Global Spine Care Initiative: An International and Interprofessional Delphi Process to Develop a Model of Care

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Co-authors:
Spine Conditions & Concerns

Low back and neck pain
Spine Conditions & Concerns

- Low back and neck pain
- Other spine disorders
Spine Conditions & Concerns

- Low back and neck pain
- Risk factors and comorbidities for spine conditions
- Other spine disorders
Current Spine Care Model

- Eminence-based
- Provider-centered
- Silos
- Pain-centered
- Reactive
- Invasive
- Expensive
68 spine experts

Multiple professions

57 clinicians

36 countries
Principles
GSCI Principles of Spine Care

- Person centered
- Self-sustaining
- Biopsychosocial
- Integrated
- Proactive
- People centered
- Evidence-based
- Collaboration
Best Evidence

Principles
Literature Reviews

- Global burden
- Burden in LMIC
- Assessment
- Psychosocial issues
- Prevention
- Non-invasive interventions
- Invasive interventions
Model of Care
Best Evidence
Principles
All Spine Concerns

Proportion of the Population

- Majority
- Many
- Some
- Few

Level of Spine Care

- Self-care and Community Programs
  - Cost: lowest cost per person
  - Concerns: preventable spinal disorders (e.g., injury, osteoporosis)
  - Providers: community health workers and public health personnel
  - Interventions: education, patient self-care, community programs
  - Prevention: health education programs, national policies

- Primary care
  - Cost: low cost per person (compared to secondary and tertiary)
  - Concerns: common spinal disorders (e.g., non-specific back/neck pain)
  - Providers: primary care personnel
  - Interventions: education, health coaching, noninvasive care
  - Prevention: prevent chronicity, manage comorbidities, reduce risk factor

- Secondary care
  - Cost: moderate cost per person
  - Concerns: spinal disorders requiring specialty care (e.g., chronic pain)
  - Providers: specialists, hospital/clinic personnel
  - Interventions: coordinated, interprofessional specialty care
  - Prevention: reduce severity, manage comorbidities, address risk factors

- Tertiary/Quaternary care
  - Cost: highest cost per person
  - Concerns: complex spinal disorders (e.g., trauma, infection, cancer)
  - Providers: integrated inter/multidiscipline care teams
  - Interventions: advanced diagnostics, interventions, and rehabilitation
  - Prevention: prevent morbidity and mortality
Majority

- **Cost**: lowest cost per person
- **Concerns**: preventable spinal disorders (e.g., injury, osteoporosis)
- **Providers**: community health workers and public health personnel
- **Interventions**: education, patient self-care, community programs
- **Prevention**: health education programs, national policies
Many

Primary care

- **Cost**: low cost per person (compared to secondary and tertiary)
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Proportion of the Population | Level of Spine Care
--- | ---
Some | Secondary care
- Cost: moderate cost per person
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Few | Tertiary/Quaternary care
- Cost: highest cost per person
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Classification, Care Pathway

Model of Care

Best Evidence

Principles
1. Signs or symptoms of serious or systemic pathology?  
   - YES → Class V  
     - Va acute/severe  
     - Vb slowly progressive  
     - Vc non-spinal pathology
   - No → Class IV  
     - IVa stable  
     - IVb symptomatic
2. Spinal deformity?  
   - NO → Class III  
     - IIIa non-progressive  
     - IIIb acute/progressive  
     - IIIc chronic
   - YES → Class III  
   - NO → Class II
3. Neurological symptoms?  
   - NO → Class II  
     - II moderate/severe pain  
     - II mild pain
   - YES → Class I
4. Pain?  
   - NO → Class I
   - YES → Class IV
5. Prevention concern?  
   - NO → Class I
   - YES → Class V

Assess/Treat

Acute/subacute - Class Ia
Mild Spine Pain (2 to 4/10 numeric pain scale)
Minimal interference with function or activities  
No neurologic deficits  
No serious or systemic pathology (no red flags)

Assess patient
- History  
- Clinical examination  
- Psychosocial flags  
- Risk factors and comorbidities
Consider providing patient
- Education about condition, reassurance, advice  
  to remain active, self-care instructions
- Manual therapy (short term)  
- Acupuncture (short term)  
- Supervised psychosocial therapy
- Non-opioid analgesics/muscle relaxants (short term)
Recommend patient self-care
- Therapeutic exercise  
- Heat/cold (home use)  
- Psychosocial self-care
- Prevention and comorbidity management
Follow up
How to implement
Classification, Care Pathway
Model of Care
Best Evidence
Principles
Self-care & Community programs

Primary spine care

Secondary

Tertiary

Old Model

GSCI
Implementation Steps

1. Identify and initial preparation
2. Assess current model and resources
3. Plan how to transition to the new model
4. Implement with pilot first
5. Assess and evaluate outcomes
6. Sustain program and scale up
Implementation Steps

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Assess current model and resources

Purple = who is the focus of the care?
Blue = what type of care is given by health care provider?
Green = in what manner is spine care delivered?
Assess current model and resources

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EXAMPLE: Proactive

- Providers follow steps in care pathway?
- Providers perform prevention activities?
- Community leaders include prevention practices in policies?

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Blue = what type of care is given by health care provider?
Green = in what manner is spine care delivered?
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<table>
<thead>
<tr>
<th>Purpose:</th>
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<tbody>
<tr>
<td>Clarify issues and problems with stakeholders and local community:</td>
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<th>Strategic principles:</th>
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<th>RESOURCES (INPUTS)</th>
<th>OUTPUTS</th>
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<tr>
<td>What resources are needed?</td>
<td><strong>What is needed to implement?</strong></td>
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<th>PERSONNEL AND SKILLS</th>
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<td>EQUIPMENT AND SUPPLIES</td>
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<td>FACILITIES AND INFRASTRUCTURE</td>
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<td>COMMUNITY AND SOCIETAL RESOURCES</td>
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<td>FUNDING RESOURCES</td>
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<th>OUTCOMES</th>
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<td>Short term outcomes</td>
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<td>Intermediate outcomes</td>
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<td>Long-term outcomes</td>
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<th>IMPACT</th>
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<td>What are Vision and Goals?</td>
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Educational Resources

Class 0a
Concerns about developing symptoms or requesting information on the prevention of spine pathology or spine-related disability.

Class 0b
Concerns about developing symptoms or requesting information on the prevention of spine pathology or spine-related disability.

Consider providing
Educate about condition, reassurance, educate about risk factors and comorbidity management.

Recommended self-care
Pain-free activities, avoid hazardous risk factors.

Follow up and refer if needed

Self-care and Community Programs
Person has spine-related concern or need, applies self-care. Concern remains or worsens, seek help from healthcare worker, initial screening by self or first contact provider.

Resolution or stabilization
Provider performs triage, identify class.

Primary Spine Care
History and exam to confirm subclass and management.

Secondary and Tertiary Spine Care
If red flags, emergency, or condition worsens, collaborate with appropriate level of care, such as emergency department, specialist, multidisciplinary, or tertiary care. When complete, return to primary provider when indicated.

Intervention and periodic assessments
Diagnosis, shared decision-making, education and management plan.
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Resources made available for free

- Classification system
- Care Pathway
- Implementation steps
- Checklists
Limitations and Next Steps
Thank you to the sponsors of this initiative