

Global Spine Care Initiative:

Evidence-based Spine Care in Daily Practice

Presenters:



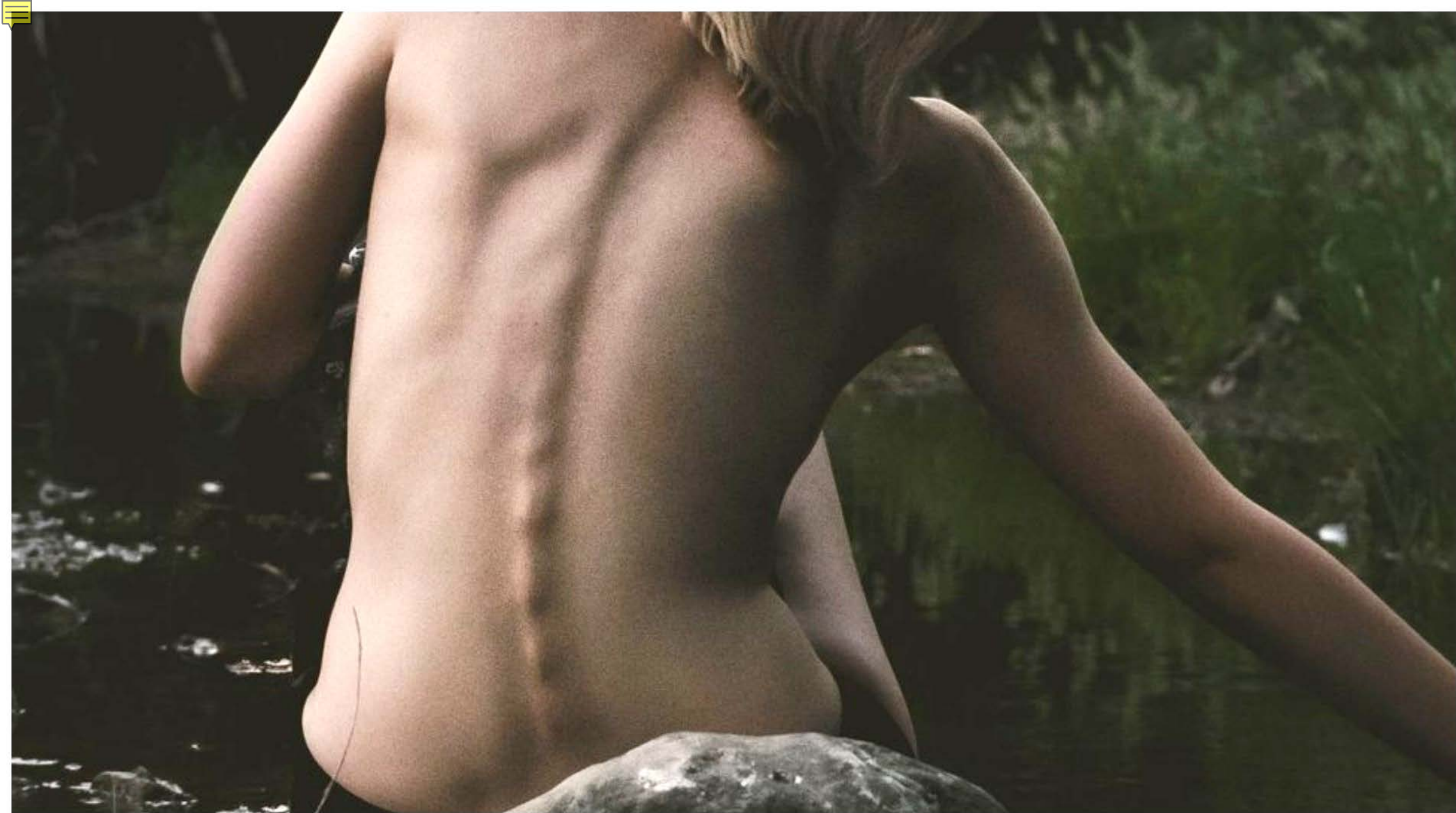
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Bart Green, DC, MEd, PhD



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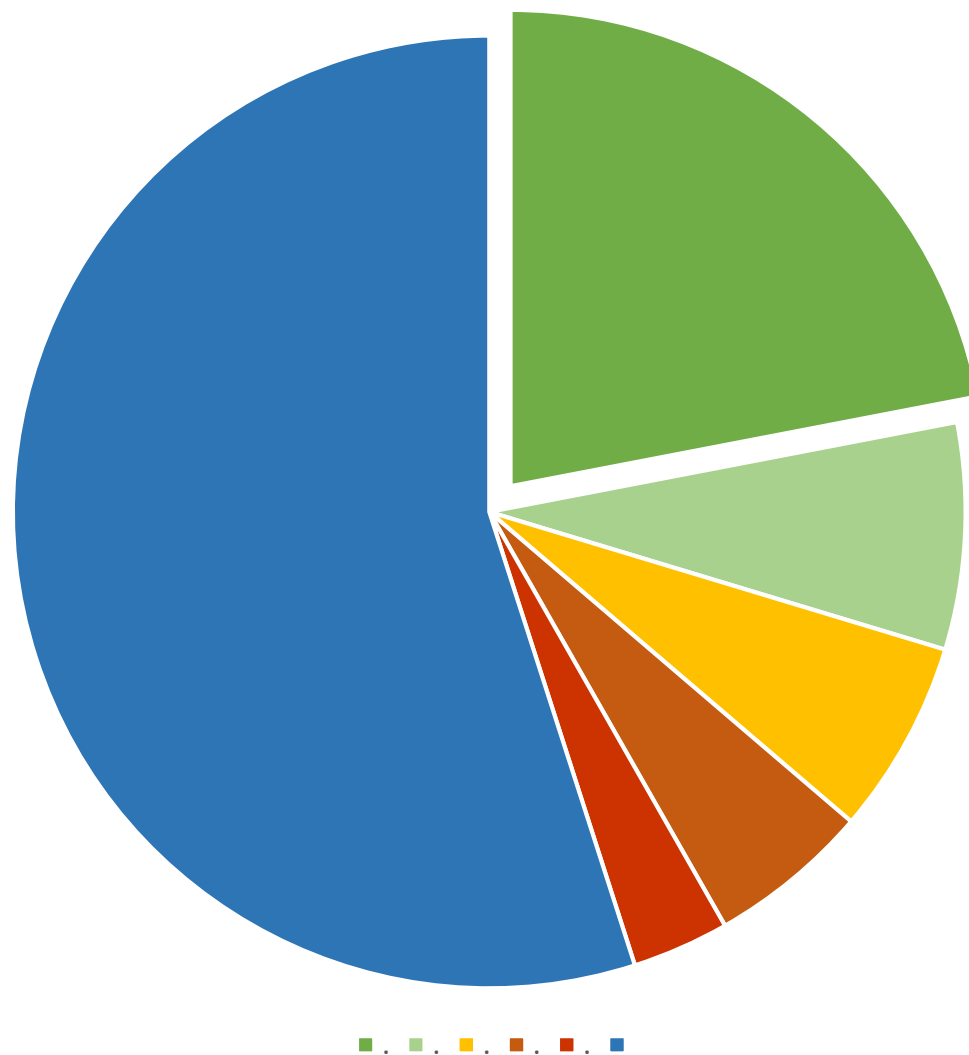
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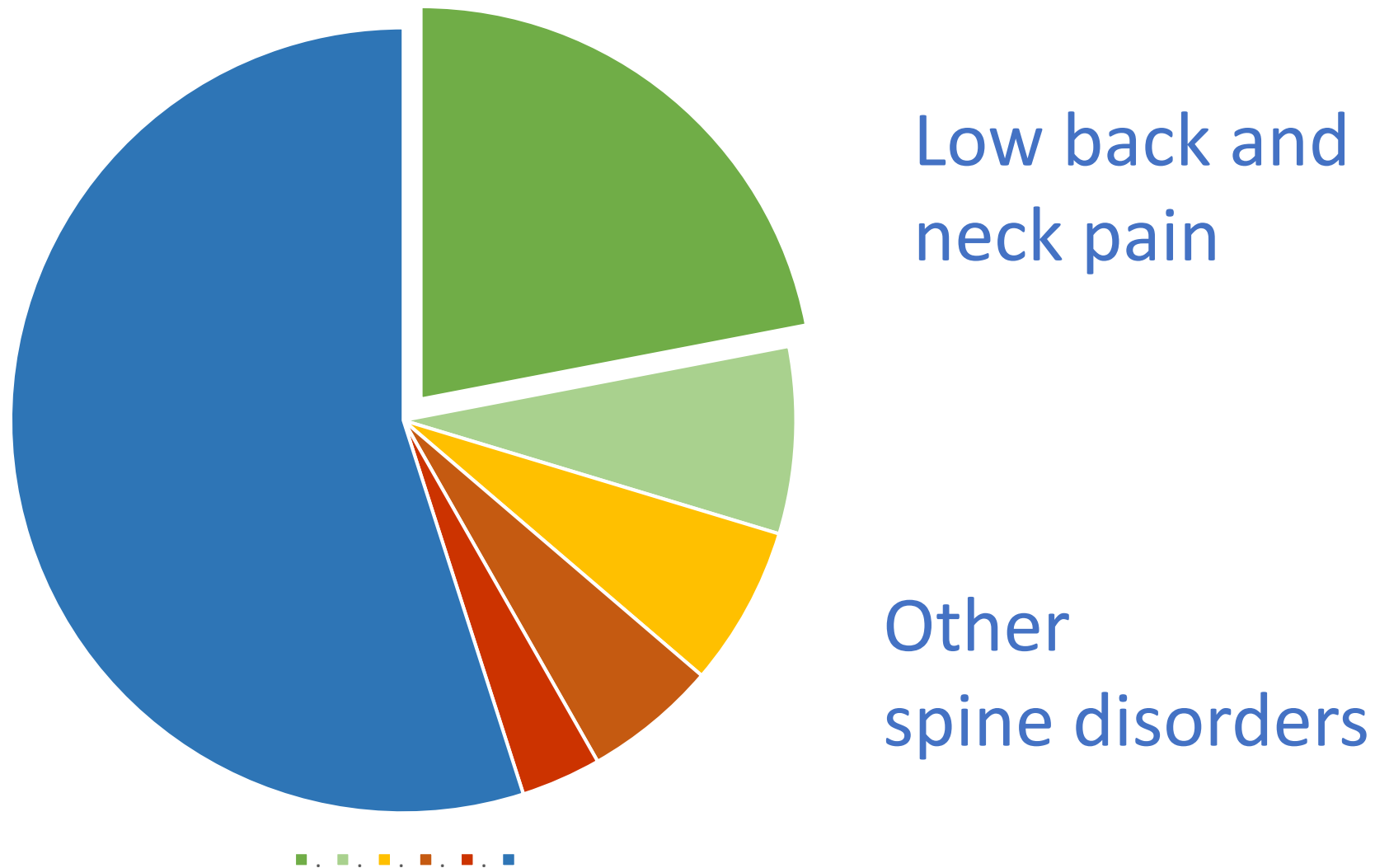
Spine Conditions & Concerns



