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HISTORICAL PERSPECTIVE

Back to the Future: A Report From the 16th International Forum for Back and Neck Pain Research in Primary Care and Updated Research Agenda

Clermont E. Dionne, PhD,[a] Michel Rossignol, MD, MSc,[b] Richard A. Deyo, MD, MPH,[c] Bart Koes, PhD,[d] Mark Schoene, BS,[e] and Michele Battié, PhD[f]

Study Design. The 16th meeting of the International Forum for Back and Neck Pain Research in Primary Care was held in Québec City in July 2019 under the theme of innovation. This paper addresses the state of research in the field.

Objective. To ascertain the evolution of knowledge and clinical application in back and neck pain and identify shifting research priorities.

Materials and Methods. After a brief presentation of the Forum and its history, the current state of the field was depicted from the scientific program and the recordings of the plenary and parallel oral and poster communications of Forum XVI. Research agendas established in 1995 and 1997 were updated from a survey of a multidisciplinary group of experts in the field. A discussion of the progress made and challenges ahead follows.

Results. While much progress has been made at improving knowledge at managing back pain in the past 25 years, most research priorities from earlier decades are still pertinent. The need for integration of physical and psychological interventions represents a key challenge, as is the need to better understand the biological mechanisms underlying back and neck pain to develop more effective interventions. Stemming the tide of back and neck pain in low and middle-income countries and avoiding the adoption of low-value interventions appear particularly important. *The Lancet* Low Back Pain Series initiative, arising from the previous fora, and thoughts on implementing best practices were extensively discussed, recognizing the challenges to evidence-based knowledge and practice given competing interests and incentives.

Conclusion. With the quantity and quality of research on back and neck pain increasing over the years, an update of research priorities helped to identify key issues in primary care.

Key words: back pain, neck pain, international forum, research agenda

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The International Forum for Back and Neck Pain Research in Primary Care is an organization whose vision is to reduce the burden of back and neck pain through research excellence. Its mission is to promote scientifically rigorous and clinically relevant research to improve outcomes that are important to people living with back or neck pain; promote the implementation of research results; clarify research priorities and set a research agenda; foster international, multidisciplinary collaboration; influence stakeholders to promote changes in policy that improve the prevention and management of back and neck pain; and provide and support learning opportunities.[1]

The International Forum for Back (and Neck) Pain Research was first held in Seattle in 1995, through the initiative of primary care researchers Dan Cherkin, Jeffrey Borkan, Timothy Carey, Richard Deyo, and Bart Koes, and has since gathered active and respected researchers in the back pain field. It has been organized approximatively every 18 months in a different country and hosted by an active research group in the field. The Forum gathers researchers from all over the world and many disciplines with a strong and committed interest in research on spinal pain in primary care, although secondary and tertiary care are also

From the [a]Department of Social and Preventive Medicine, Université Laval, Québec City, QC, Canada; [b]Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montréal, QC, Canada; [c]Departments of Family Medicine and of Internal Medicine, Oregon Health and Science University, Portland, OR; [d]Department of General Practice, Erasmus University Medical Center, Rotterdam, The Netherlands; [e]The Back Letter, Lippincott, Newbury, MA; and [f]Professor and Western Research Chair, Faculty of Health Sciences and Western's Bone and Joint Institute, Western University, London, ON, Canada.

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Address correspondence and reprint requests to Clermont E. Dionne, PhD, Centre de recherche du CHU de Québec—Université Laval, Hôpital du Saint-Sacrement, 1050, chemin Ste-Foy, Québec City, QC, Canada G1S 4L8; E-mail: clermont.dionne@crchudequebec.ulaval.ca

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TABLE 1. Major Developments in Back and Neck Pain Research Over the Last 30 Years

