidence-based approaches to spine care, and to build an appropriate healthcare environment that optimizes the delivery of safe health services. 2023: SPINE20 calls on the G20 countries to monitor and reduce safety lapses in primary care including missed diagnoses of serious spine pathologies and risk factors for spinal disability and chronicity.

Research #3 Good health and well-being #9 Industry, innovation, and infrastructure	2020: Create national/global big data collections in the form of registries or other modalities for future care to be based on reliable and valid outcome data. 2021: SPINE20 calls upon the G20 countries to expand telehealth for the access to spine care, especially considering the current situation with COVID19. 2022: SPINE20 calls upon G20 countries to build collaborative and innovative translational research capacity within national, regional, and global healthcare systems for state-of-the-art and cost-effective spine care across the healthcare continuum ensuring equality, diversity, and inclusion of all stakeholders.
Capacity building #3 Good health and well-being #10 Reduced inequalities #17 partnership for the goals	2021: SPINE20 calls upon the G20 countries to engage in capacity building with emerging countries and underserved communities for benefit of spine patients.
Wellness #3 Good health and well-being	2022: SPINE20 calls upon G20 countries to recognize that intervening on determinants of health including physical activity, nutrition, physical and psychosocial workplace environment, and smoking-free lifestyle can reduce the burden of spine disabilities and improve the health status and wellness of population.
Rehabilitation #3 Good health and well-being #8 Decent work and economic growth #10 Reduced inequalities	2022: SPINE20 calls upon G20 countries to create a competent workforce and improve the healthcare infrastructure/facilities including equipment to provide evidence-based inter-professional rehabilitation services to patients with spinal cord injury throughout their continuum of care.
Spinal disability and poverty #1 No poverty #3 Good health & well-being	2023: SPINE20 calls on the G20 countries to eliminate structural barriers to accessing timely rehabilitation for spinal disorders to reduce poverty.

Healthy spine and LiFE #3 Good health and well-being #13 Climate action	2023: calls on the G20 countries to promote and facilitate healthy lifestyle choices (including physical activity, nutrition, smoking cessation) to improve spine wellness and health.
Digital spine care #3 Good health and well-being #10 Reduced inequalities	2023: SPINE20 calls upon G20 countries to implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice, and measure outcomes.
Economy #3 Good health and well-being #10 Reduced inequalities	2020: Recognize that lower back pain is the leading cause of years lived with disability and loss of function in the world. Create lowcost models to ensure the right care is delivered at the right time. 2023: SPINE20 calls on G20 countries to develop, implement and evaluate standardization processes for spine care delivery systems tailored to individual and population health needs.
Social Determinants #3 Good health and well-being #10 Reduced inequalities	2023: SPINE20 calls on G20 countries to ensure accessible and affordable quality care to persons with spine disorders, injuries, and related disabilities throughout the lifespan.

Table 3. Domain proposed in SPINE20 2023

Proposed domains	Primary scoring	Results of consensus meeting
Healthy spine and LiFE	8.33	88.2% agreement in 1 st voting
Spinal disability and poverty	8.30	94.1% agreement in 1 st voting
Digital spine care	8.00	76.4% agreement in 1 st voting
Prevention	7.63	
Economy of spine care	7.56	76.4% agreement in 1 st voting
Social perspective	7.33	
Patient safety	7.26	87.5% agreement in 3 rd voting
Social determinants	7.15	81.3% agreement in 4 th voting
Access to care	7.04	
Spine emergency	6.93	
Value-based care	6.48	
Rehabilitation	6.44	
Diversity	6.41	
Implementation of recommendation	6.30	
Research	6.30	
Pediatric spine	6.11	
Future of spine care	5.96	
Capacity building	5.81	