Low back and
neck pain



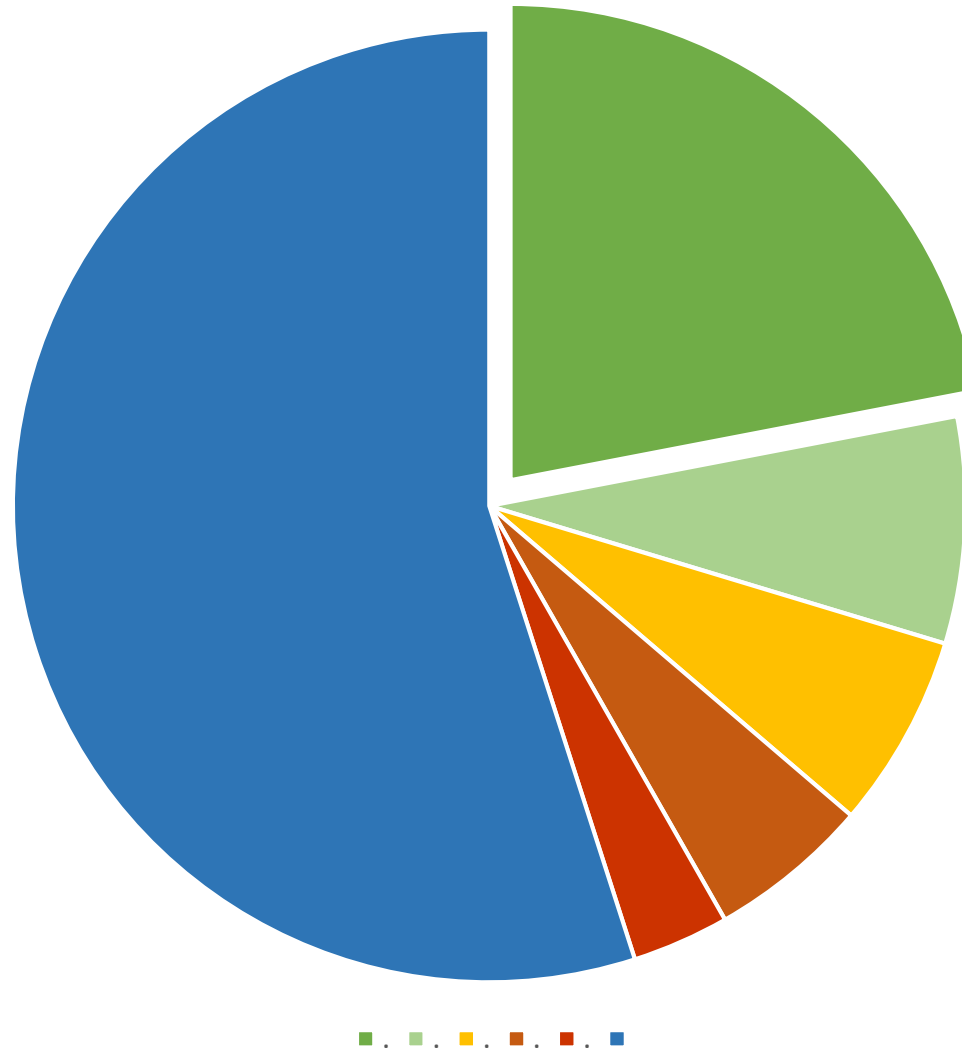
Spine Conditions & Concerns





Spine Conditions & Concerns

Risk factors and
comorbidities for
spine conditions

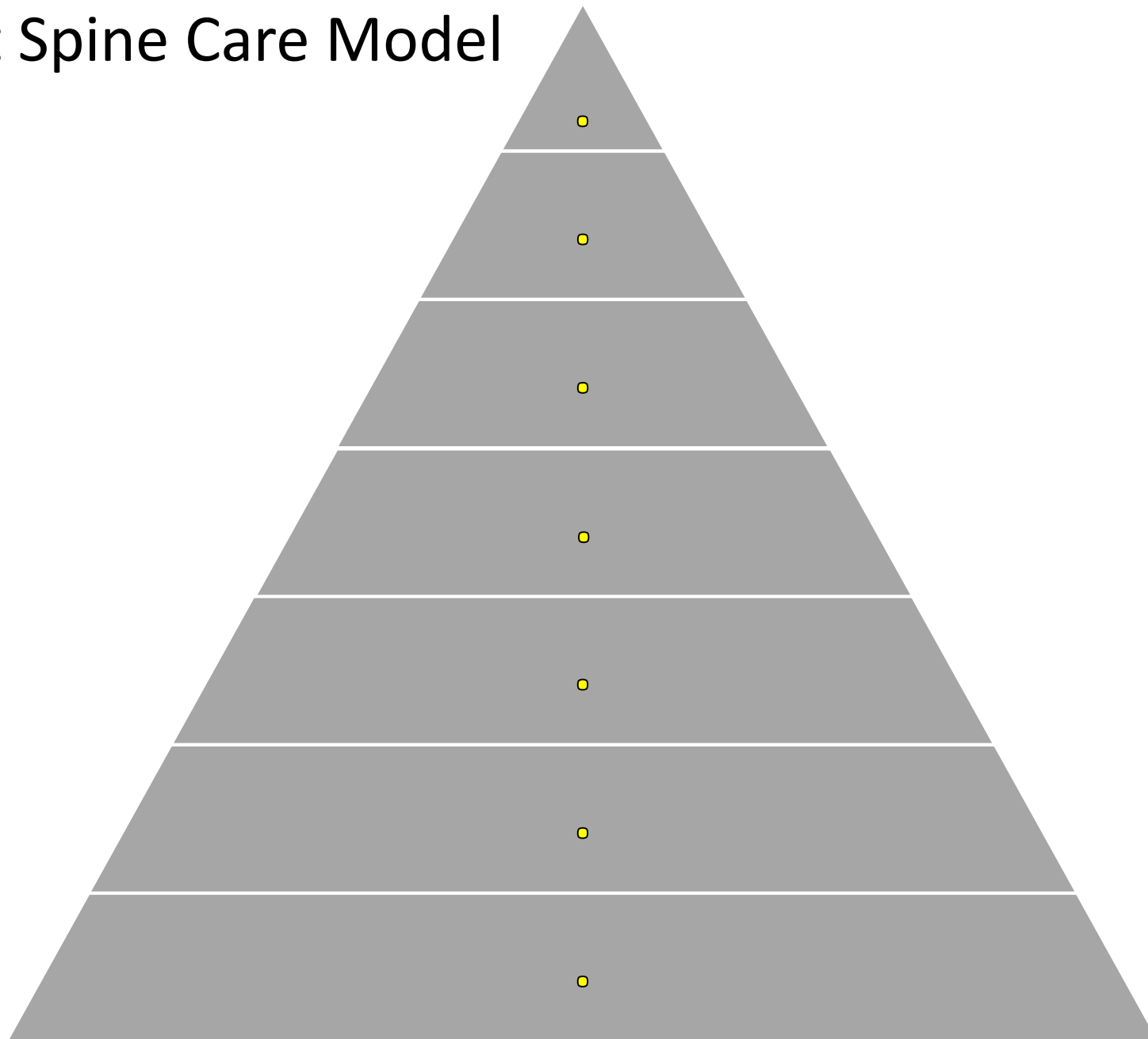


Low back and
neck pain

Other
spine disorders



Current Spine Care Model



Eminence-based

Provider-centered

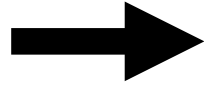
Silos

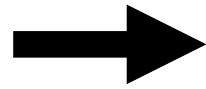
Pain-centered

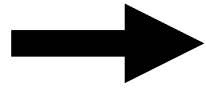
Reactive

Invasive

Expensive









GSCi

Global Spine Care Initiative

68 spine experts

Multiple professions

57 clinicians

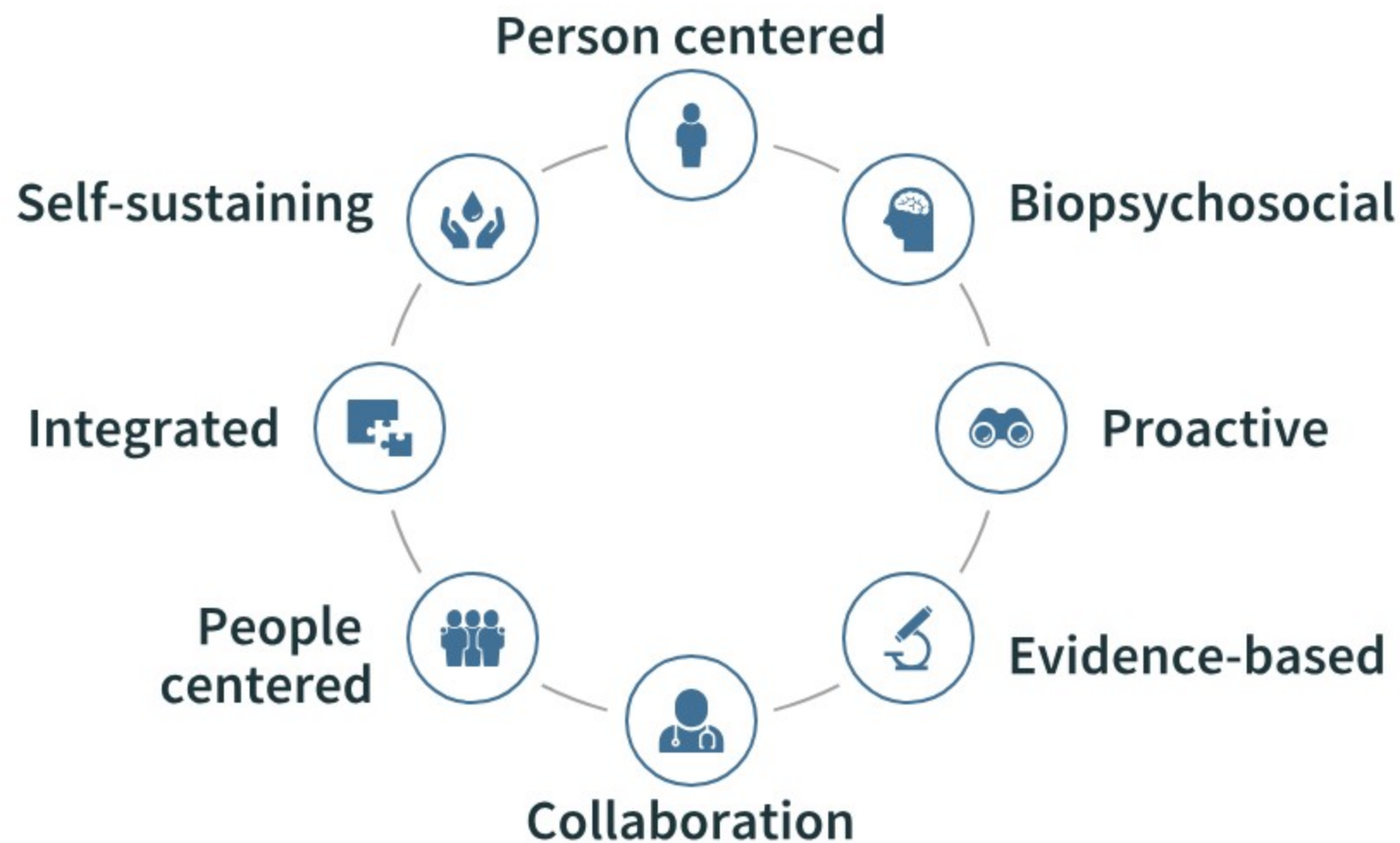
36 countries





Principles

GSCI Principles of Spine Care





Best Evidence

Principles



Literature Reviews

- Global burden
- Burden in LMIC
- Assessment
- Psychosocial issues
- Prevention
- Non-invasive interventions
- Invasive interventions

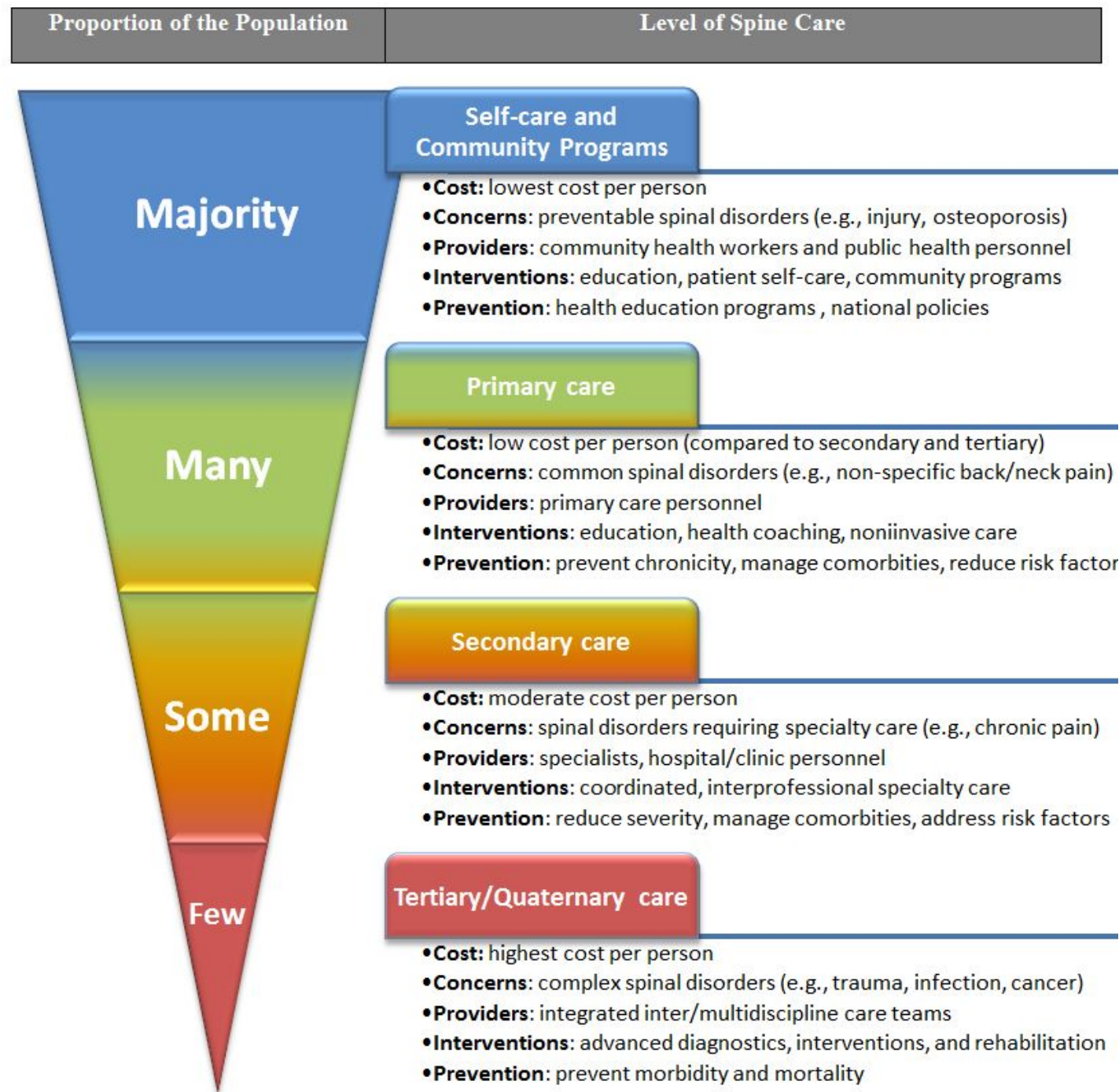
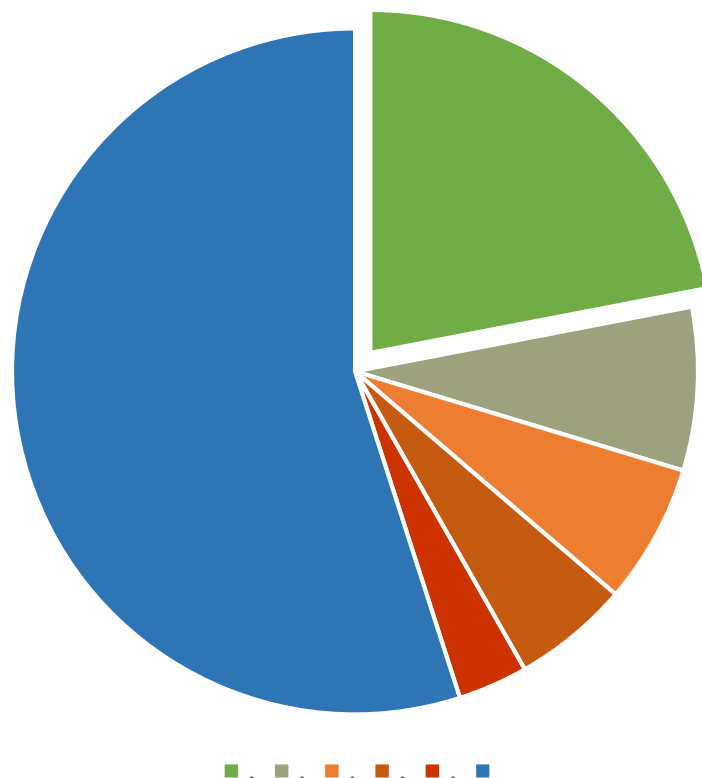


Model of Care

Best Evidence

Principles

All Spine Concerns



Proportion of the Population

Level of Spine Care

Majority

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

Proportion of the Population

Level of Spine Care

Many

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

Proportion of the Population

Level of Spine Care

Some

Secondary care

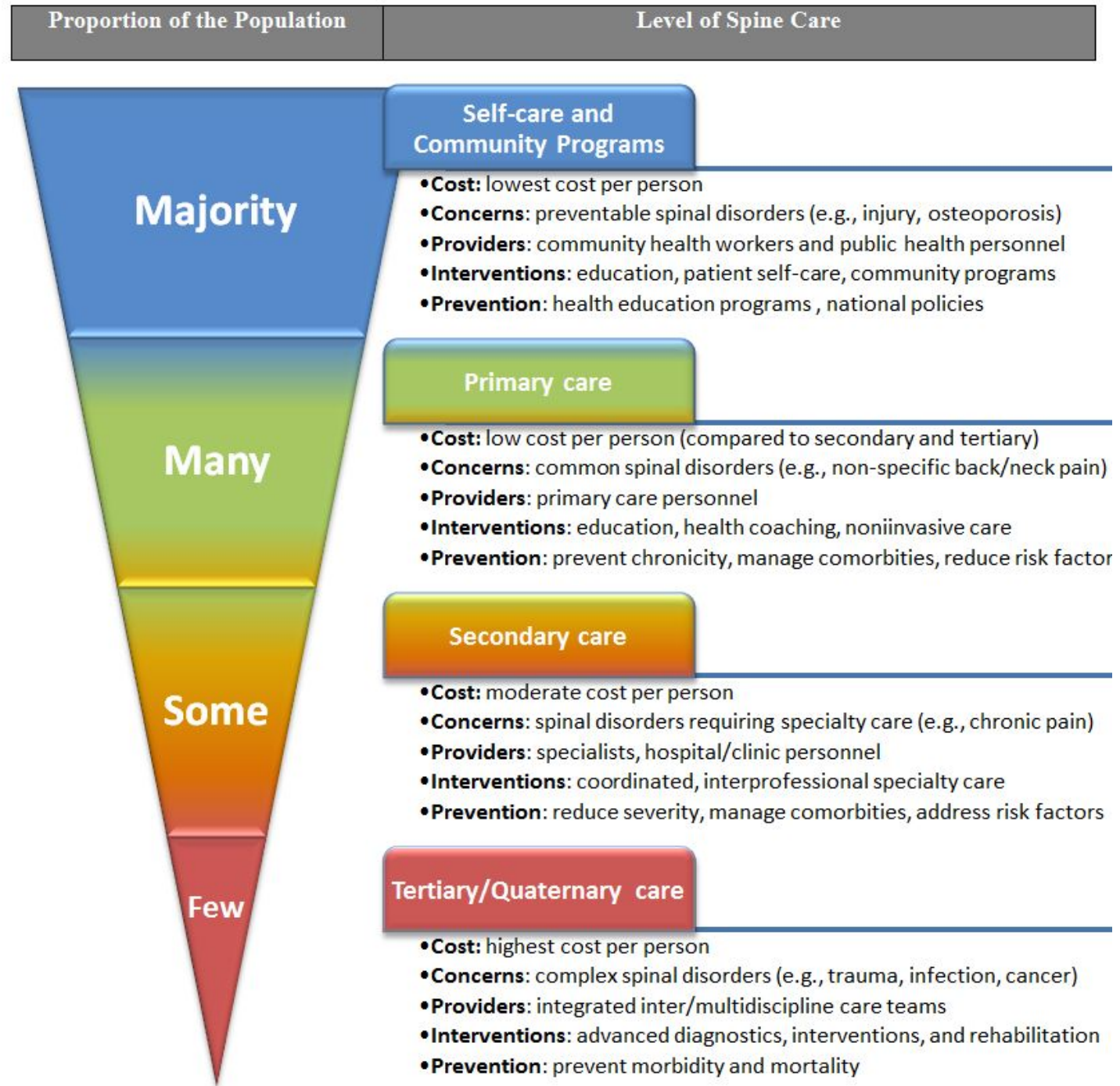
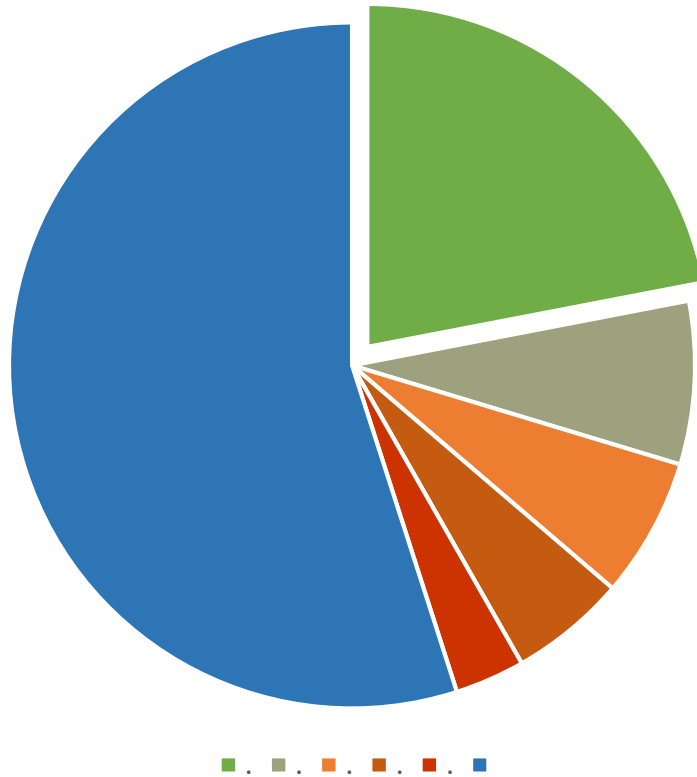
- **Cost:** moderate cost per person
- **Concerns:** spinal disorders requiring specialty care (e.g., chronic pain)
- **Providers:** specialists, hospital/clinic personnel
- **Interventions:** coordinated, interprofessional specialty care
- **Prevention:** reduce severity, manage comorbidities, address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

Few

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

All Spine Concerns





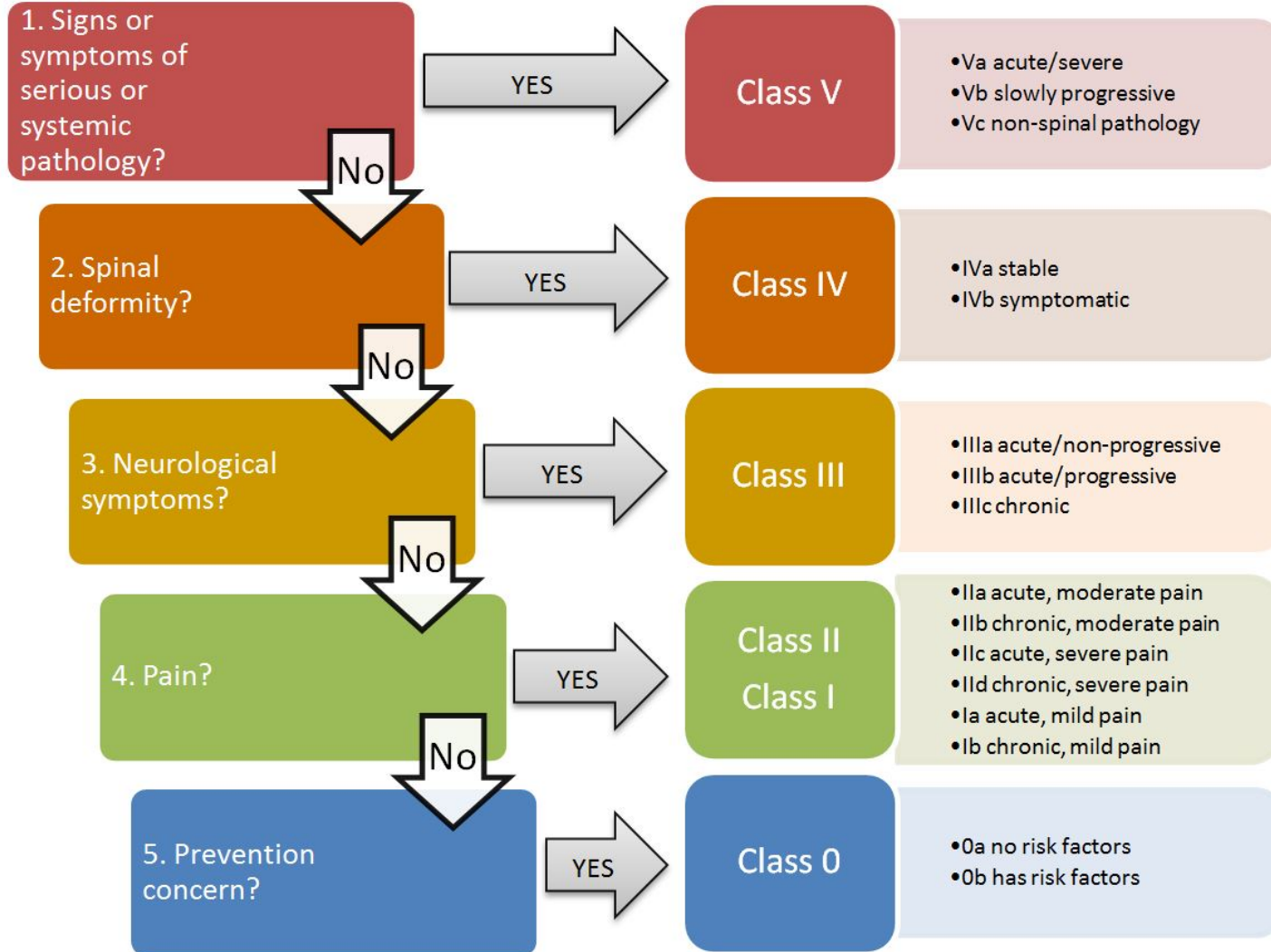
Classification, Care Pathway

Model of Care

Best Evidence

Principles

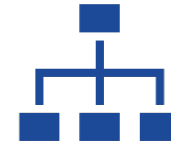
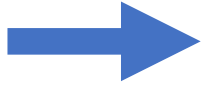
Classification and Care Pathway