Year(s)	Development
1987	Québec Task Force "clinical guideline"
1987	Bio-psycho-social model (Gordon Waddell)
1990s	Search to identify the prevalence of different spine pain generators
1992	Start of publication—Evidence-based Medicine working group
Ongoing	(Cochrane) systematic reviews/meta-analyses
Ongoing	Development, dissemination of clinical guidelines
Nineties	Psychosocial risk factors for chronicity
Nineties	Disability and (early) return to work
2000s	Identification of subgroups (prognosis/response to treatment)
2000s	Global burden of disease studies
Ongoing	Improved methods for RCTs and observational studies
Ongoing	Tiny bits of prevention, cost-effectiveness, implementation
Present	Contextual effects, self-management
Present	Individualized (precision) medicine
Present	Lancet series: promoting deimplementation (ineffective, harmful interventions)

included. Dedicated researchers in spinal pain and researchers from other musculoskeletal pain fields are encouraged to join the Forum and contribute to discussions about current and future challenges in back and neck pain research. Since the Forum in Melbourne, Australia, in 2011, an early career research (ECR) group was established to facilitate the participation and support of younger investigators. This has been a very successful, ongoing initiative. Industry sponsors are not involved and have no influence in the development of the scientific program of the Forum, which is under the control of the International Forum for Back and Neck Pain Research in Primary Care International Executive Committee. Important developments in back and neck pain research that are intertwined with the Forum history are listed in Table 1.

After the inaugural meeting in Seattle in 1995, the Forum was subsequently held in different countries in Europe, the Middle East, the Americas, and Australia. The 16th meeting was held in Québec City, Canada, in July 2019, under the theme of innovation. The slogan of Forum XVI was "Back to the Future," a wink to the movie of the same name, meaning "do we want to tread water or do we want to advance the field?", and referred to innovations that can change the way back and neck pain are approached and treated, and research is conducted, such as epigenetics, personalized medicine, shared decision making, and new computer applications. Delegates were encouraged to explore novel ideas that may bring the field into new territories in the coming years. This paper summarizes the scientific program of Forum XVI, the state of research in this field, and the challenges and most promising questions identified. It is intended to serve as a beacon for future progress.

MATERIALS AND METHODS

This article draws from the Forum website,[1] the 2019 scientific program, and the recordings of the plenary and parallel oral and poster communications. Research agendas established in 1995 and 1997 were updated from a survey of a group of experts in the field; on September 20th, 2021, an online survey questionnaire was emailed to 43 back and neck pain experts identified mainly from the Local Organizing and International Executive Committees of Forum XVI, with the intent of including leading experts who witnessed the history of the Forum. Email reminders were sent every seven days for three weeks. Participants were asked to rate 32 back and neck pain research themes on a 10-point Likert scale from 1 (not a priority at all) to 10 (the highest priority). Twenty themes were duplicated from the 1995 and 1997 published agendas, with the addition of "neck pain" to reflect the expanded focus of the Forum over time. Twelve themes not previously mentioned came from what seemed to be emerging themes in Québec City's Forum program. In addition, an open-ended question allowed for 'standard deviation (SD)' comments and suggestions of other themes. Means and SDs of the scores were calculated and used to rank the 32 research themes.

A discussion of the progress made and challenges ahead follows. Thoughts and reflections on the Forum by the authors address the "state of the field" and identify the main challenges ahead.

RESULTS

The Québec Forum

Forum XVI attracted 210 participants from 17 countries (Canada, Australia, and the United States were the most represented), among which were 127 researchers and clinician-scientists (including nine from low- and middle-income countries), nine clinicians, 60 Early Career Researchers, two journalists, two patients' representative, and 10 sponsors' representatives (*e.g.*, from the Workers' Compensation Board and the Ministry of Health) (Table 2). The clinical background of participants was available for only 72 (34.3%) of them. Chiropractors (8.6% of all participants), physicians (7.6%), and physiotherapists (18.1%) were the most frequent. The number of attendees was in the same