Table 4. All candidates of recommendation statements

Domain	Candidate statement
Subdomain	
Implementation of Recommendation	A. Since Spinal diseases problems are the commonest cause of disability in most countries across the globe and the Sustainable Development Goals have a strong emphasis on healthy lives, promotion of well-being as well as inclusion and empowerment of persons with disabilities, SPINE20 calls upon G20 countries to consider implementation of the evidence based recommendations compiled by the SPINE20 experts each year since 2020 through a Delphi consensus process by including these in their HEALTH POLICY and considering a National Spine Care program. SPINE20 experts would be happy to extend all support to all countries in this regard. B. SPINE20 calls upon G20 countries to consider implementation of the evidence-based recommendations compiled by the SPINE20 experts each year through a Delphi consensus process by including these in their HEALTH POLICY and considering a National Spine Care program, since spinal problems are the most common cause of disability in most countries. C. SPINE20 calls upon the G20 countries to establish National Spinal Care programs, and to prioritize, implement, and evaluate recently compiled SPINE20 recommendations across health systems to improve equitable spine care and health outcomes.
Spinal disability and poverty Investments in health systems	A. SPINE20 calls on the G20 nations to eliminate structural barriers to accessing to timely rehabilitation for back pain as a means to reduce poverty. B. SPINE20 calls on the G20 nations to invest in health policy and systems research to study the impact on rehabilitation for back pain on the welfare of populations.
Healthy spine and LiFE Impact	A. SPINE20 calls on the G20 to collectively work together to implement changes to reduce the carbon footprint worldwide by promoting, Wellness, Healthy lifestyles, and Physical activity, to prevent Spine Disability in One Earth, One Family, One Future B. SPINE20 calls on the G20 to encourage, promote and implement holistic action plans for healthy lifestyles that all individuals can enact worldwide to preserve our planet from further climate damage and protect the environment while decreasing spine disorders and preventing spine disability. C. SPINE20 calls on the G20 to raise awareness of how our everyday lifestyle decisions regarding wellness, physical activity, smoking and nutrition affect the worlds resources and our Spine Health.

Digital spine care Transformation

A. SPINE20 calls upon policy makers to ensure access to digital spine care through supporting infrastructure (including spine registries) and digital literacy to deliver ethical practice and monitor its impact.

B. SPINE20 calls upon G20 countries to implement cost-effective, evidence-based practice for digital transformation in spine care, to deliver self-management and prevention, evaluate practice and measure outcomes.

C. SPINE20 calls upon research funders to prioritize funding research to develop and evaluate digital technologies and tools, to prevent disability and optimize spine care.

Economy Standardization

A. SPINE20 calls on G20 countries to support the development, implementation, and evaluation of standardization processes for spine care delivery systems encompassing genomic, psychological, social, and cultural dimensions of population health needs.

B. SPINE20 calls on G20 countries to promote the development, implementation, and evaluation of standardization processes throughout the multilayers of spine care delivery system, while allowing for the systematic customization and personalization of care to reduce knowledge gaps and address the inherent variation in genomic, psychological, social, and cultural dimensions of the population health needs

Patient safety Culture of safety

A. SPINE20 calls on the G20 to raise awareness of safety lapses in primary care including unrecognized red flags and risk of chronicization.

B. SPINE20 calls on the G20 to promote education as a mean to manage safety lapses in primary care.

Social Determinants Social Justice

A. Social determinants of health like gender, race, ethnicity, education, occupation, socioeconomic status etc. influence spine health, recovery, and rehabilitation. SPINE20 calls upon G20 countries to consider making all stake holders including policy planners, healthcare providers, professionals, media, individuals and families with spine-related problems, and the society at large aware about these factors and address them as best as possible so as to decrease spine health inequities and improve comprehensive Spine Care.

B. SPINE20 calls upon G20 countries to initiate continuing education and awareness related activities and programs highlighting the importance of all important pillars of holistic and continuum of care, such as prevention, early diagnosis, treatment, and rehabilitation of spine-related conditions.

C. SPINE20 calls upon G20 countries to ensure accessible and affordable quality care to persons with spin- related disorders, deformities, injuries etc. throughout the lifespan.

Table 5. All candidates of recommendation statements

Domain	Results of pre-score	Voting results
Subdomain		
Implementation of Recommendation	A:7.00, B:7.80, C:8.67	Vote1: A 7.1%, B 10.7%, C 82.1%
Spinal disability and poverty Investments in health systems	A:8.60, B:8.40	Vote1: A 78.6%, B 21.4%
Healthy spine and LiFE Impact	A:7.75, B:7.81, C:8.08	Vote1: A 14.3%, B 14.3%, C 71.4% Vote2: A 6.5%, B 6.5%, C 87.1%
Digital spine care Transformation	A:7.96, B:8.63, C:7.52	Vote1: A 10.7%, B 85.7%, C 3.6%
Economy Standardization	A:7.81, B:7.69	Vote1: A 71.4%, B 28.6% Vote2: A 80.6%, B 19.4%
Patient safety Culture of safety	A:8.04, B:7.92	Vote1: A 75.0%, B 25.0%
Social Determinants Social Justice	A:7.80, B:7.98, C:8.12	Vote1: A 17.9%, B 28.6%, C 53.6% Vote2: B 22.6%, C 77.4%

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