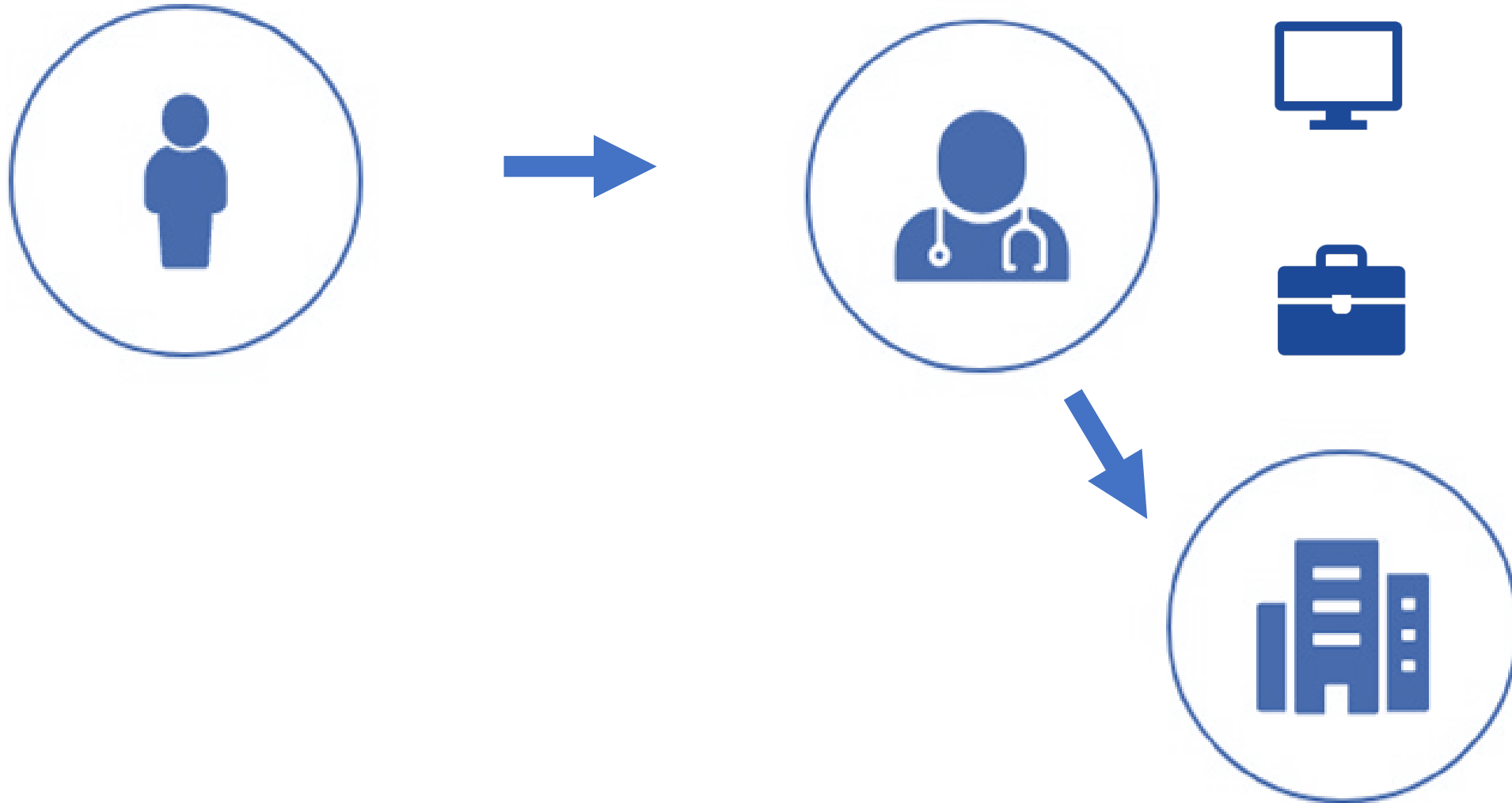
Assess and
Treat

Class Ia Acute/subacute Mild Spine Pain (1 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 and referral if needed

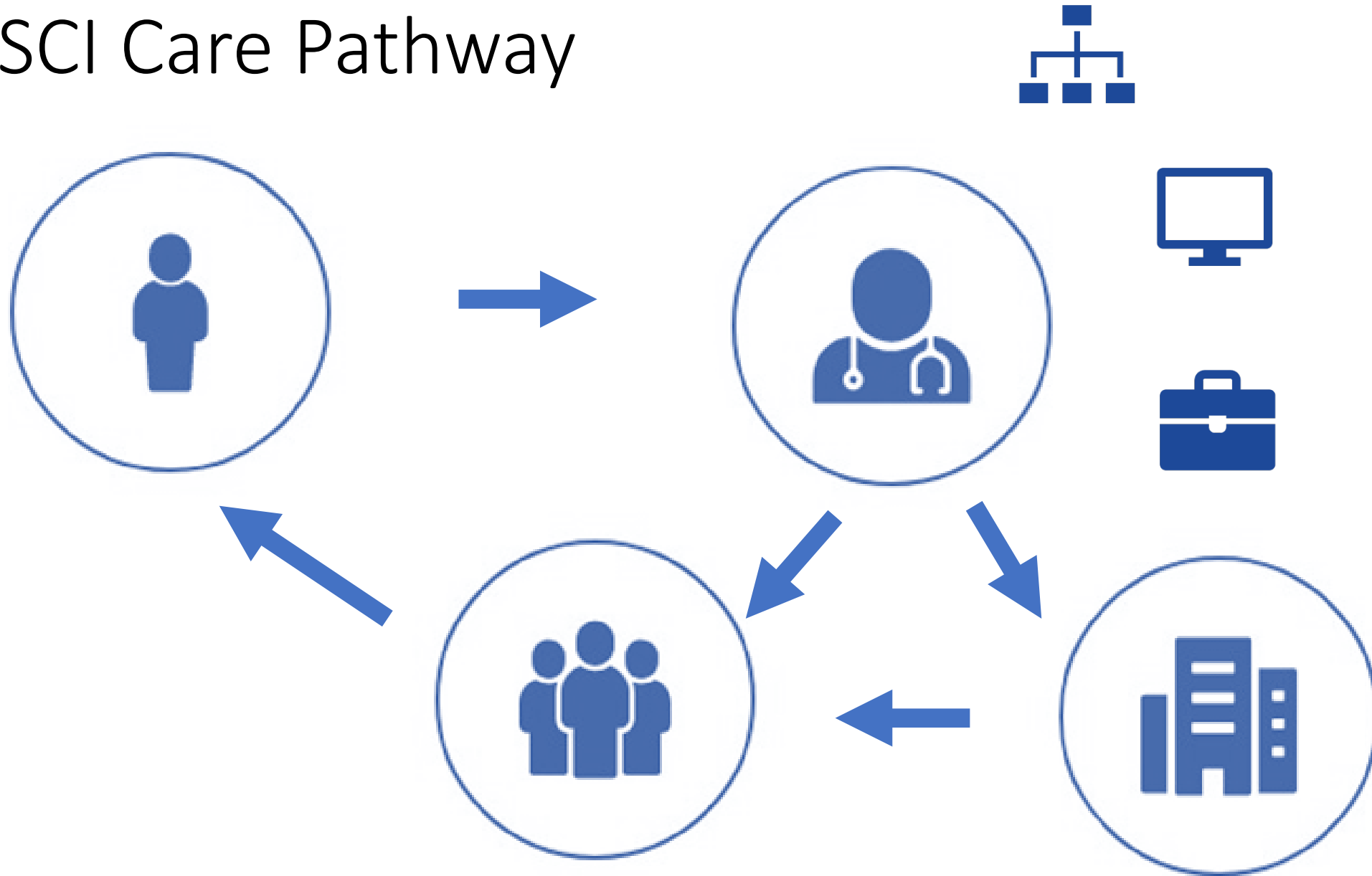
GSCI Care Pathway



GSCI Care Pathway

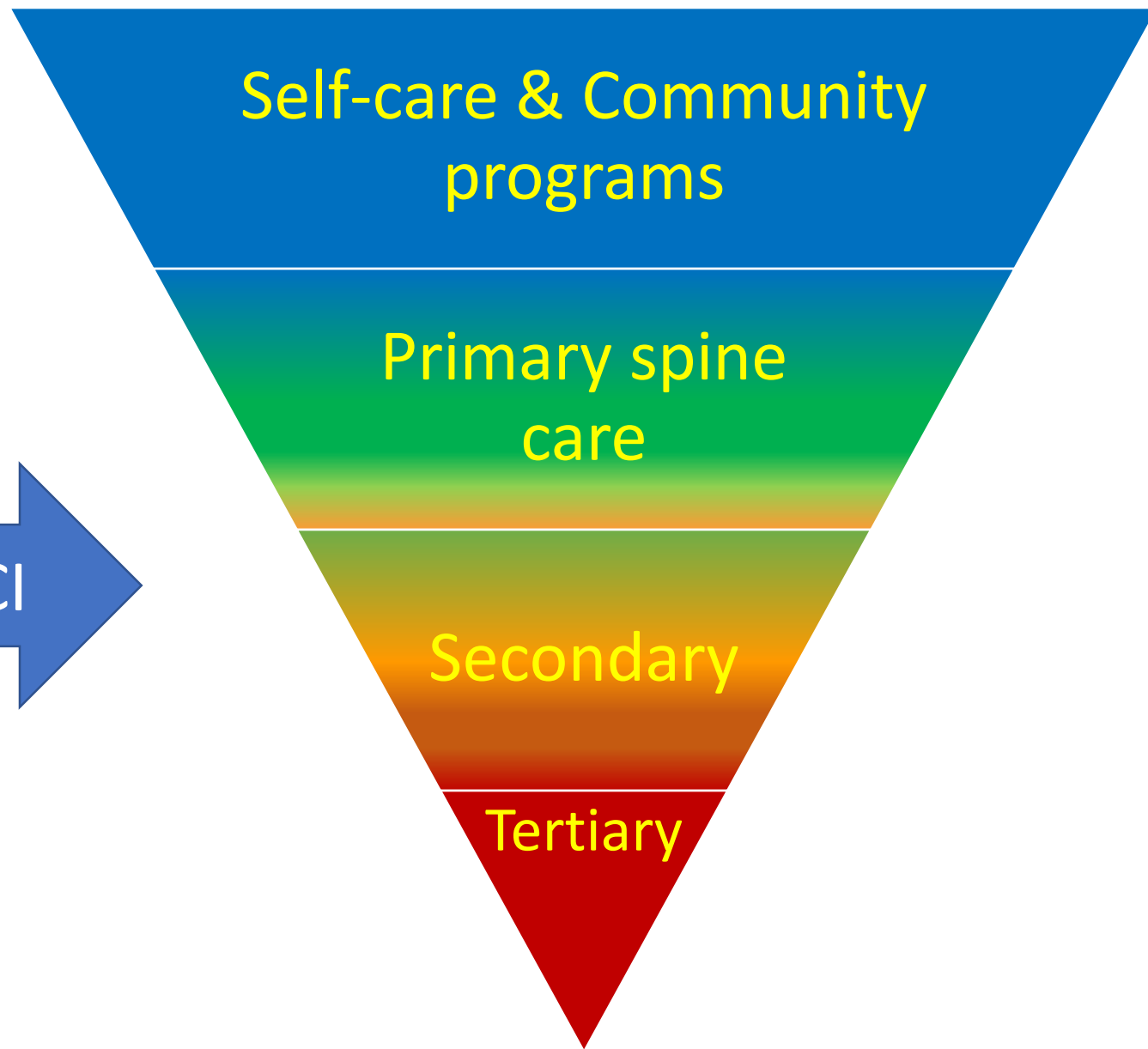
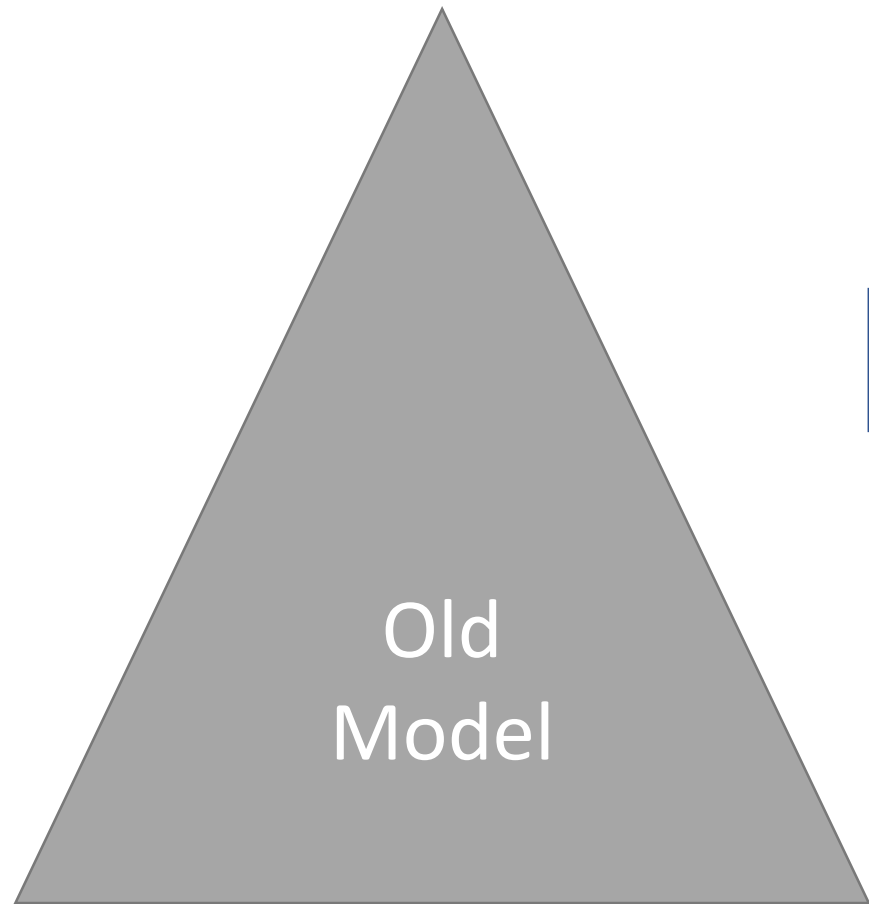


GSCI Care Pathway

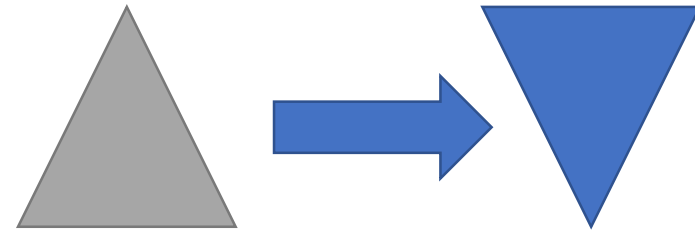




How to implement
Classification, Care Pathway
Model of Care
Best Evidence
Principles

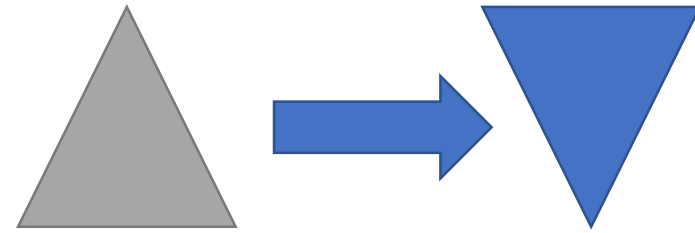


Implementation Steps



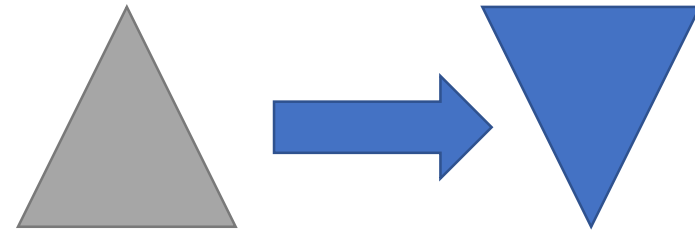
1. Identify and initial preparation
2. Assess current model and resources
3. Plan how to transition to the new model
4. Implement with pilot first
5. Assess and evaluate outcomes
6. Sustain program and scale up