TABLE 2. Information on Participants to the Québec Forum and the Priority Update

Variables	n (%)	
	Participants to the Québec Forum (n = 210)	Participants to the Priority Update (n = 35)
Sex		
Female	104 (49.5)	10 (28.6)
Male	106 (50.5)	25 (71.4)
Country		
Australia	33 (15.7)	5 (14.3)
Belgium	1 (0.5)	0
Brazil	13 (6.2)	0
Canada	57 (27.1)	11 (31.4)
Denmark	11 (5.2)	1 (2.9)
Finland	5 (2.4)	0
Germany	1 (0.5)	0
India	1 (0.5)	0
Israel	3 (1.4)	1 (2.9)
New Zealand	1 (0.5)	0
Norway	18 (8.6)	3 (8.6)
Poland	1 (0.5)	0
Spain	1 (0.5)	1 (2.9)
Sweden	9 (4.3)	1 (2.9)
The Netherlands	12 (5.7)	2 (5.7)
United Kingdom	17 (8.1)	5 (14.3)
United States	26 (12.4)	5 (14.3)
Main role		
Academia (including clinician-scientists)	127 (60.5)	33 (94.3)
Clinician	9 (4.3)	1 (2.9)
ECR	60 (28.6)	1 (2.9)
Journalist	2 (1.0)	1 (2.9)
Patients' representative	2 (1.0)	0
Sponsors' representative	10 (4.8)	0
Clinical background		
DC Chiropractor	18 (8.6)	6 (17.1)
MD Physician	16 (7.6)	12 (34.3)
PT Physiotherapist	38 (18.1)	14 (40.0)
Other or unspecified	138 (65.7)	3 (8.6)

DC indicates chiropractor; ECR, early career researcher; MD, physician; PT, physiotherapist.

range as that of previous fora and was limited on first-come first-served basis in favor of encouraging discussion and collaboration among participants.

The dates, location and overarching theme of each previous Forum are presented in Table 3. The thread of the themes in primary care, implementation, prevention of chronicity, quality of care, economic analysis, policy, and methods seems pertinent today, along with revisiting the research agenda to advance knowledge. Specifically at Forum XVI, in addition to talks on the theme of innovation, there were dedicated sessions on occupational health and on back and neck pain in low- and middle-income countries, a first at the Forum (Table 4). Precarious employment, work-related geographical mobility, the gig economy, and international labor migration were identified as important changes in the world of work with consequences for health-related research, treatment and return to work. A formidable project, the Global Spine Care Initiative, put together by a diverse team of clinicians, researchers, anthropologists, psychologists, and surgeons, funded by the Skoll Foundation and NCMIC Foundation, was presented.[9] This team developed a care pathway that is applicable from primary contact to tertiary care to provide care for free in clinics that are open year-round in several low- and middle-income countries. Most of these clinics use local clinicians and are run at a university hospital by the faculty and students in the local language and cultural context. This initiative has tuition scholarships and fellowship training of spine surgeons. It has hosted one spine care conference in India and three in Botswana. A key learning of this session was that we must adapt to the patients' beliefs, goals and customs and get to know them as best as possible. A panel of researchers from low- and middle-income countries also discussed the situations and challenges they are faced with, and suggested collaboration with investigators from high-income countries as a way to accelerate the development of capacities in settings with limited resources.

While innovations were well represented in the oral sessions of Forum XVI (*e.g.*, e-health and novel technologies like online patient decision aids, text messaging to recruit participants and collect data, mobile app-based education, and activity trackers), methods and measures still attracted interest (Table 5). Stratification of patients and personalized interventions