Implementation Steps



1. Identify and initial preparation
- 2. Assess current model and resources**
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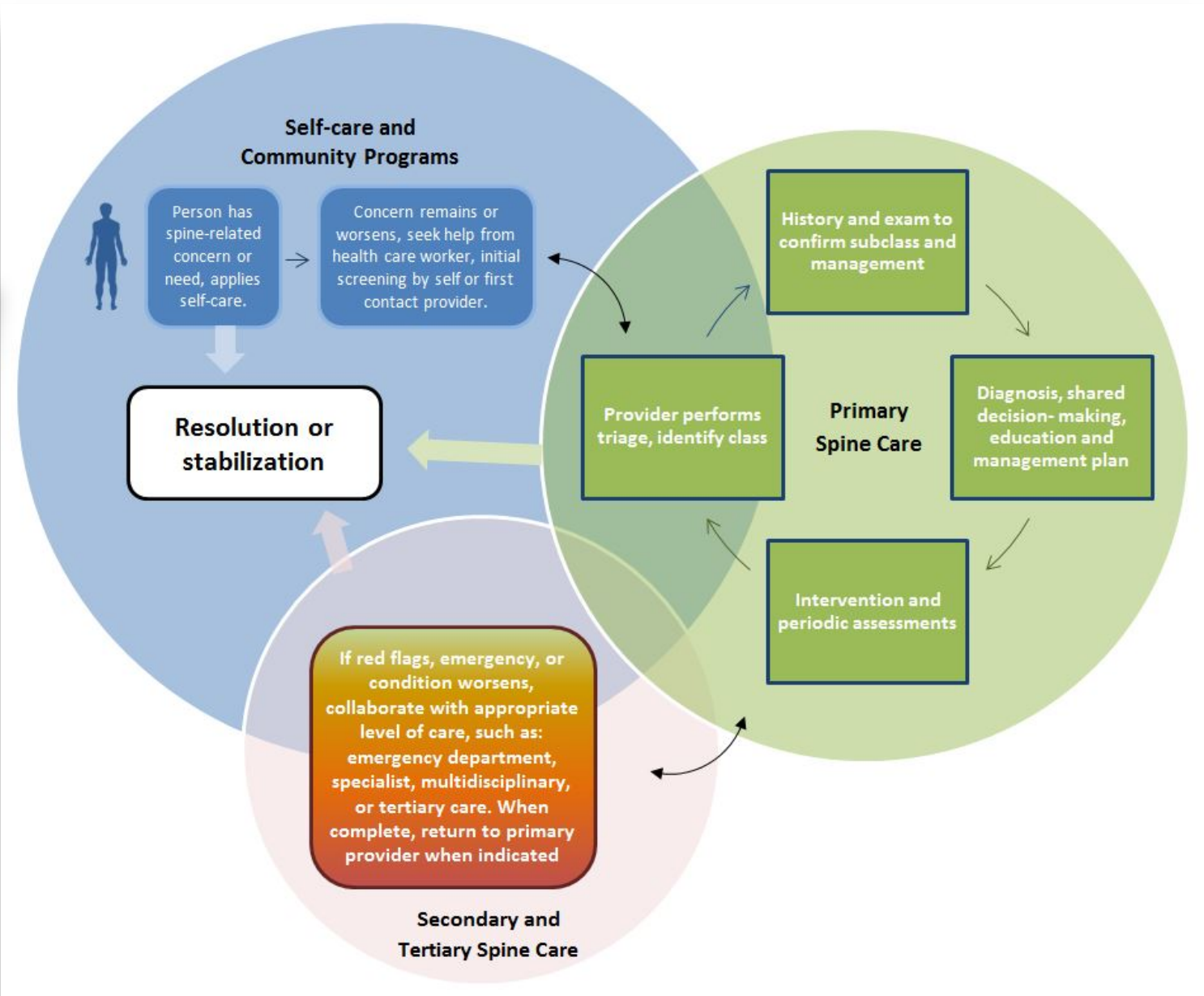
Implementation Steps



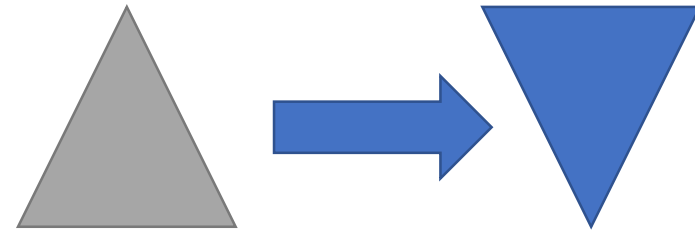
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Educational Resources

<p>Class 0a</p> <p>Concerns about developing symptoms, or is requesting information on the prevention of spinal pathology, spinal pain, or spine-related disability</p> <p>No evidence of risk factors for spine disorders or pain</p> <p>No or minimal spine-related symptoms</p> <p>No interference with function</p> <p>No neurologic deficits</p> <p>No serious or systemic pathology (no red flags)</p> <p>Assess patient</p> <p>Brief history about concern</p> <p>Risk factors and comorbidities</p> <p>Consider providing</p> <p>Educate about condition, reassurance</p> <p>Educate about risk factors and comorbidity management</p> <p>Recommended self-care</p> <p>Stay active</p> <p>Avoid modifiable risk factors</p> <p>Follow up and referral if needed</p>	<p>Class 0b</p> <p>Concerns about developing symptoms, or is requesting information on the prevention of spinal pathology, spinal pain, or spine-related disability</p> <p>No evidence of risk factors for spine disorders or pain</p> <p>No or minimal spine-related symptoms</p> <p>No interference with function</p> <p>No neurologic deficits</p> <p>No serious or systemic pathology (no red flags)</p> <p>Assess patient</p> <p>Brief history about concern</p> <p>Risk factors and comorbidities</p> <p>Consider providing</p> <p>Educate about condition, reassurance</p> <p>Educate about risk factors and comorbidity management</p> <p>Recommended self-care</p> <p>Stay active</p> <p>Avoid modifiable risk factors</p> <p>Follow up and referral if needed</p>	<p>Class 1a</p> <p>Concerns about developing symptoms, or is requesting information on the prevention of spinal pathology, spinal pain, or spine-related disability</p> <p>No evidence of risk factors for spine disorders or pain</p> <p>No or minimal spine-related symptoms</p> <p>No interference with function</p> <p>No neurologic deficits</p> <p>No serious or systemic pathology (no red flags)</p> <p>Assess patient</p> <p>Brief history about concern</p> <p>Risk factors and comorbidities</p> <p>Consider providing</p> <p>Educate about condition, reassurance</p> <p>Educate about risk factors and comorbidity management</p> <p>Recommended self-care</p> <p>Stay active</p> <p>Avoid modifiable risk factors</p> <p>Follow up and referral if needed</p>	<p>Class 1b</p> <p>Concerns about developing symptoms, or is requesting information on the prevention of spinal pathology, spinal pain, or spine-related disability</p> <p>No evidence of risk factors for spine disorders or pain</p> <p>No or minimal spine-related symptoms</p> <p>No interference with function</p> <p>No neurologic deficits</p> <p>No serious or systemic pathology (no red flags)</p> <p>Assess patient</p> <p>Brief history about concern</p> <p>Risk factors and comorbidities</p> <p>Consider providing</p> <p>Educate about condition, reassurance</p> <p>Educate about risk factors and comorbidity management</p> <p>Recommended self-care</p> <p>Stay active</p> <p>Avoid modifiable risk factors</p> <p>Follow up and referral if needed</p>
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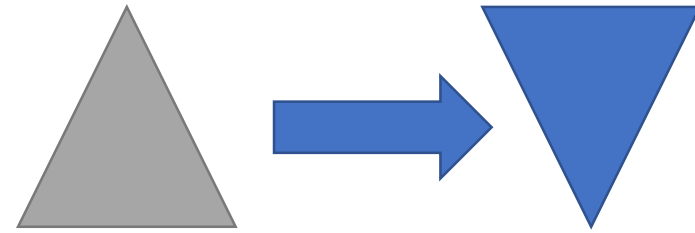


Implementation Steps



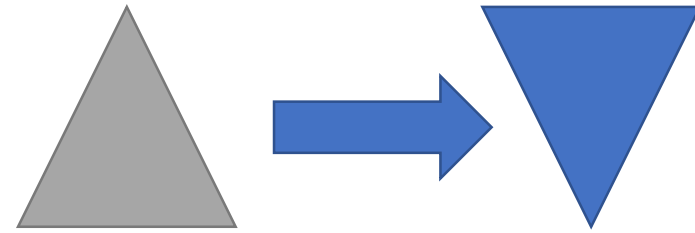
1. Identify and initial preparation
2. Assess current model and resources
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Implementation Steps



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Implementation Steps

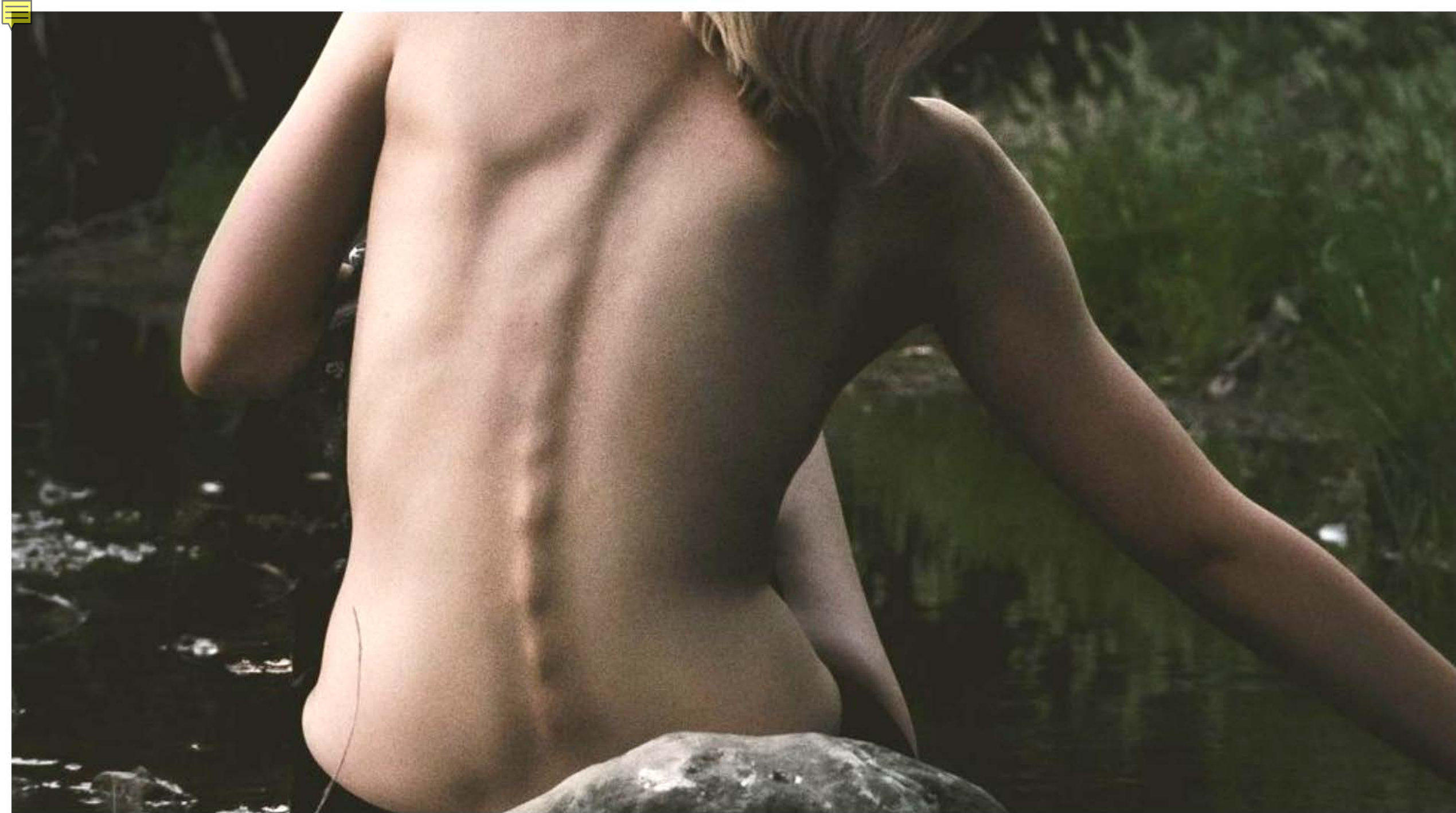


1. Identify and initial preparation
2. Assess current model and resources
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Resources made available for free

- Classification system
- Care Pathway
- Implementation steps
- Checklists





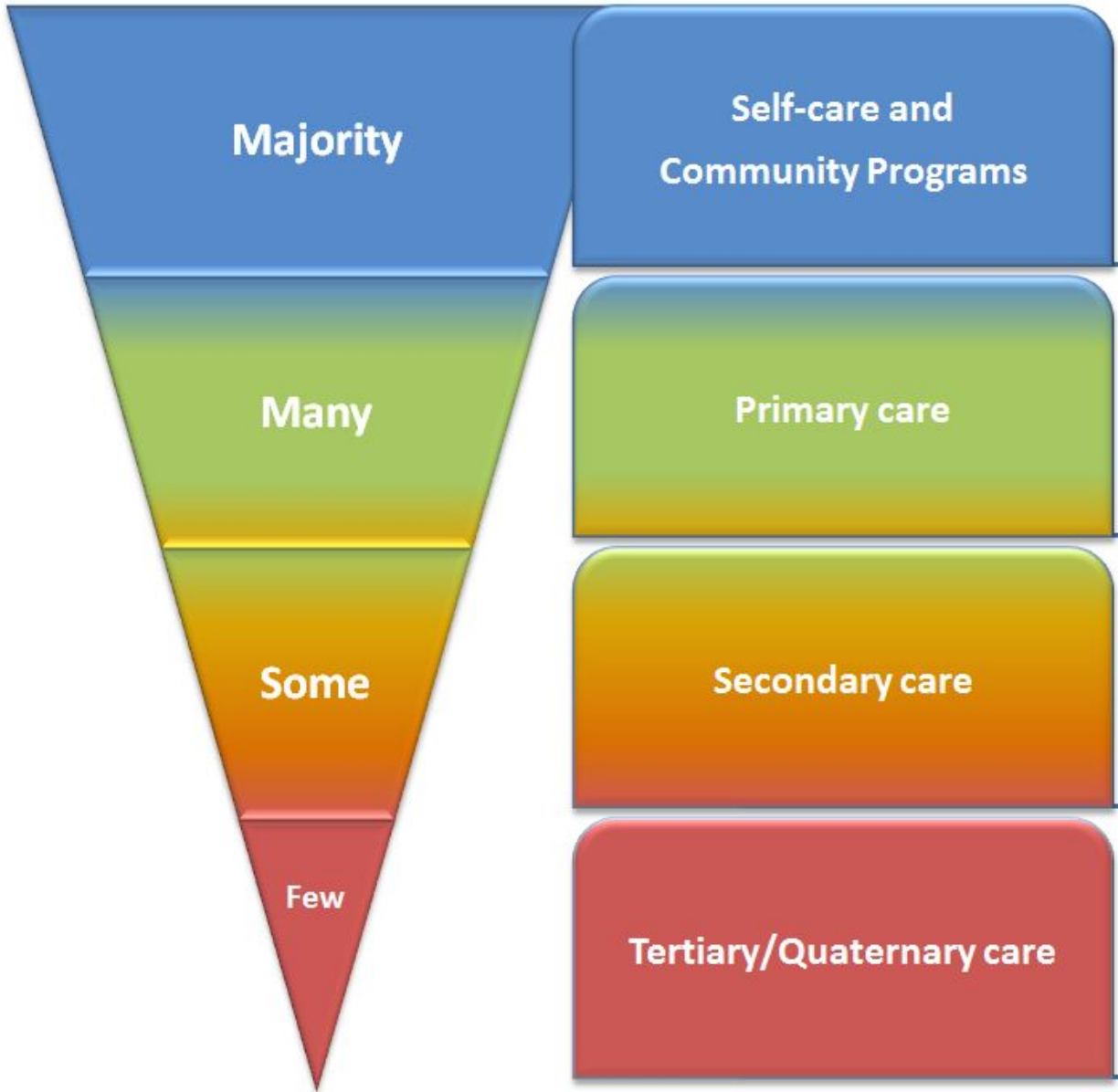
Incorporating the Global Spine Care Initiative Classification and Care Pathway into daily practice

You will be able to:

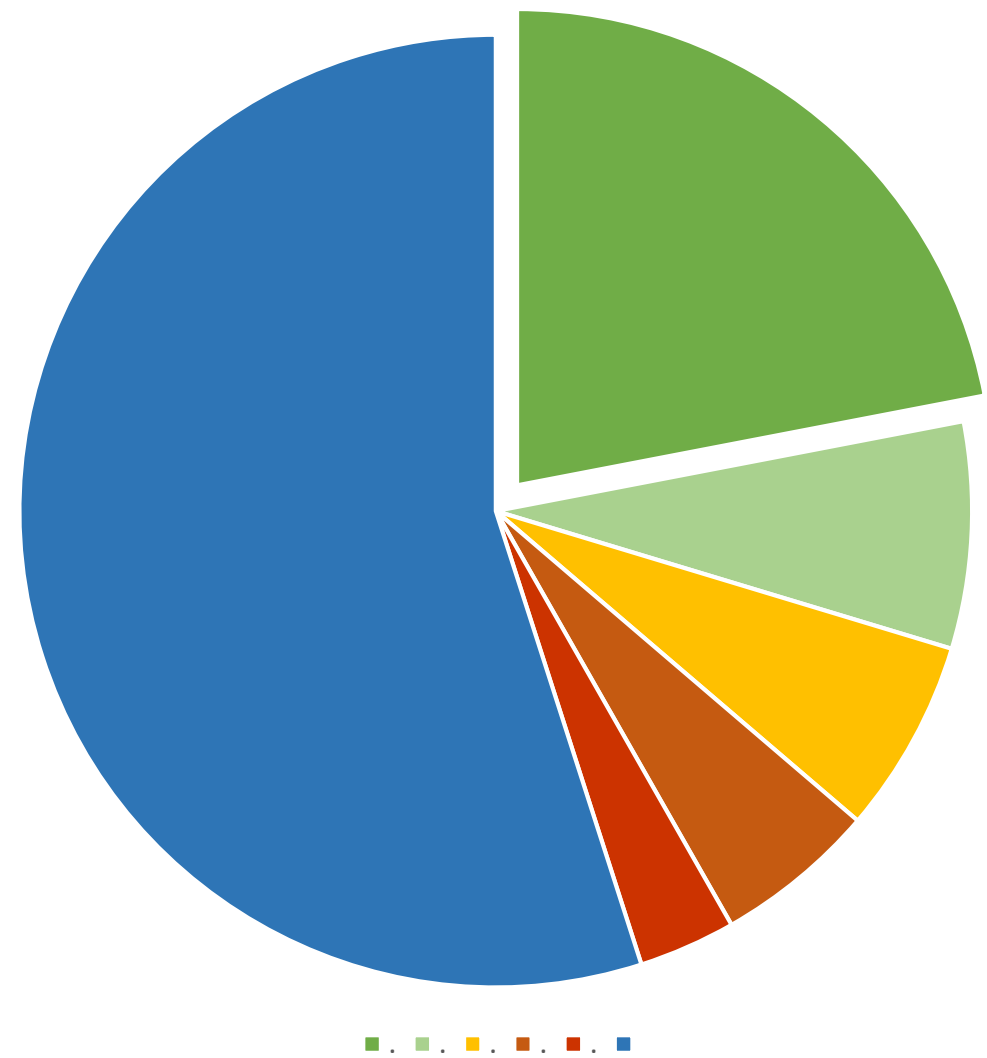
- Use the GSCI classification
- Apply the GSCI care pathway to sample cases