TABLE 3. Overarching Themes of Back and Neck Pain Fora

Forum	Location	Theme(s)
Forum I—October 1995	Seattle, WA, USA	State of knowledge and draft agenda for future research[2]
Forum II—May 1997	The Hague, The Netherlands	Develop the agenda for research and point out research priorities[3]
Forum III—October 1998	Manchester, UK	Researching the prevention of chronicity: population and primary care perspectives
Forum IV—May 2000	Eilat, Israel	Implementation and dissemination: getting research into practice[4]
Forum V—May 2002	Montréal, Canada	Quality care in low back pain: How many does it take to tango?
Forum VI—May 2003	Linköping, Sweden	Health economy and the relevance of different methods used in different environments; the dilemma of nonspecific disorders and the need for tools that improve classification and identification of more homogenous clinical subgroups
Forum VII—October 2004	Edmonton, Canada	Is the back pain field moving forward?[5]
Forum VIII—June 2006	Amsterdam, The Netherlands	Methodological issues
Forum IX—October 2007	Palma de Mallorca, Spain	The contribution of evidence-based medicine and the unsavory influences within it[6]
Forum X—June 2009	Boston, MA, USA	What are the outcomes of LBP, and how do they inter-relate? What factors are related to outcomes? How can we improve outcomes? How can we translate research to practice?[7]
Forum XI—March 2011	Melbourne, Australia	The imperative of evidence based policymaking—should back pain become a national health priority area?
Forum XII—October 2012	Odense, Denmark	What works for whom and why, under which circumstances, and at what cost?[8]
Forum XIII—September 2014	Campos do Jordão, Brazil	Simplifying the complex or complicating the simple
Forum XIV—June 2016	Buxton, UK	How can we broaden and strengthen the influence and impact of our research? How do we ensure that we are doing research without walls?
Forum XV—September 2017	Oslo, Norway	Back to basics
Forum XVI—July 2019	Québec City, Canada	Back to the future

LBP indicates low back pain.

continued to be well represented but were less of a focus than in earlier fora. Instead, there was more attention on economic studies, pharmacology (*e.g.*, opioids), and back and neck pain in children and adolescents than in previous fora.

Workshops are a trademark of the Forum, allowing participants to propose topics and establish meaningful collaborations that have brought about important developments (*e.g.*, *The Lancet* Low Back Pain Series).[10–13] This is made possible by the limited number of attendees. Table 6 shows the titles of the workshops held during Forum XVI, which included such topics as digital technologies, network meta-analyses, personalized medicine, and lumbar spinal stenosis.

TABLE 4. Themes of Plenary Sessions of Forum XVI, Titles of Talks and Plenary Speakers

New tools and approaches for back and neck pain
Sustainable, patient-centered, and evidence supported chronic pain management in primary care: What will it take to move the dial? *Lynn DeBar*
Research and policy making: two worlds apart or a good partnership? *Maurits van Tulder*
Messages about back pain and their effects on behaviour in the context of back pain vignettes: an online experimental study *Gary J Macfarlane*
The future of pain
The Lancet Low Back Pain Series *Rachelle Buchbinder*
Epigenetics: What is it and why should anyone care? *Laura Stone*
Does medical cannabis have a place in the treatment of chronic musculoskeletal pain in primary care? *Edeltraut Kröger*
A revolution in occupational health
The changing world of work in Canada and worker health: Innovation requirements for research and treatment *Barbara Neis and Katherine Lippel*
Back and neck pain in low- and middle-income countries
Managing back pain in low- and middle-incomes countries. A first hand clinician experience *Geoff Outerbridge*
Challenges in managing back pain in a middle-income country using Brazil as an example *Luciola Menezes Costa*
Challenges in managing back pain in a low-income country using Nepal as an example *Sweekriti Sharma*
Closing keynote session
The future of back pain research and practice: competing visions *Richard A Deyo*
Panel discussion: Michele Battié, Rachelle Buchbinder, Jan Hartvigsen

There were two poster sessions that included a total of 100 poster presentations. These posters covered the same themes as the oral presentations and offered a formidable patchwork that addressed multiple questions on back and neck pain. They included, for instance, research on a mindfulness intervention for pain, the identification of two novel gene loci for low back pain, the effects of opioid use, back pain in older adults, spinal manipulation, text messaging to collect outcome measures, increased level of inflammatory cytokines in back pain patients, paracetamol for pain, managing low back pain in the emergency department, patients' recovery expectations, photobiomodulation and deep water running in chronic low back pain, to name but a few. These examples show that participants of Forum XVI took the innovation theme seriously.