Proportion of Population	Level of Spine Care
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GSCI MoC = Right Care for the Right Person at the Right Time



Proportion of Population

Level of Spine Care

GSCI MoC = Right Care for the
Right Person at the Right Time

Majority

Self-care and
Community Programs

Many

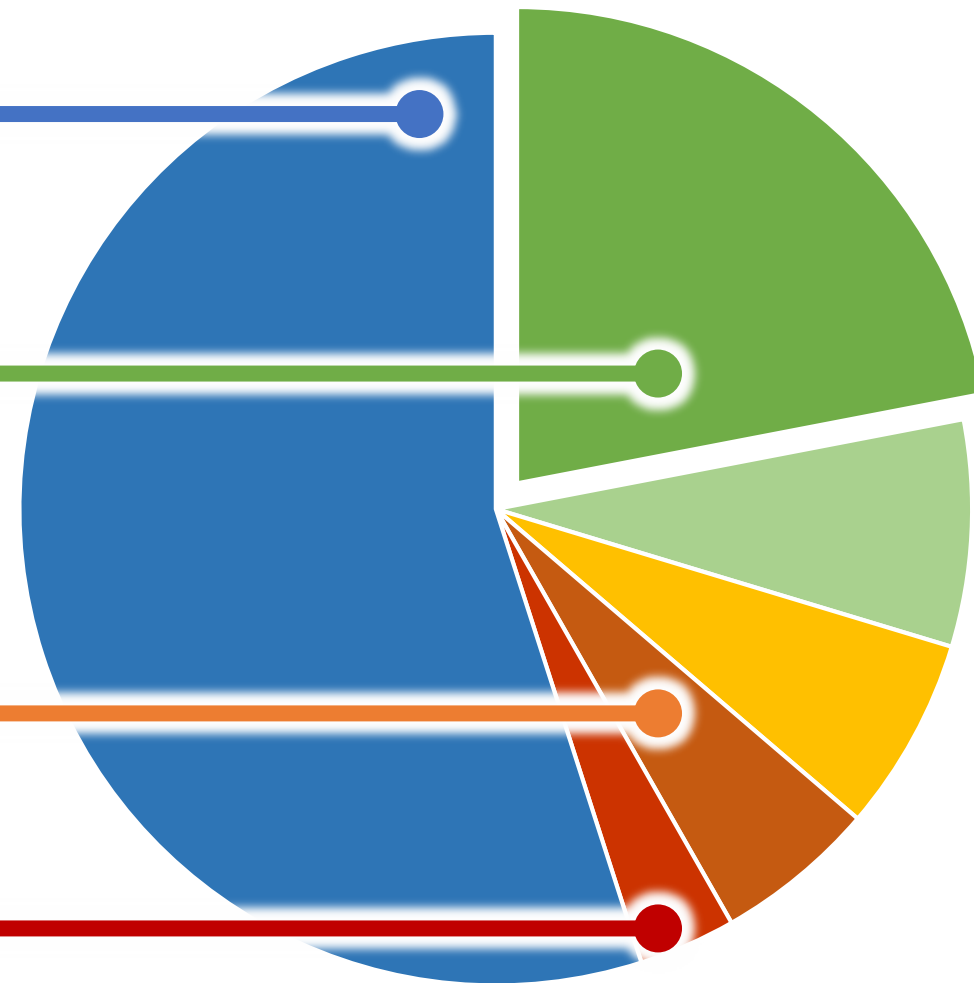
Primary care

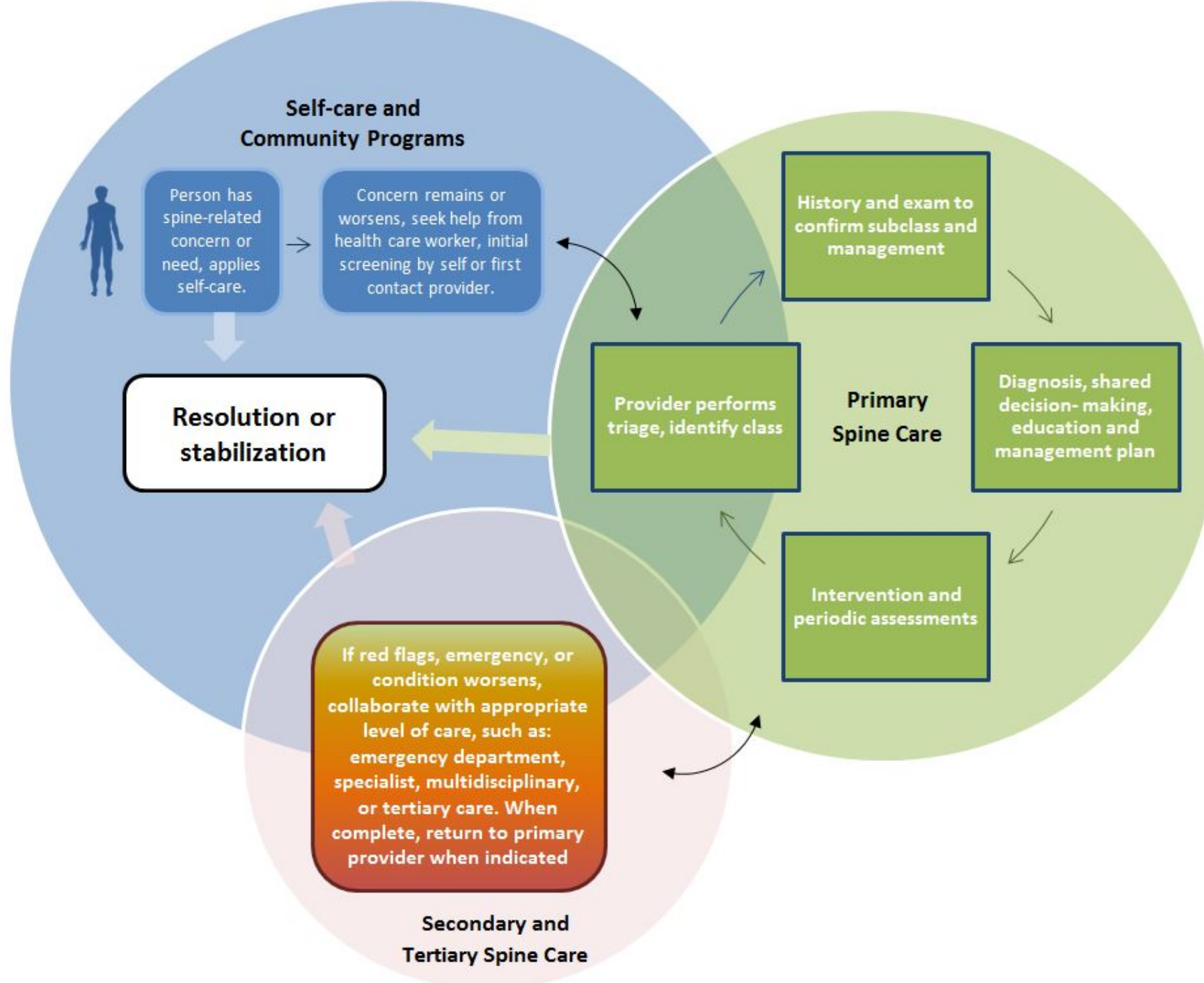
Some

Secondary care

Few

Tertiary/Quaternary care





- Right care, right person, right time
- Improves outcomes
- Contains costs

Step 1: Awareness

- Someone with a spine problem needs evidence-based information to know when to consider
 - self-care
 - professional or urgent care

Self-care and Community Programs



Person has spine-related concern or need, applies self-care.



Concern remains or worsens, seek help from health care worker, initial screening by self or first contact provider.

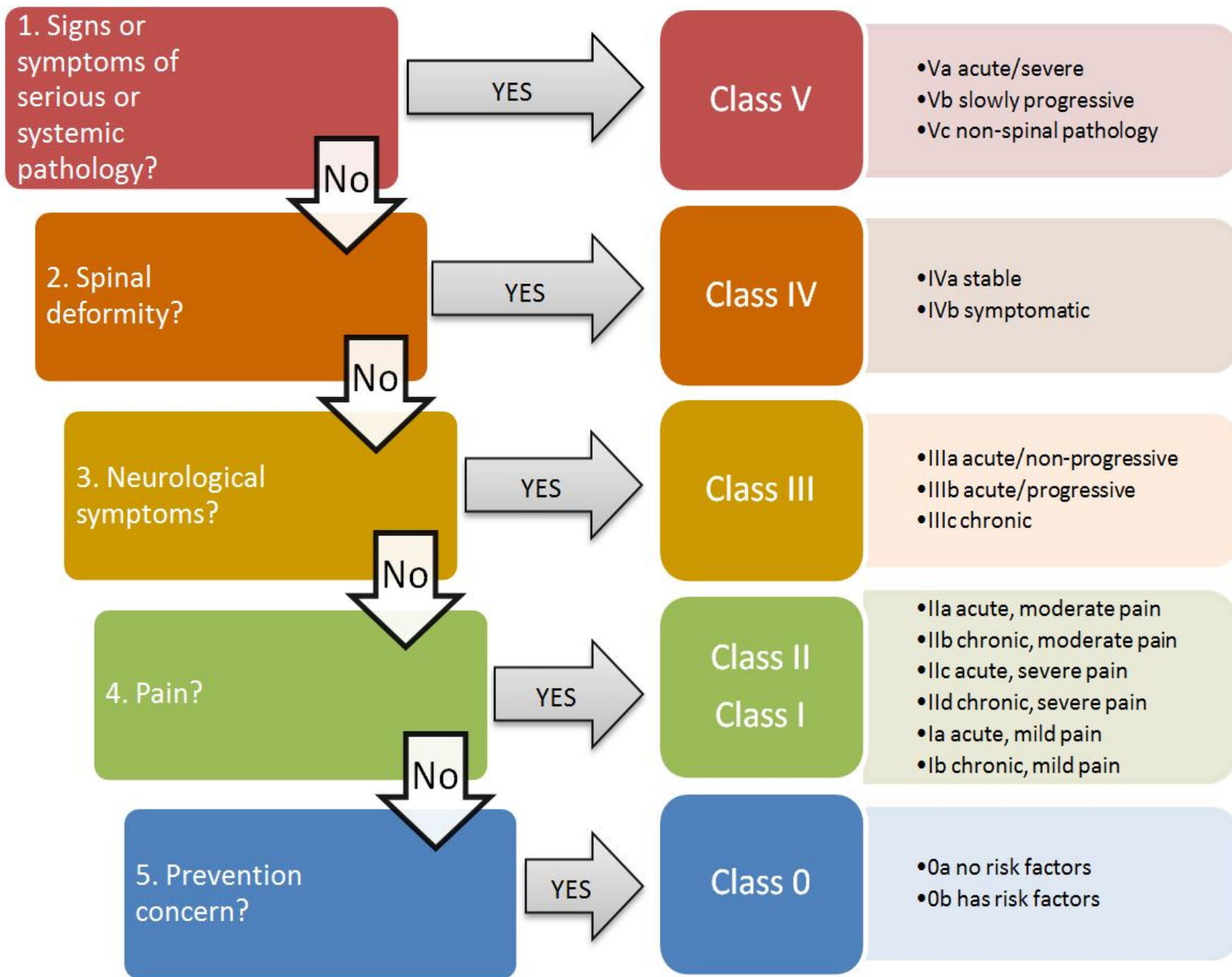


**Resolution or
stabilization**



Step 2: Initial Triage

- Done by the individual or others
- Screening questions identify major class of spinal disorder.



Step 3: Provider assessment

- Assessment
 - History
 - Identify psychosocial factors
 - Rule out serious pathology
 - Spine/neuro/ortho, general physical exam
 - If needed, diagnostic imaging or laboratory
- Identify subclass

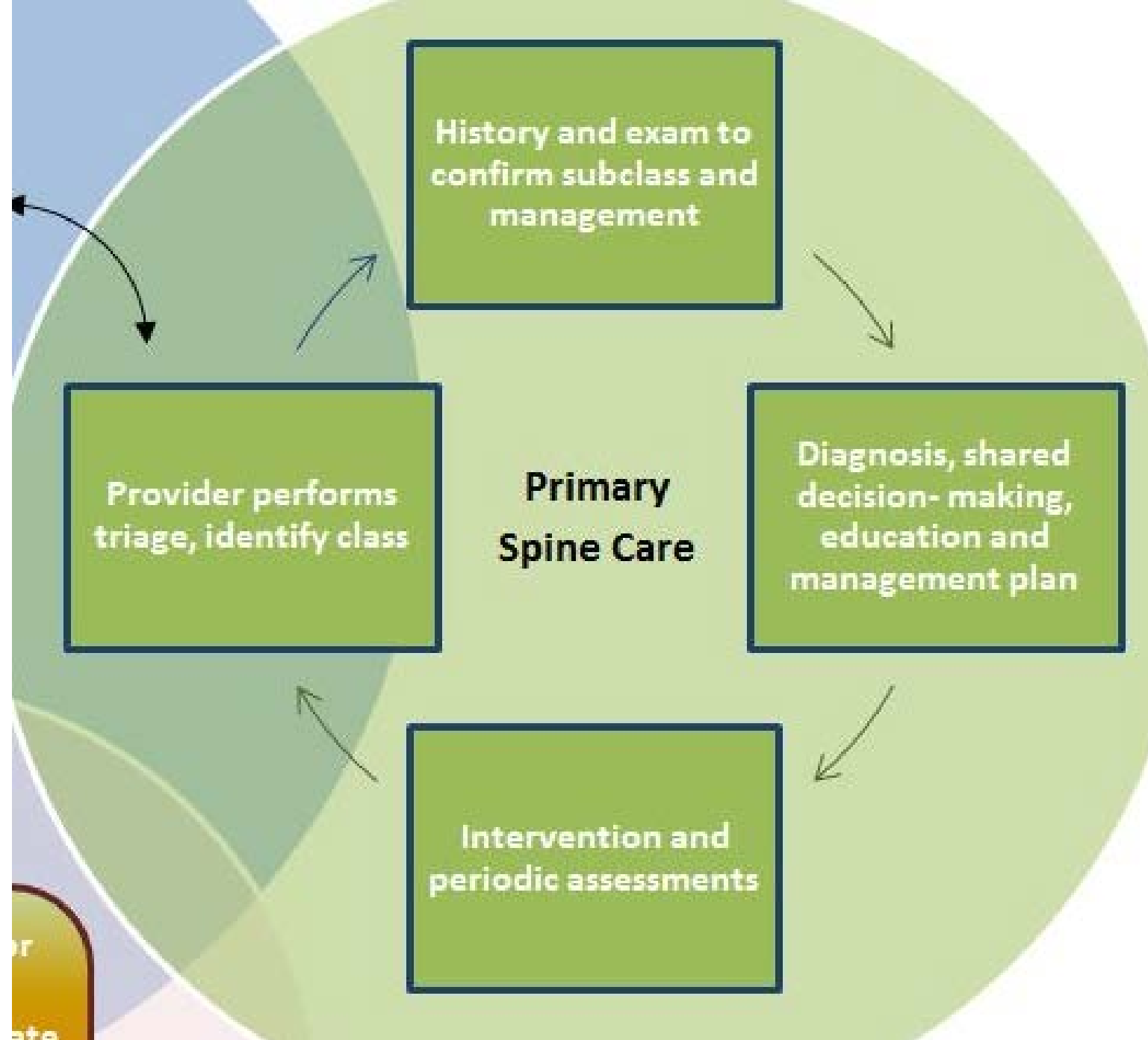
	Classification															
	Preventive health		Non-specific spine pain, with or without functional limitations						Neurological concerns			Structural deformity		Severe or systemic pathology		
	0a	0b	Ia	Ib	IIa	IIb	IIc	IId	IIIa	IIIb	IIIc	IVa	IVb	Va	Vb	Vc
Self-care, Community care	●	●	▲	▲	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Primary spine care	●	●	●	●	●	●	●	●	▲	◆	▲	●	◆	◆	◆	◆
Secondary spine care	◆	◆	◆	◆	◆	◆	◆	●	●	●	●	◆	●	▲	▲	▲
Tertiary spine care	◆	◆	◆	◆	◆	◆	◆	●	●	●	●	◆	▲	●	●	●