Forum XVI was preceded by a clinical colloquium, and by a Cochrane Back and Neck Group meeting. There was a specific Early Career Researcher afternoon and social networking evening. Two end-of-the day sessions were dedicated to innovation, with speakers from different fields (*Cirque du Soleil* and *Centre Hospitalier de l'Université de Montréal—CHUM*), to offer a broad view of the innovation process. Two highlights from these sessions were learning that innovation is incremental most of the time, and that exnovations also exist, defined as "when products and processes that have been tested and confirmed to be best-in-class are standardized to ensure that they are not innovated further."[14]

Discussion of *The Lancet* Low Back Pain Series initiative was another highlight of the Forum.[10–13] Integration of psychological interventions was also stressed. Several oral and poster presentations presented randomized controlled trials (RCTs) on biological interventions, like antibiotics (amoxicillin) and antidiabetic (metformin) drugs. Fighting back and neck pain in low- and middle-income countries, along with avoiding the adoption of low value care, appeared particularly important. The challenges of continuing to develop and adopt evidence-based knowledge in this field given competing interests and incentives were also discussed, following an inspiring presentation by professor Richard A. Deyo. Deyo pointed out that the field faces the challenge not only of implementing evidence-based care but also of reducing inappropriate low-value care—and contending with the powerful social and economic forces promoting it. Companies and organizations that earn billions of dollars from back care interventions will not give up those markets easily. "Expect a backlash, expect some opposition to *The Lancet* vision," Deyo asserted. "Criticism shouldn't make researchers second-guess themselves or worry they have made a mistake." He cited Danish mathematician/philosopher Piet Hein: "Problems that are worthy of attack prove their worth by fighting back."

Research Agenda Update

Thirty-five of the 43 back and neck pain experts invited (81.4% participation) answered the 2021 survey (listed at the end of paper). Thirteen of those invited had not attended the Québec edition of the Forum; only two of the eight non-responders had attended, while seven responders had not attended. The majority of participants were male (71.4%) from academia (94.3%), with more representation from Canada, Australia, the United Kingdom and the United States. Their clinical background was mainly in physiotherapy (40.0%), medicine (34.3%), and chiropractic (17.1%) (Table 2).

TABLE 5. Themes of Oral Parallel Sessions of Forum XVI

E-Health/Novel technologies
Treatment innovations
Methods and measures
Patient-centered outcomes
Stratification/personalized care
Changing behaviors
Economic studies
Health care trajectories
Pharmacology
Children and adolescents

Table 7 shows the 20 research priorities identified in the first Forum's research agenda,[2] their ranking, a new research agenda developed in 1997,[3] and the relevance of these research priorities today according the 35 participants to the 2021 survey. The first ten 1995 and 1997 priorities seem to have kept their relevance. The highest ranked items were: (1) "Containing and reversing the epidemic of LBP disability in developed countries," (2) "Improving self-care strategies and stimulating self-reliance," (3) "What are the best strategies for treating LBP?," and (4) "Changing primary care provider behavior." "Improve the quality and value of low back pain research" kept about the same rank (seventh) than in 1995. New priorities that emerged among the top ten were: "Low back and neck pain in low- and middle-income countries" (fifth)—tied with "Is there a need for a new paradigm in LBP?"; "Low back and neck pain in older adults" (sixth); "What strategies are effective in educating physicians?" (eighth), tied with "What impacts do benefits systems have on LBP?" (eighth), and "How do persons who seek care for LBP differ from those who manage their problem without professional care?" (eighth); and "Low back and neck pain in children and adolescents" (ninth). The agreement between experts was quite good, as shown by the narrow dispersion of scores.

TABLE 6. Themes of Workshops of Forum XVI

Using digital technologies to drive sustainable evidence-based care for people with LBP
Internationally agreed minimal national dataset for LBP
Second opinion program in spinal surgeries—back to the future for reducing unnecessary care for back pain patients
Effective reassurance for people with LBP across their entire pain journey: what training do our colleagues need?
Network Meta-Analysis—what is it, and how can we use it to evaluate the evidence on spinal pain?
Development of standardized measures of musculoskeletal complaints in children and adolescents
Opioid management for people with chronic nonmalignant pain: interventions, guidelines and lessons learnt—where do we go from here?
Lumbar spinal stenosis: a growing epidemic with urgent need for innovation in current research and practice approaches
Spinal osteoarthritis: how should it be defined?
Back to the future: building a trial bank for LBP
Using personalized pain medicine to address the complexity of pain
Uniting experimental and clinical trial pain science to bridge the gap between bench and bedside
Agreeing treatment targets for future trials of exercise for back pain

LBP indicates low back pain.