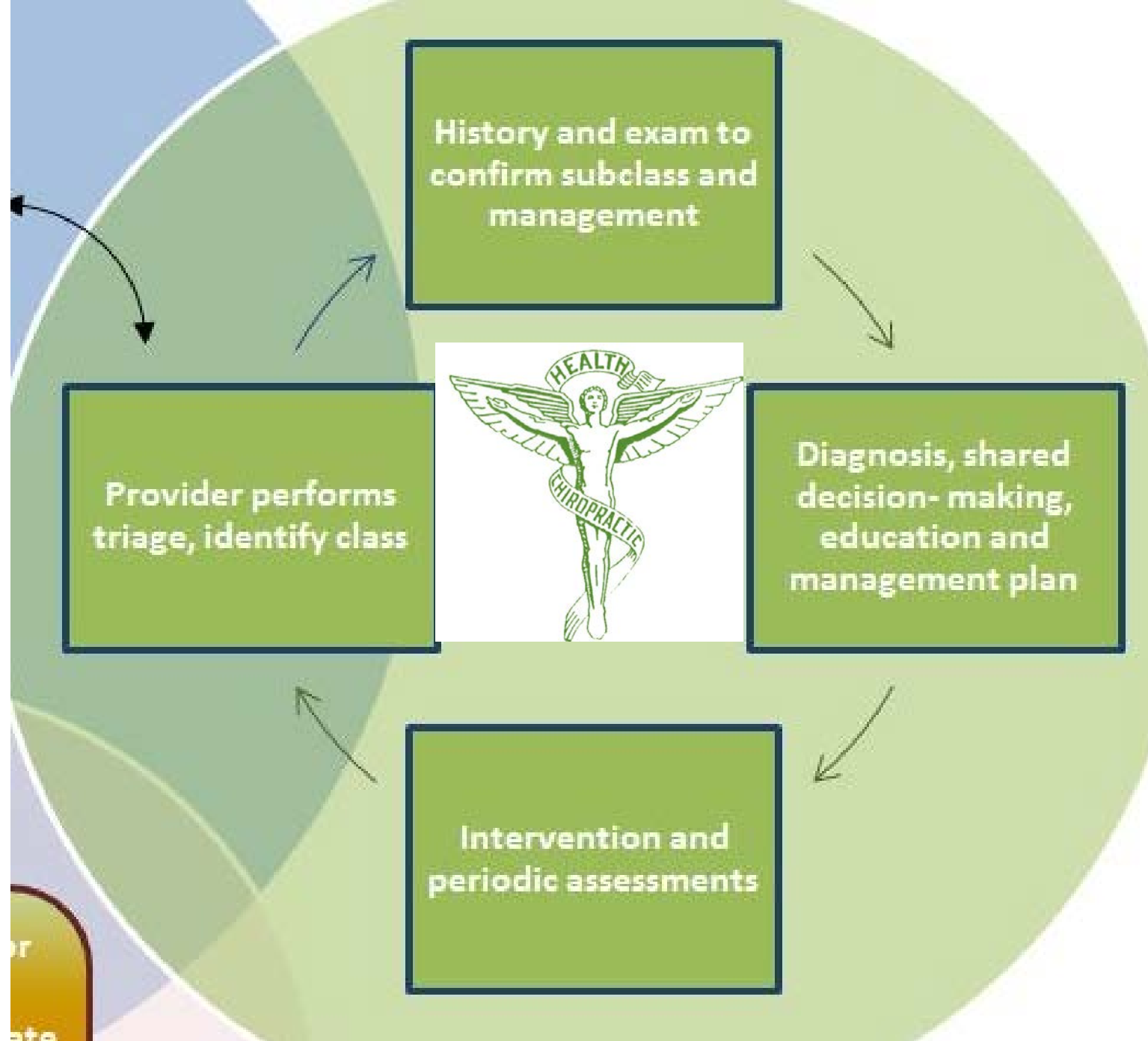
Legend

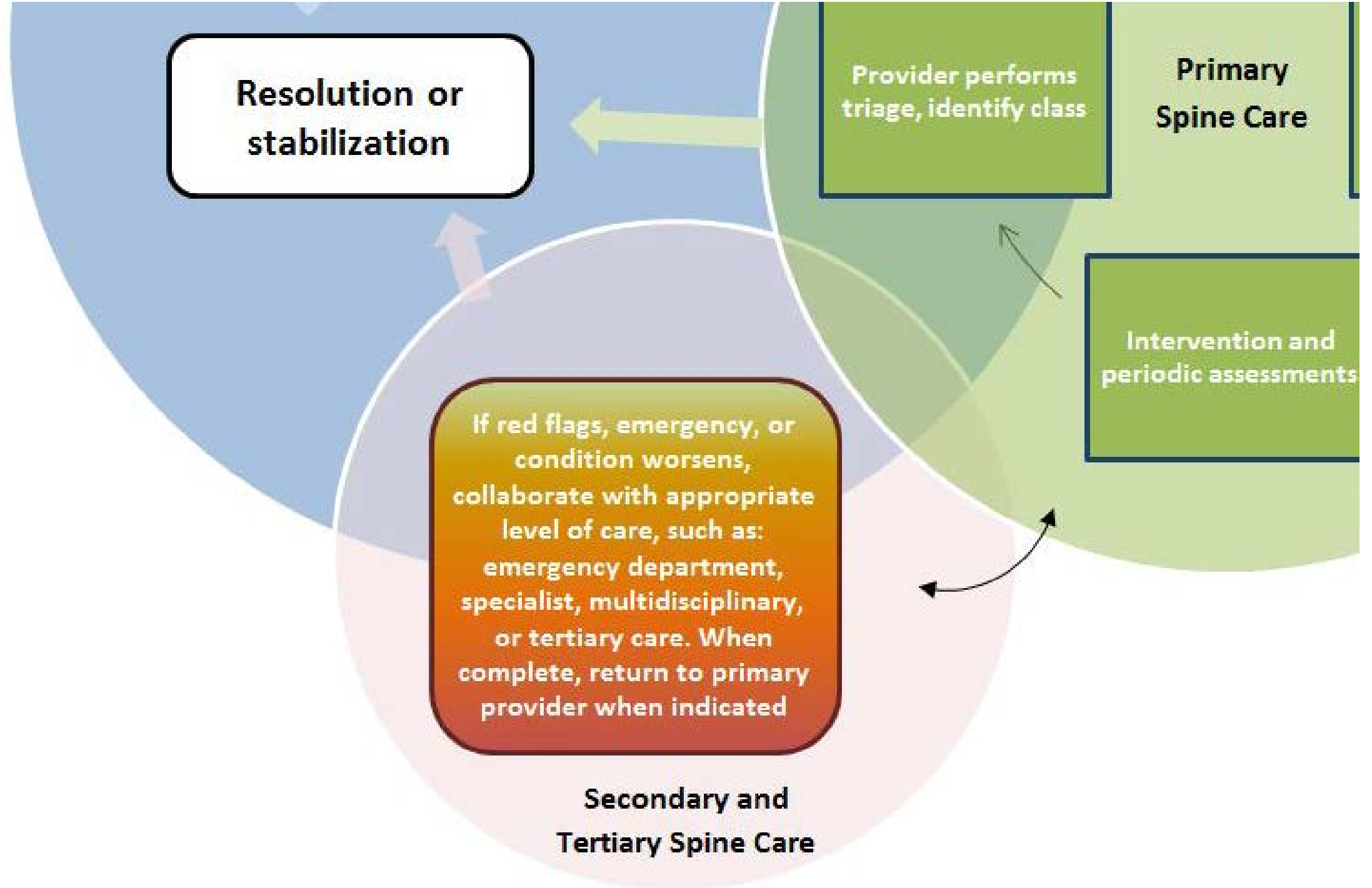
●	manage for a majority of patients, refer if not responsive to care
●	manage when less invasive treatments have failed or advanced procedures are needed
▲	manage initially if able, refer if not able or not responsive to care
◆	triage, refer to other appropriate level of care

Step 4: Intervention

- Select intervention = Based on findings, resources, and patient preferences
- Discuss
 - benefits, harms, costs, treatment alternatives, patient's responsibility
- Address patient concerns and questions
- Shared decision between patient and clinician
- Initiate intervention, patient plays an active role in health decisions.







	Classification															
	Preventive health		Non-specific spine pain, with or without functional limitations						Neurological concerns			Structural deformity		Severe or systemic pathology		
	0a	0b	Ia	Ib	IIa	IIb	IIc	IId	IIIa	IIIb	IIIc	IVa	IVb	Va	Vb	Vc
Self-care, Community care	●	●	▲	▲	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Primary spine care	●	●	●	●	●	●	●	●	▲	◆	▲	●	◆	◆	◆	◆
Secondary spine care	◆	◆	◆	◆	◆	◆	◆	●	●	●	●	◆	●	▲	▲	▲
Tertiary spine care	◆	◆	◆	◆	◆	◆	◆	●	●	●	●	◆	▲	●	●	●

Legend

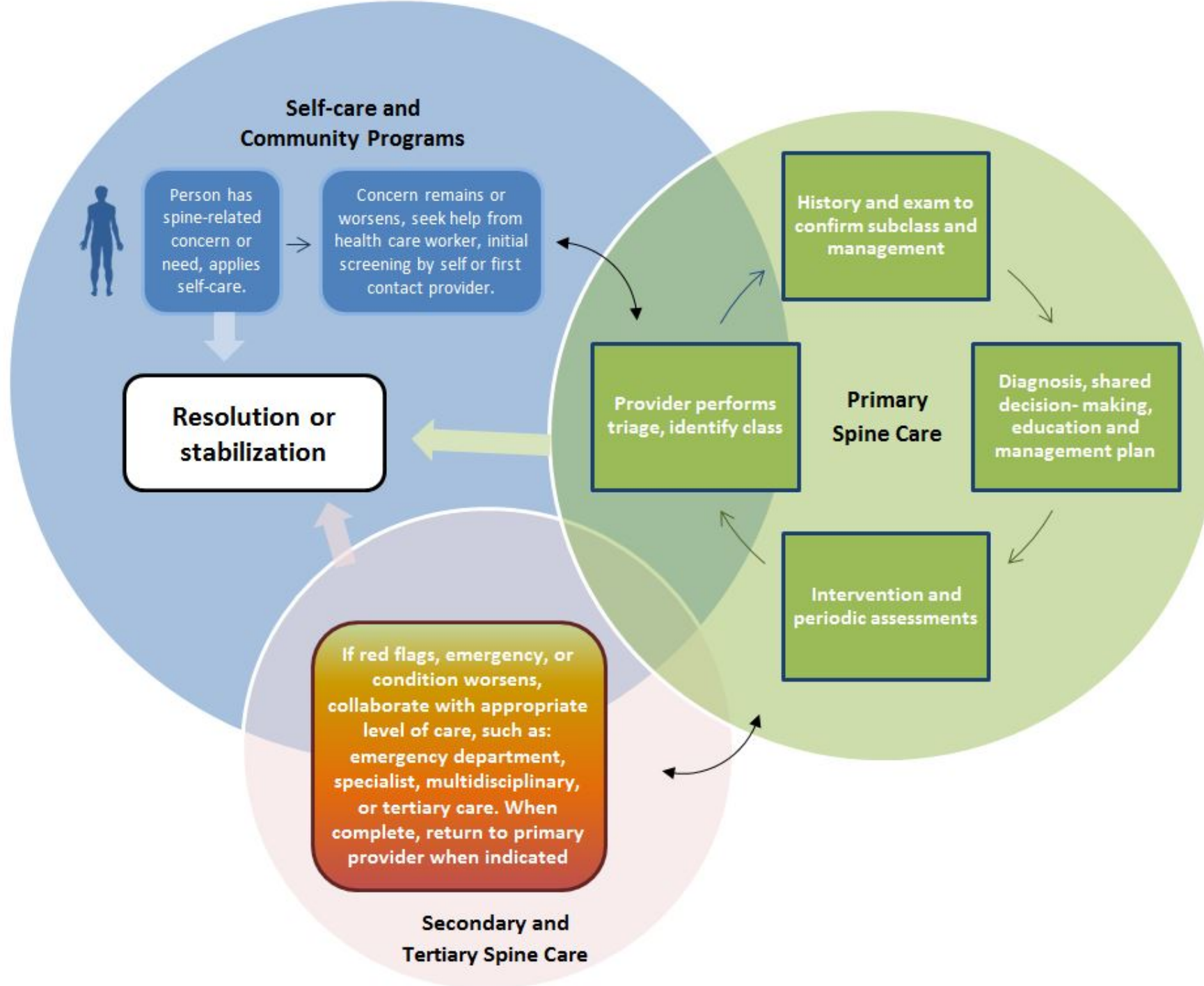
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Step 5: Outcomes

- Reassess to determine if intervention is working
- Frequency and timing are based on patient's condition and response to care.

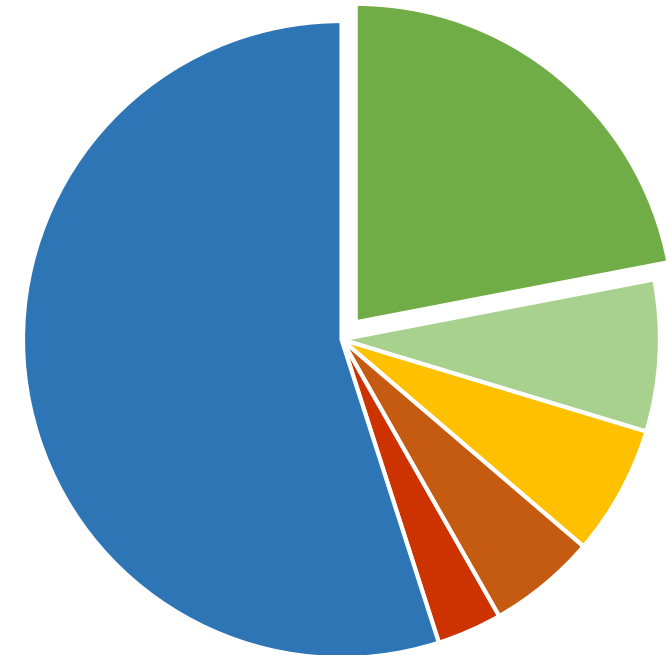
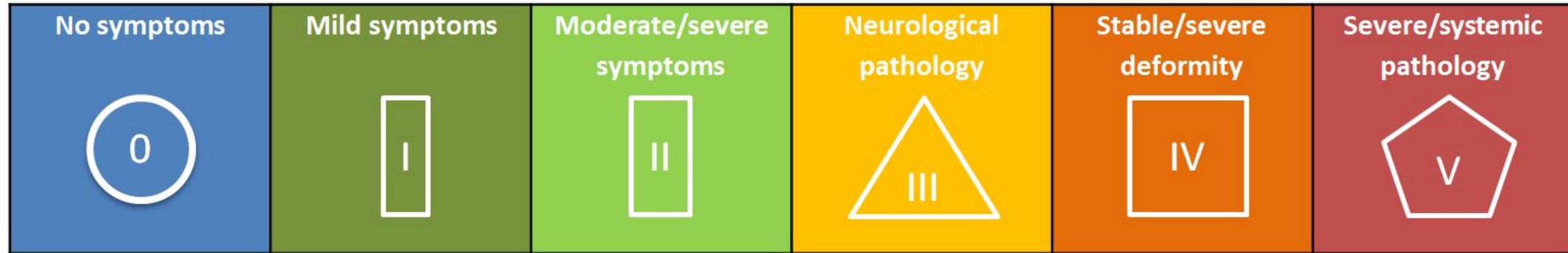
Step 5: Outcomes

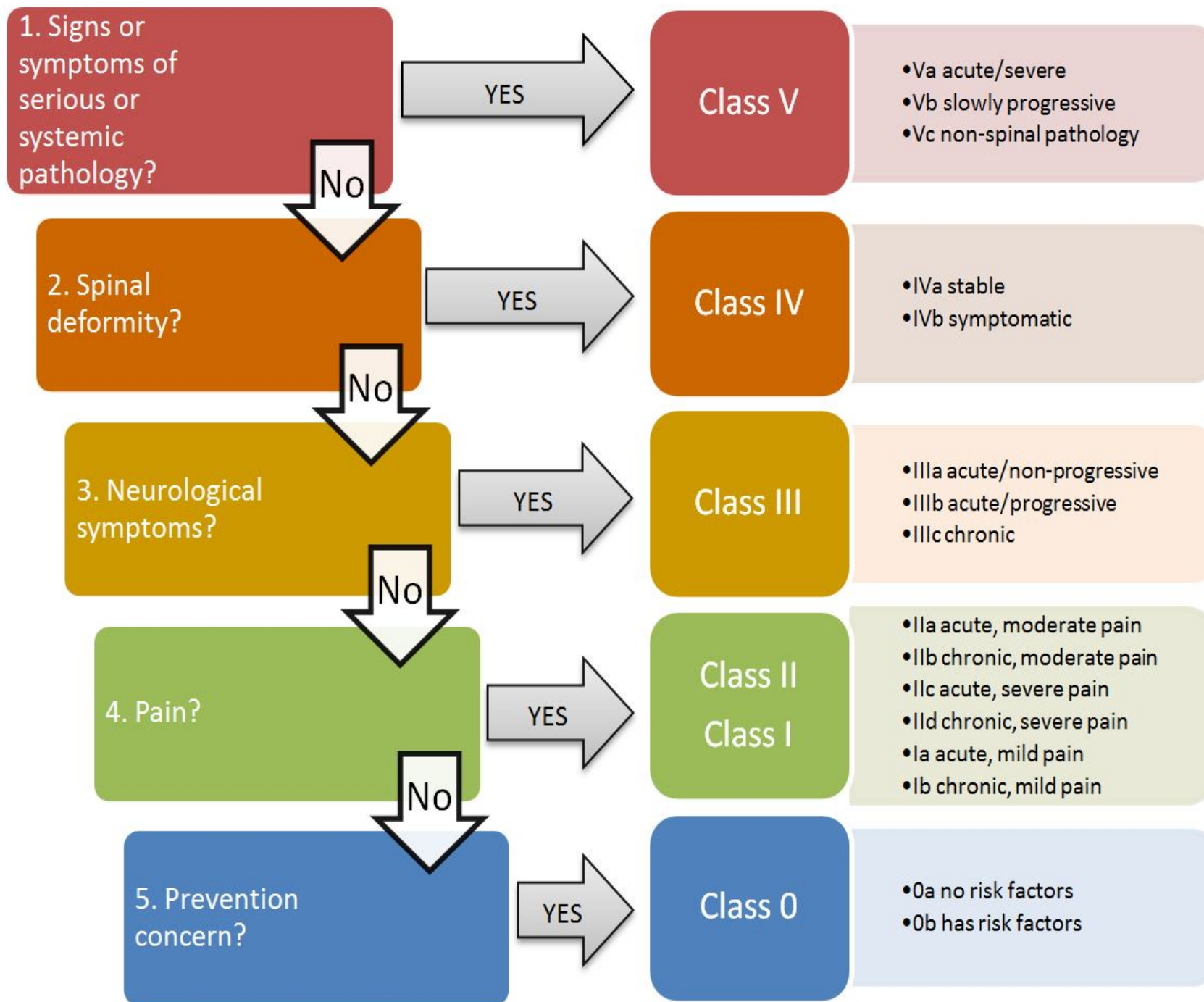
- Favorable and no longer has a need
 - person is discharged
- Favorable but needs more treatment or information
 - further assessment to determine need or other class
- Not favorable
 - further assessment to determine if in other class or other intervention needed



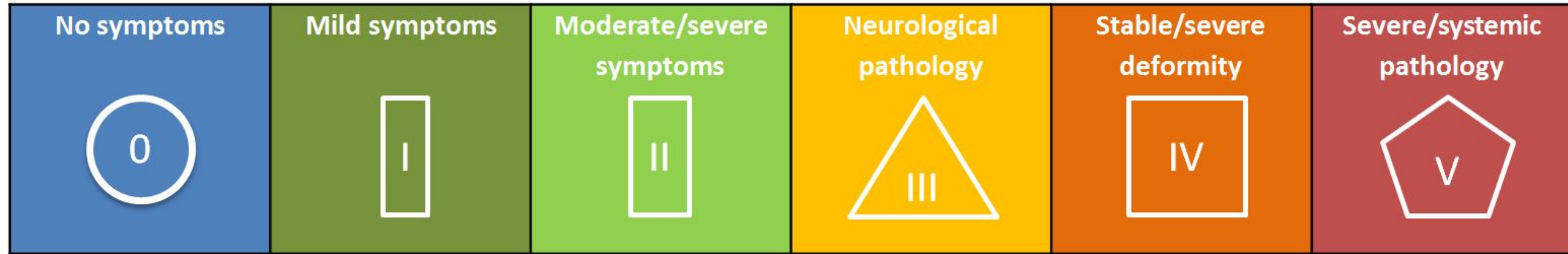
How to Quickly Determine Class and Subclass

GSCI Classification = All possible presentations



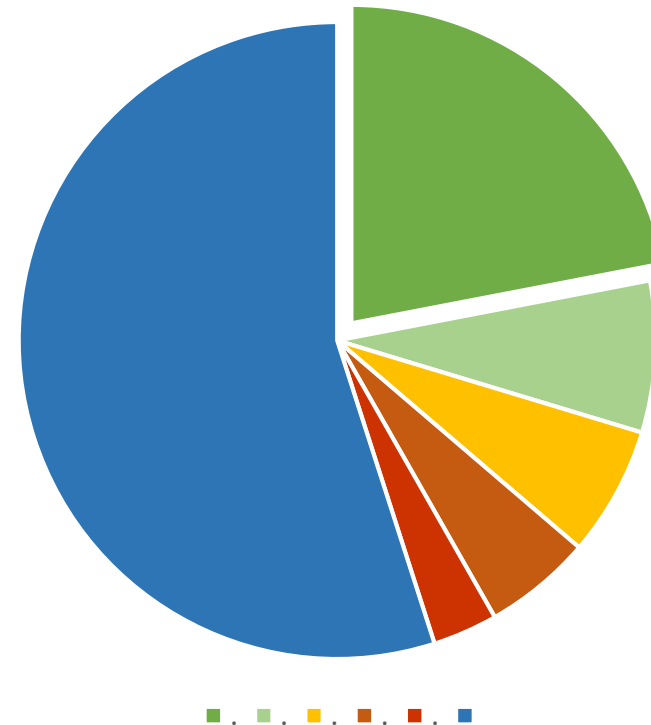


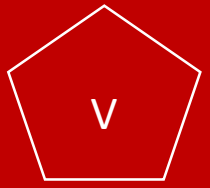
GSCI Classification



- Fewest present with severe or non-spine pathology

1% or less



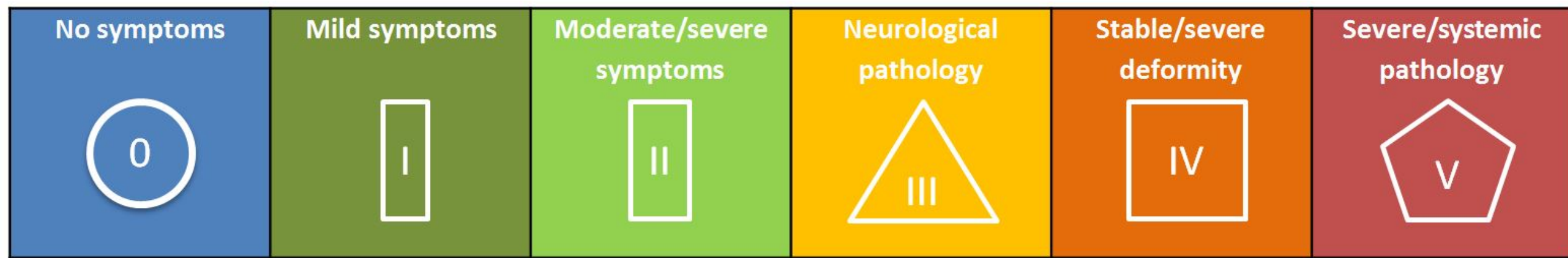


Are there signs or symptoms of
severe/systemic pathology?

Class V

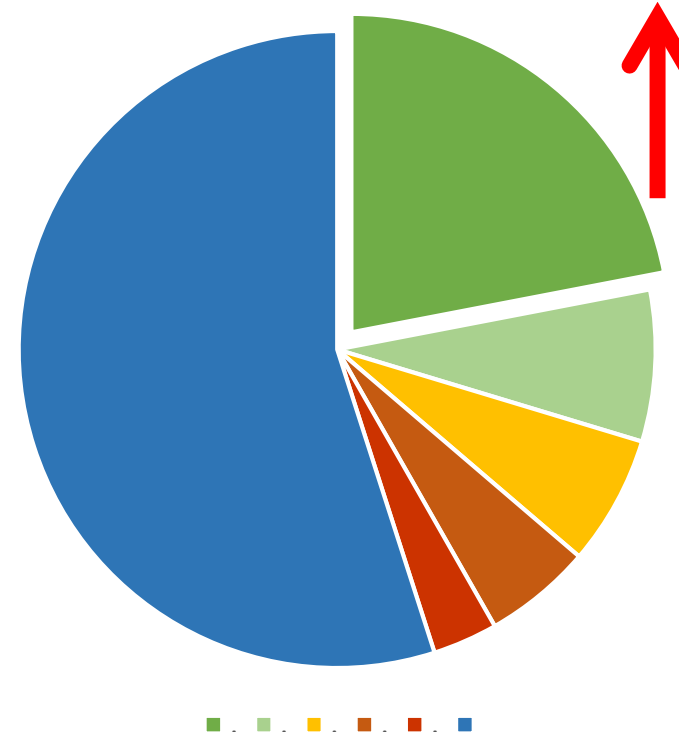
- **Class V: Spine related symptoms with severe or systemic pathology, interference with activities of daily living, with or without neurological deficits**
- **Class Va:** Severe, acute spinal pathology, requires immediate intervention (emergency)
Unstable fractures, acute infections
- **Class Vb:** Severe, slowly progressive spinal pathology, requires intervention (non-emergency)
Inflammatory joint diseases, osteoporosis with fractures, destructive pathology
- **Class Vc:** Spine symptoms originating from non-spine pathology, requires immediate intervention (emergency)
Visceral referral, UTI infections, vascular dissections

GSCI Classification



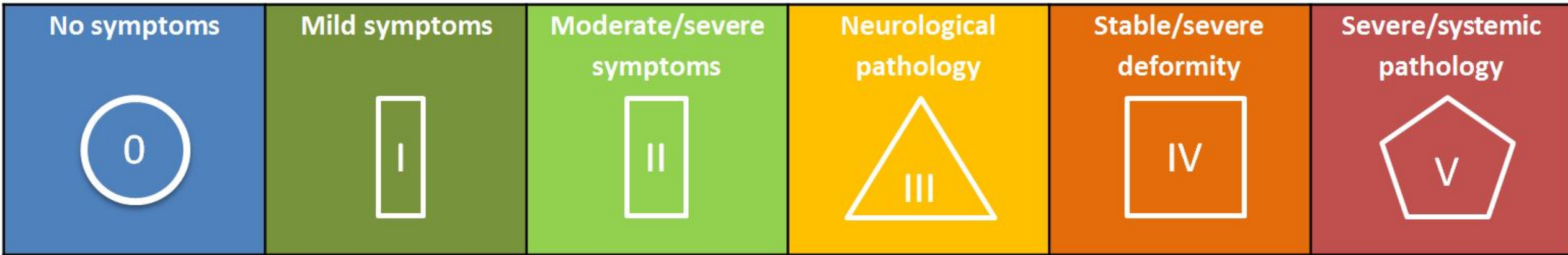
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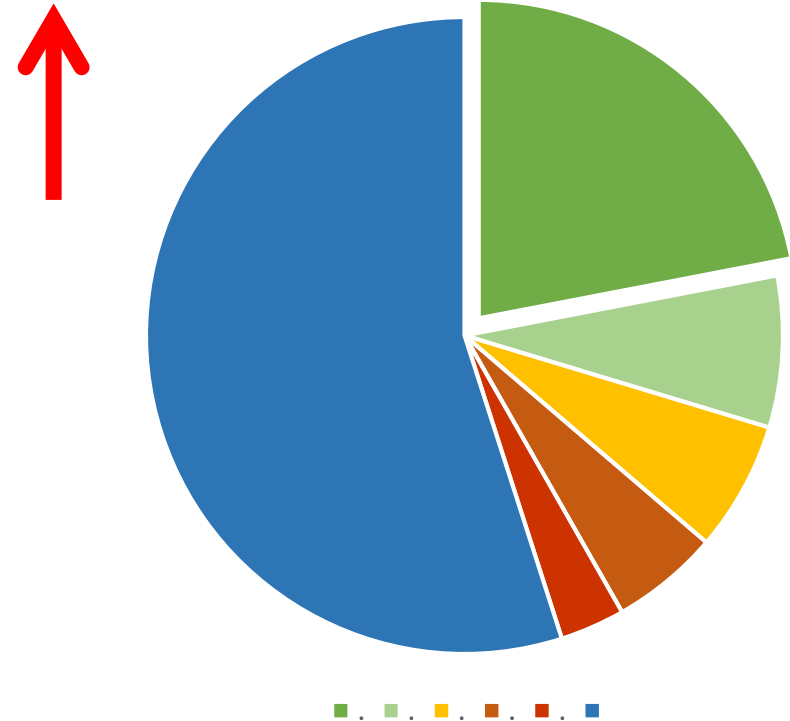
- **Class IV: Spine related symptoms with stable, severe deformity, with or without interference with activities, with or without neurological deficits**
- **Class IVa:** Chronic spine pathology without correlation with symptoms
Scoliosis, stenosis, healed fractures, congenital deformities
- **Class IVb:** Acute or chronic spine pathology with correlation to symptoms
Symptomatic hypermobile spondylolisthesis, deformities

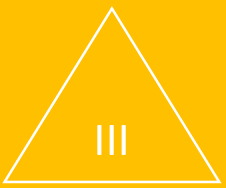
GSCI Classification



- Fewer present with neurological problems

5-9%





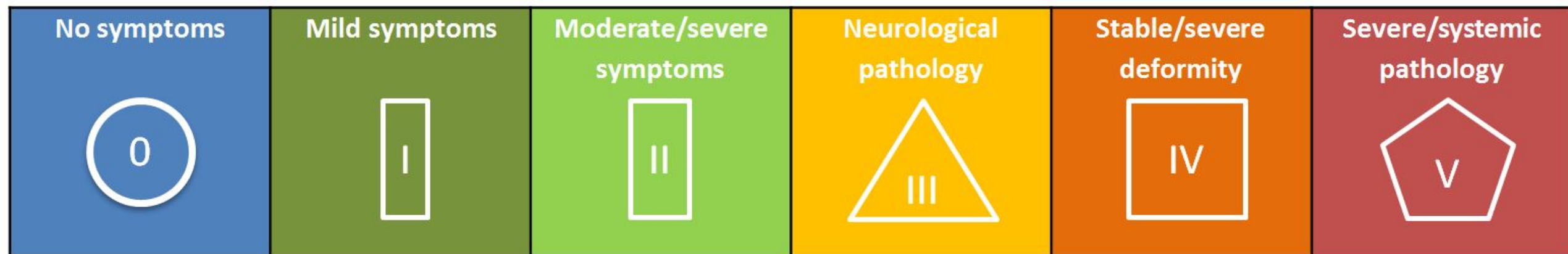
Are there neurological symptoms?

Class III

- **Class III: Spine related symptoms with neurological symptoms or deficits, interference with activities of daily living, focal pathology compromising neural structures**
- **Class IIIa:** Acute and mild
- **Class IIIb:** Acute and progressive (increasing symptoms, pathology or deficits)
- **Class IIIc:** Chronic and stable (unchanging and unlikely to change in the short term but may require symptomatic care)

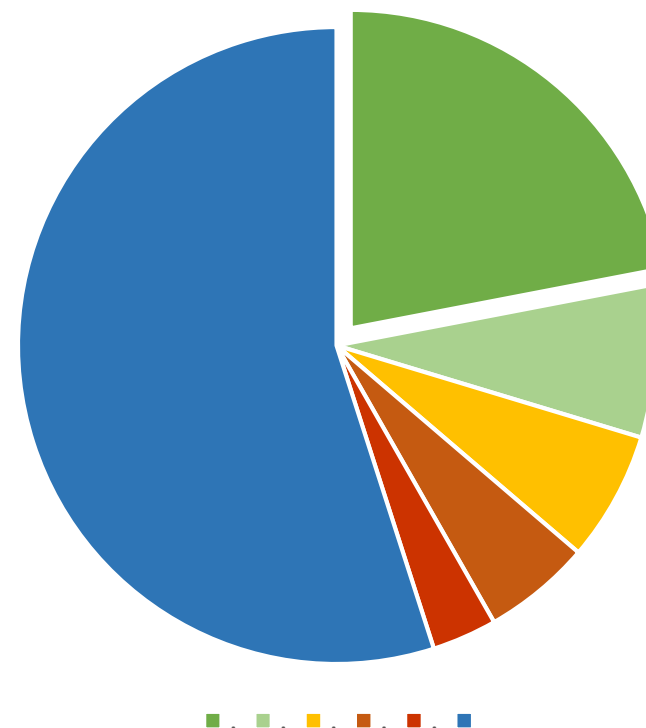
Radiculopathy, myelopathy, cauda equina syndrome

GSCI Classification



- Most with complaints present with non-specific spine pain

90%



Is there pain that is
moderate to severe?

Class II

- **Class II: Spine related symptoms, interference with activities of daily living, no neurological deficits, no severe pathology**
- **Class IIa: moderate pain (5-7), acute/subacute (less than 3 months)**
- **Class IIb: moderate pain, chronic (greater than 3 months) or recurrent**
- **Class IIc: severe pain (8-10), acute/subacute (less than 3 months)**
- **Class IId: severe pain, chronic (greater than 3 months) or recurrent**

Non-specific spinal pain: mechanical pain, myofascial pain, facet joint pain, degenerative disk syndrome, etc

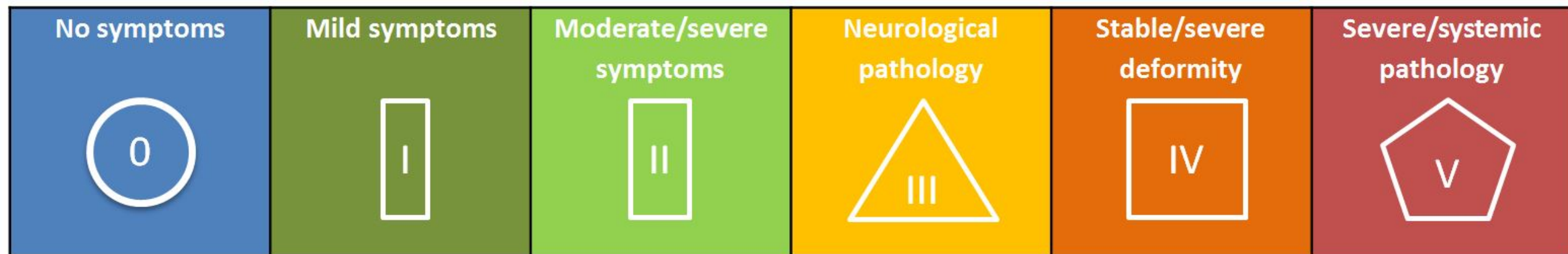
I Is there pain that is mild?

Class I

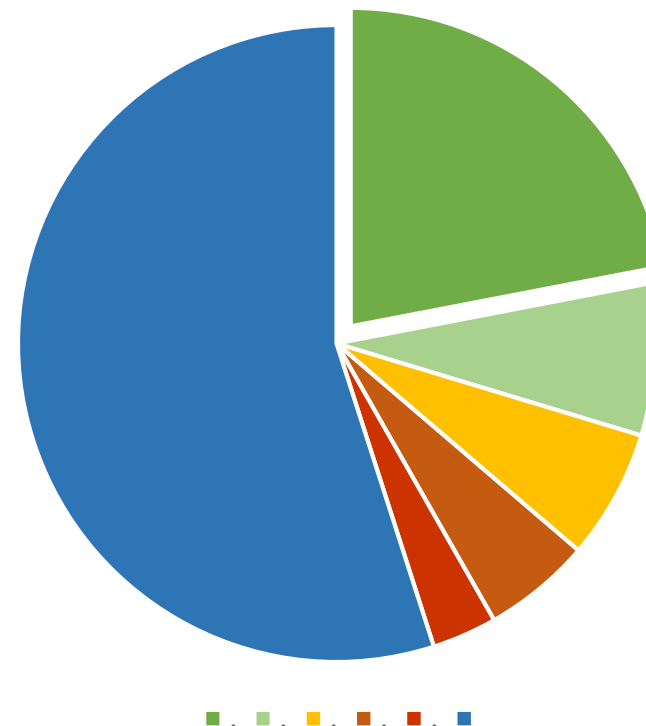
- **Class I:** Spine related symptoms, no or minimal interference with activities of daily living, no neurological deficits, no severe pathology
- **Class Ia:** Mild pain (1-4/10), acute or subacute (less than 3 months)
- **Class Ib:** Mild pain (1-4/10), chronic (greater than 3 months) or recurrent

Non-specific spinal pain: mechanical pain, myofascial pain, facet joint pain, degenerative disk syndrome, etc

GSCI Classification



- Most people have no spine concerns.
- Healthy behaviors and prevention measures at individual and population levels





Is there a spine health or prevention concern?