Participants in the survey mentioned that it might be preferable to develop short-term and long-term priorities; that many of the priorities that have now been addressed among adults are still to be answered among children; that we need social, cultural, behavioural, educational, and policy research at the population and public health level to devise government policies that could steer the problem away from low-value healthcare; that a paradigm shift would most likely make most of the priorities identified in this survey obsolete; and that priorities should be established from community, health system or national needs, not by researchers alone.

DISCUSSION

Twenty-five years after the first "International Forum for Primary Care Research on Low Back Pain," low back and neck pain are among the leading causes of disability-adjusted life years in most countries of the world.[15] Have we made progress? Looking back to the research priorities established at the first Forum, it is humbling to realize that most remain relevant today. There have been tremendous improvements in the quantity and methodological quality of back and neck pain research over the past decades, but the challenges of resolving spinal pain problems of largely unknown etiology or pathology have proven formidable. Numerous systematic reviews, especially within the Cochrane Collaboration, have allowed a "tabula rasa" approach to knowledge, and important efforts of knowledge transfer to health care professionals, researchers, decision-makers and the public have been made. But despite many breakthroughs, progress in improving real-world outcomes has been slow at best. It is not clear that the past quarter century has brought any broad reduction in the prevalence of problematic back and neck pain—and related disability—around the world.

We now know, for instance, that physical interventions alone (including exercise) have only limited effects[16]; that

TABLE 7. Low Back Pain Research Priorities in 1995,[2] Reassessed in 1997,[3] and in 2021

Rank,* in 1995 Agenda	Research Theme	Rank in 1995 Agenda Reassessed in 1997	Rank in 1997 Agenda	Priority Score in 2021 (Mean and SD)†	Rank in 2021
1	Identifying varieties and subgroups of LBP	5	1	6.8 (2.3)	6‡
2	Containing and reversing the epidemic of LBP disability in developed countries	1	8	8.2 (1.6)	1
3	What psychosocial interventions are effective for LBP?	3	—§	6.5 (1.7)	8‖
4	Changing primary care provider behavior	2	7	7.5 (1.6)	4
5	What are the best strategies for treating LBP?	4	—	7.7 (2.0)	3
6	Improve the quality and value of LBP research	8	—	6.7 (1.9)	7
7	Is there a need for a new paradigm in LBP?	13	—	7.3 (1.9)	5‡
8	Improving self-care strategies and stimulating self-reliance	6	4	7.8 (1.7)	2
9	How do patients and providers expectations influence outcomes of care	12	—	6.3 (1.8)	10‡
10	Can the development and dissemination of guidelines improve outcomes?	10	—	6.1 (2.0)	11¶
11	What are the best strategies for diagnosis?	15	—	5.7 (2.1)	14¶
12	What is the role of patient preferences in treatment outcomes?	14	—	6.1 (1.4)	11¶
13	Predictors, determinants and risk factors for LBP disability and chronicity	7	2	5.8 (2.4)	13
14	What are the most pertinent LBP outcome measures for researchers, clinicians, and patients?	9	—	5.7 (2.1)	14¶
15	What strategies are effective in educating physicians?	8	—	6.5 (1.9)	8‖
16	What impacts do benefits systems have on LBP?	10	—	6.5 (2.2)	8‖
17	How do persons who seek care for LBP differ from those who manage their problem without professional care?	11	—	6.5 (1.8)	8‖
18	What can individuals do to prevent LBP?	16	—	5.9 (2.4)	12‡
19		18	—	3.9 (1.8)	21

TABLE 7 *(Continued).*

	What are the appropriate relationships between manual therapists and primary care physicians?				
20	Should primary care physicians treat LBP in all its presentations or would it make more sense if some segments of these patients were seen instead by back care specialists?	17	—	5.2 (2.7)	17
—	Occupational interventions	—	5	6.1 (1.8)	11¶
—	Economic evaluations	—	6	6.3 (2.1)	10‡
—	Qualitative studies on clinical decision making	—	3	5.6 (1.5)	15
—	Why back pain? (philosophical inquiry)	—	9	4.2 (2.8)	19
—	Develop cross-national research that takes into account sociological and disability compensation issues	—	10	5.9 (2.2)	12‡
—	Pharmacology	—	—	4.7 (2.4)	18
—	Medical cannabis against chronic pain (E)	—	—	4.0 (2.1)	20
—	Epigenetics (E)	—	—	5.7 (2.3)	14¶
—	Children and adolescents	—	—	6.4 (2.1)	9
—	Older adults	—	—	6.8 (2.0)	6‡
—	Low back pain in emergency departments (E)	—	—	5.5 (1.7)	16
—	LBP in low- and middle-income countries (E)	—	—	7.3 (2.1)	5‡

**Twenty themes were duplicated from the 1995 and 1997 published agendas, with the addition of "neck pain" to reflect the expanded focus of the Forum over time. Twelve themes not previously mentioned came from what seemed to be emerging themes (E) in Québec City's Forum program; that is why they are not ranked in 1995 and 1997.*

†Priority in 2021 from a survey of 35 back and neck pain experts; Likert scale going from 1 (Not a priority at all) to 10 (The highest priority). Names of participants are listed at the end of this paper. E: Emerging theme in the Québec Forum's program.

‡Tied with one other theme.

§Some items ranked in 1995 have no rank in 1997 because only the first 10 priorities were ranked then.

‖Tied with three other themes.

¶Tied with two other themes.

LBP indicates low back pain.

prognostic stratification has some potential for improving treatment, but that it is currently limited[17,18]; that opioids are not a solution and have become a major problem,[19] with "big pharma" using sales strategies of the tobacco industry[20,21]; that NSAIDS have only a modest effect[22,23]; that psychosocial determinants are important[24]; that multidisciplinary interventions, including interventions that involve workplace actors (*e.g.*, employer, manager, union representative) have a positive impact on chronic cases[25]; that most passive interventions, including surgery, do not work for nonspecific back and neck pain[26–28]; and that we know almost nothing of the impact of medical cannabis on low back and neck pain.[29] There have been extremely important efforts to separate the wheat from the chaff in terms of interventions and to educate the public and professionals. But we still have to develop better interventions. Now more than ever, we need high quality primary studies, including RCTs on innovative approaches, to advance knowledge.[30] However, to avoid shooting in all directions and destroying the large efforts made to "clean up" knowledge in the field, it seems crucial to work toward a better understanding of the underlying mechanisms of back and neck pain. We may have neglected the "bio" of the biopsychosocial model, a risk that was mentioned as early as in the fourth Forum.[4,8] Identifying biomarkers of back and neck pain may provide better targets for interventions to assess in RCTs or help in the phenotyping of axial pain. Epigenetics may offer a key opportunity to develop knowledge by adding genes as potential predictors in stratification tools.[31] However, as such work will not likely translate into practical clinical interventions in the near future, further investigation of a variety of interventions, including "mind-body" approaches, continues to be important. Thoughtful research in both basic biology and clinical studies will inform each other, leading to insights and refinements in both. It is important to build clinical research on "proof of principle," that involves developing a serious theory, model, or framework before conducting any RCT. Also, while occupational health and ergonomics use different paradigms than basic and clinical research, each offers an opportunity to broaden our perspective on the complexity of back and neck pain and provides unique insights. Health care practitioners play an essential role in preventing chronic disability, related unemployment, poverty, pain among workers by accepting, treating, monitoring, communicating with patients, filing forms in an accurate and timely manner supporting access to social security (paid leave, insurance, workers' compensation) and providing opinions on return to work. To do this well they must attend to the changing world of work and how this is affecting the health and options of their patients including how the latter engage with the health care system, with their families and with their work.

Above all, whatever new knowledge emerges from our work, we have learned that broad implementation of best practices is still an enormous challenge[7] that requires much time, effort, and resources, and that there are a variety of complex interacting factors that make simple solutions impossible. Our collective research has resulted in tremendous progress in our understanding of which treatment strategies are effective and which are not. This new knowledge, which is now included in most guidelines, has not been seriously integrated into practice due to a variety of barriers, that include (1) failure to educate clinicians and patients about which treatments are safe and effective; (2) getting insurers to design their coverage policies that incentivize clinicians to offer patients best-practice treatments and to disincentivize clinicians from offering high-cost, low-value and risky treatments; and (3) ensuring that the providers of safe and effective treatments are accessible to patients and that clinicians understand their value and how they can comfortably refer patients to them.

The Forum has always welcomed researchers from multiple scientific fields—and stressed the importance of developing consensus among major disciplines and professional groups, along with policy makers, patients, and the general public. Speakers at the Forum have repeatedly emphasized that if the field is to make progress, these groups need to move forward together. As researcher Jan Hartvigsen noted at the close of the Québec Forum, "We need to tear down the silos between healthcare professions, researchers and clinicians, clinicians and patients, and healthcare systems and social systems." In this spirit, it would be helpful to conduct similar surveys of researchers and clinicians from other professional groups—to gauge the breadth of agreement on key research priorities. There may indeed be differences with other spine research societies, such as those whose memberships are dominated by spine surgeons, or professional societies representing different health care disciplines or practice environments. That type of survey would pose complex logistical challenges in a siloed field that embraces numerous research and clinical professions. However, it is a worthy goal for future research.

CONCLUSION

The International Forum for Back and Neck Pain Research in Primary Care gathers a group of leading, active back and neck pain investigators and clinicians from several countries. The 16th meeting of the Forum offered an opportunity to assess the state of the field and examine the evolution of research priorities. While the quantity and quality of research on back and neck pain has improved over the years, the research priorities seem to be similar to those that were identified at the first Forum 25 years ago. Large research efforts have allowed the discarding of many useless or even deleterious interventions for nonspecific low back pain (e.g. overuse of diagnostic imaging,[32–34] opioids,[35] corticosteroid injections,[26,27,36] antiepileptic drugs[37–39]). Now that we know what does not work, we need to focus more on the development and study of what does. Given the number and size of the challenges, the joint efforts of all stakeholders seem more important than ever.

List of participants to the survey on research priority update: Michele Battié, Jeffrey Borkan, Rachelle Buchbinder, André Bussières, Dan Cherkin, Pierre Côté, Peter Croft, Richard Deyo, Clermont Dionne, Kate Dunn, Manuela Ferreira, Simon French, Doug Gross, Margreth Grotle, Aage Indahl, Jan Hartvigsen, Jonathan Hill, Steve Kamper, Bart Koes, Francisco Kovacs, Pierre Langevin, Hugo Massé-Alarie, Chris Maher, Birgitta Öberg, Anne-Marie Pinard, Tamar Pincus, Kadija Perreault, Glenn Pransky, Shmuel Reis, Michel Rossignol, Jean-Sébastien Roy, Mark Schoene, Kjersti Storheim, Martin Underwood, Maurits van Tulder.

➢ Key Points

- ❑ The International Forum on Back and Neck Pain Research in Primary Care was first held in Seattle 25 years ago.
- ❑ In 2021, most research priorities identified from earlier decades are still pertinent.
- ❑ The need for integration of physical and psychological interventions represents a key challenge, as is the need to better understand the biological mechanisms underlying back and neck pain to develop more effective interventions.
- ❑ Stemming the tide of back and neck pain in low- and middle-income countries and avoiding the adoption of low value interventions appear particularly acute.
- ❑ Given the size of the challenges ahead, the joint efforts of all stakeholders in the field are more important than ever.

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