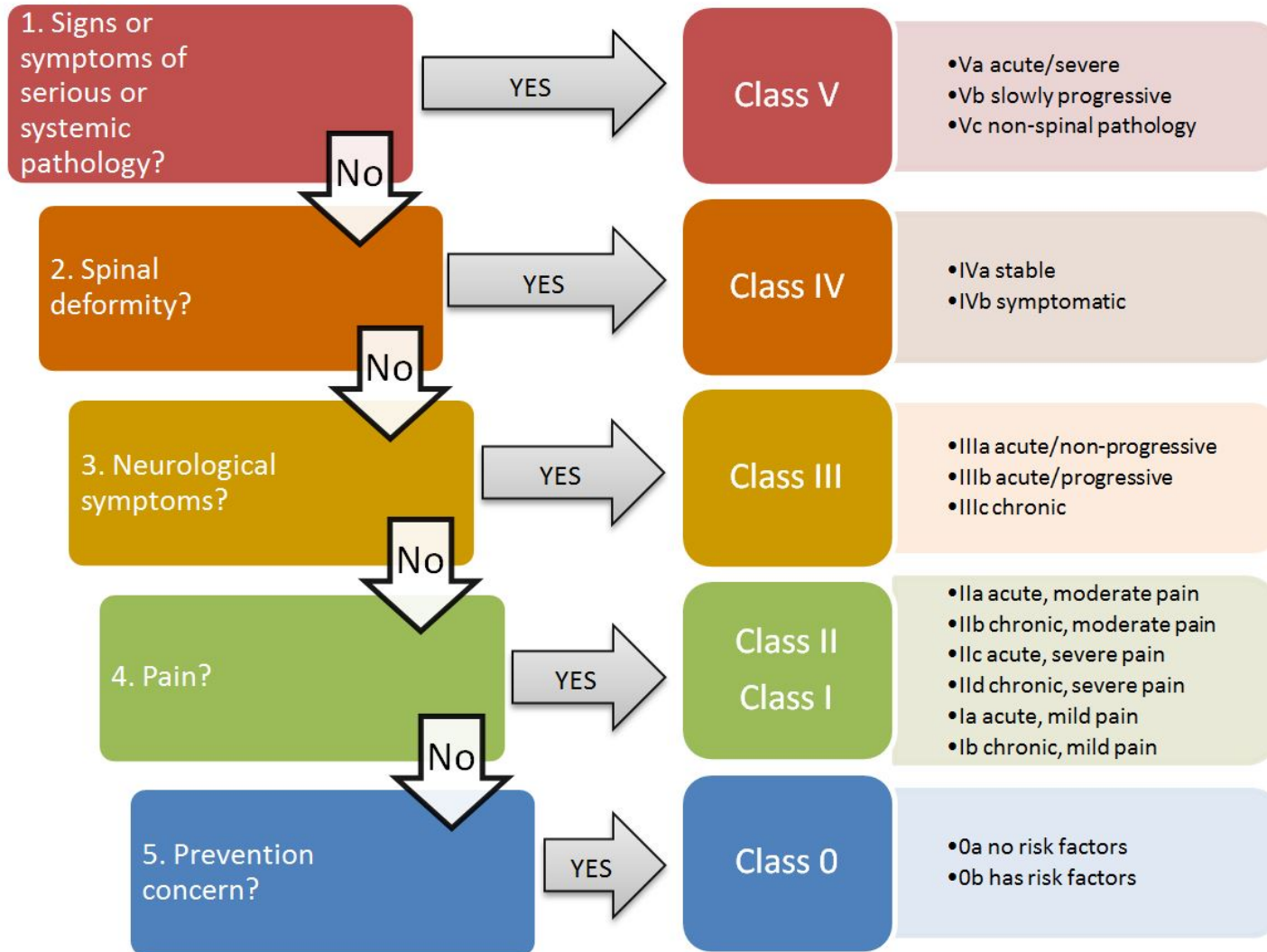
Class 0

- **Class 0:** No or minimal spine related symptoms, potential for prevention, no interference with activities, no neurological deficits, no severe pathology
- **Class 0a:** No evident risk factors for a spine related disorder or pain
- **Class 0b:** One or more risk factors for a spine related disorder or pain

How to avoid osteoporosis, prevent spine injuries, other risk factors

How to prevent return of previous complaint

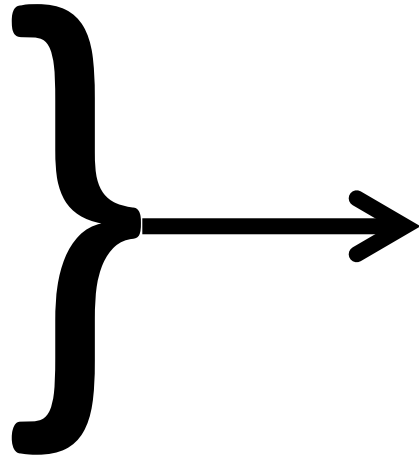
Link Classification to Care Pathway



Assess and Treat

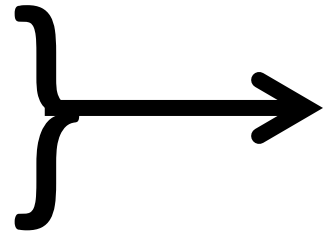
Class Ia Acute/subacute Mild Spine Pain (1 to 4/10 numeric pain scale)
Minimal interference with function or activities No neurologic deficits No serious or systemic pathology (no red flags)
Assess patient
History Clinical examination Psychosocial flags Risk factors and comorbidities
Consider providing 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 and referral if needed

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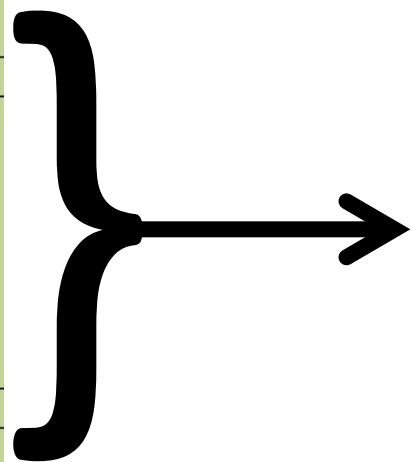
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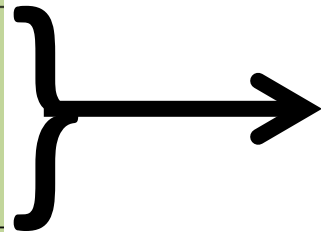
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Recommend patient self-care
Therapeutic exercise Heat/cold (home use) Psychosocial self-care Prevention and comorbidity management

Small Group Exercise

Groups of 2 to 4 people

Sort the 4 patients into the correct class and subclass

Look at the relevant recommended assessment and
intervention card

You have 10 minutes

David Class 1b

- David is a 26 year old professional soccer player with a history of low back pain for the **past 5 years** for which he was regularly seeing a manual therapist for relief. His back pain is **2/10**, intermittent, and is **not interfering** with his sporting activity, however he wants to make sure that he does not have a problem that could interfere with his career. He has no other signs or symptoms.

David Class 1b = non-specific, mechanical LBP

- Assess patient
 - History
 - Clinical examination
 - Psychosocial flags
 - Risk factors and comorbidities
- Consider providing patient
 - Educate about condition, reassurance, advice to remain active, and 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)
 - Mind-body therapies
 - Psychosocial self-care
 - Prevention and comorbidity management
- Follow up and referral if needed

Frank Class IIb

- Frank is 44 years old and his mid-thoracic back pain started after a skiing accident **2 years ago**. The pain is **6/10**, constant, and is **interfering with his work and activities** at home. Due to the pain, he no longer can ski, has difficulty sleeping, and notes difficulty concentrating when the pain is at its worst. The pain is **only located in his back**. He has no other signs or symptoms.

Frank Class lib non-specific, mechanical back pain

- Assess patient
 - History
 - Clinical examination
 - Psychosocial flags
 - Risk factors and comorbidities
 - Diagnostic imaging (if not done previously)
- Consider providing patient
 - Educate about condition, reassurance, advice to remain active, and self-care instructions
 - Manual therapy (short term)
 - Acupuncture (short term)
 - Supervised psychosocial therapy
 - Non-opioid analgesics/muscle relaxants (short term)
 - Antidepressants
 - Inter/multidisciplinary team care
- Recommend patient self-care
 - Therapeutic exercise
 - Heat/cold (home use)
 - Mind-body therapies
 - Psychosocial self-care
 - Prevention and comorbidity management
- Follow up and referral if needed

Kevin Class IIc

- Kevin is 38 year old who underwent lumbar surgery for acute cauda equina syndrome due to a disc herniation 6 months ago. Today he has no pain but continues to have numbness in both legs, urinary incontinence, and sexual dysfunction. He has no other signs or symptoms.

Kevin Class IIc = stable, chronic lumbar cauda equina with residual symptoms

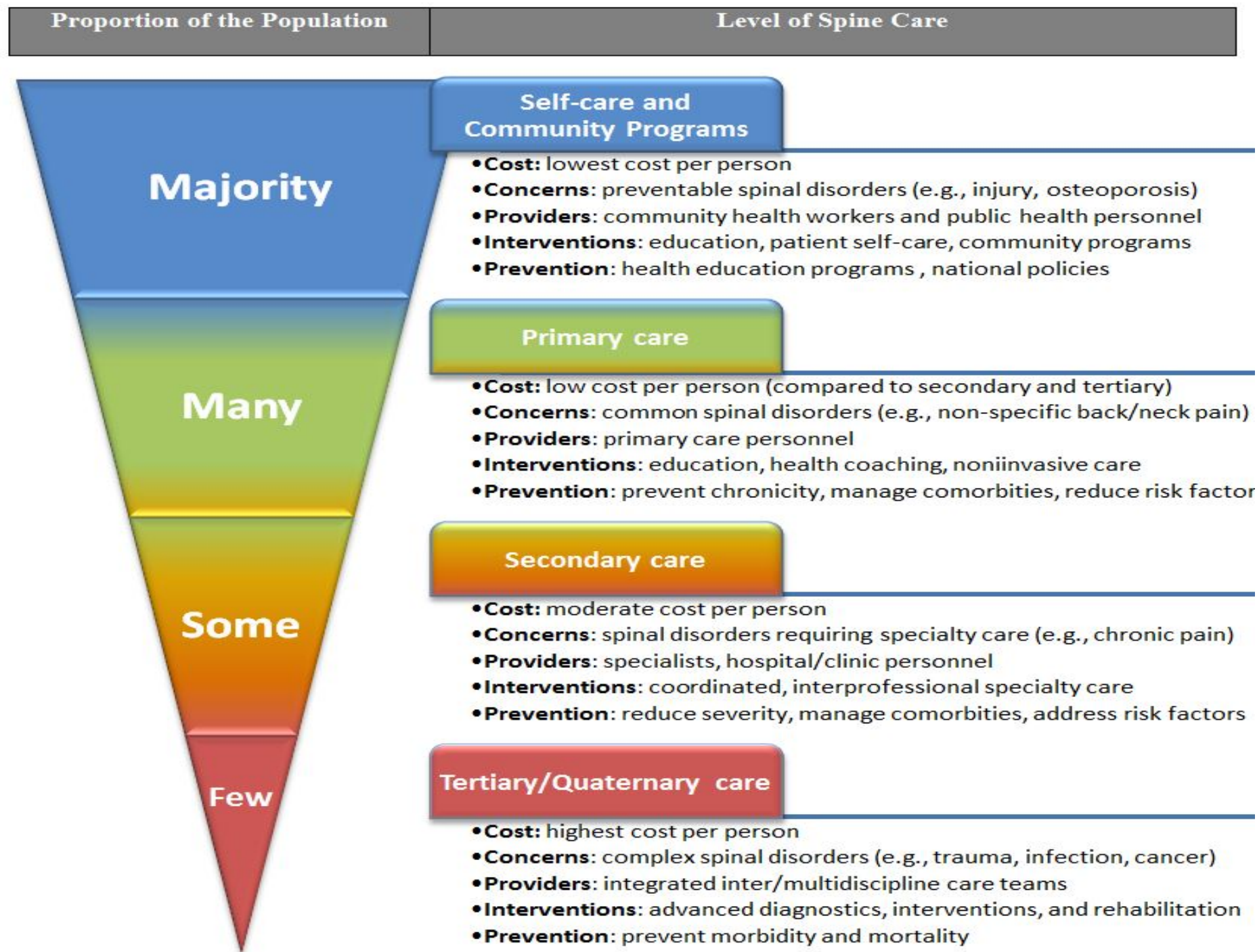
- Assess patient
 - History
 - Clinical examination
 - Psychosocial flags
 - Risk factors and comorbidities
 - Diagnostic imaging (if not done previously)
 - Laboratory testing (if signs of systemic disease)
- Consider providing patient
 - Education about condition, reassurance, advice to remain active, self-care instructions
 - Manual therapy (short term)
 - Supervised psychosocial therapy
 - Elective decompression surgery (if no spontaneous recovery with time)
- Recommend patient self-care
 - Therapeutic exercise
 - Psychosocial self-care
 - Prevention and comorbidity management
- Follow up and referral if needed

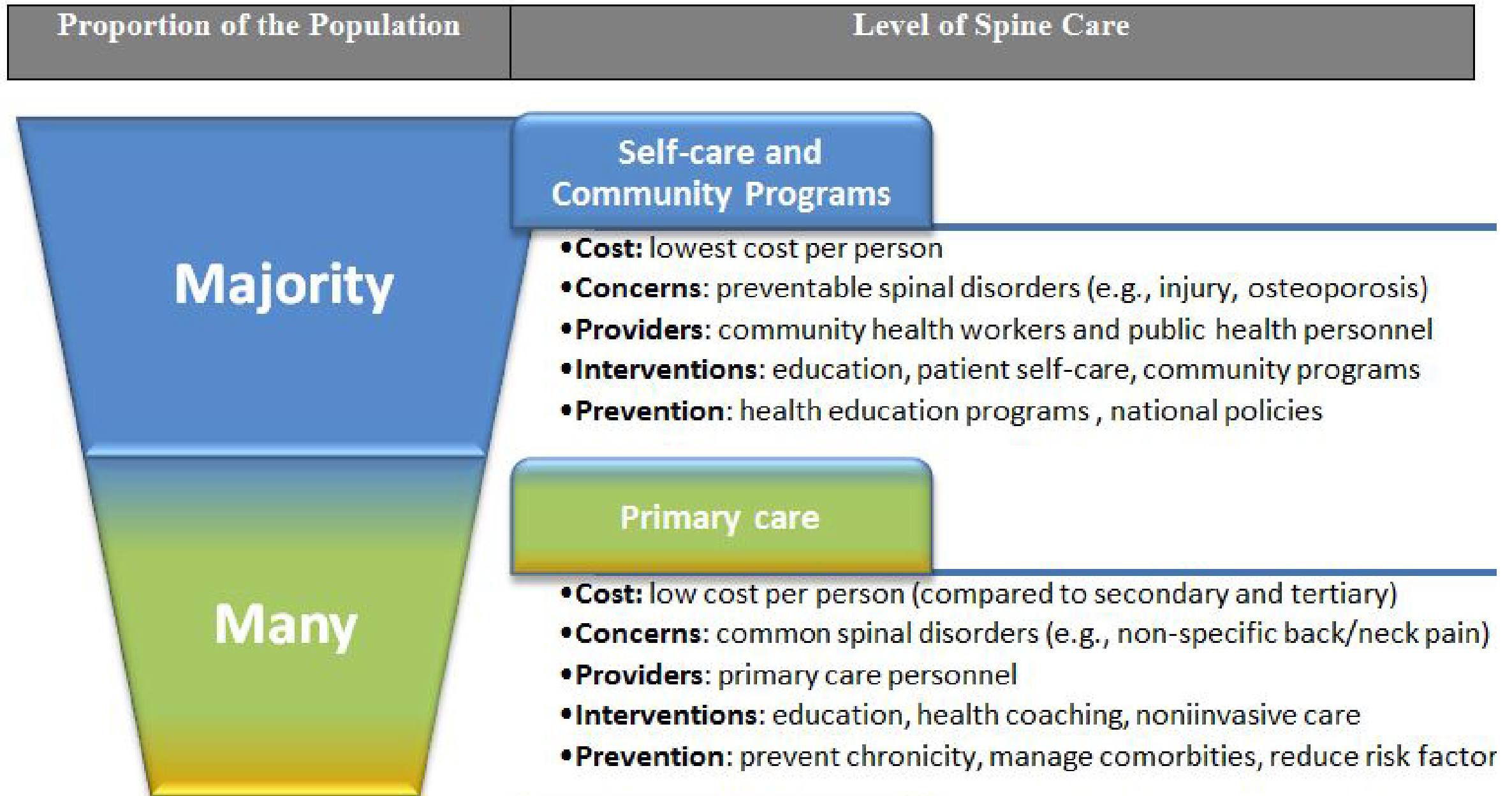
Betty Class 0b

- **Betty** is 44 years old, **obese**, **smokes** 1 pack per day and works 10 hours per day in a **stressful job** that she hates. Her husband (Joe) was disabled by a work related back injury, so she is the **only one working**. She does not have pain or symptoms but a month ago she had a twinge of pain in her low back while bending over. She is **worried** that she might become debilitated like Joe. She has no other signs or symptoms.

Betty Class 0b = concern of disability

- Assess patient
 - Brief history about concern
 - Clinical examination if needed
 - Psychosocial flags
 - Risk factors and comorbidities
- Consider providing patient
 - Educate about condition, reassurance
 - Educate about risk factors and comorbidity management
 - Address any psychosocial flags
- Recommend patient self-care
 - Stay active
 - Avoid modifiable risk factors
- Follow up and referral if needed





Application

- Share with others in your clinic
- Present to local policy or decision makers
- Share with medical director to get all providers on the same page
- Use information in daily practice

Example

- Presentation of GSCI info to providers = classification and care pathway
 - Medical director
 - Primary care medical physicians
 - Nurse practitioners
 - Medical assistants
 - Dietician
 - Optometrist
 - Others
- Development of a screening tool

Back and Neck Health Screen

By answering these questions, you are providing information that will help us guide you to better back and neck health. Please answer as best you can. ⁸⁻¹⁰

What is your age ? ¹⁻³	Years
What is your sex/gender ? ^{2,4-7}	M/F/other
What is your height?	feet and inches
What is your weight? ¹¹⁻¹³	Pounds
How many minutes per week do you exercise ? (activity that raises your heart rate) ¹⁴⁻¹⁷	Minutes
How many minutes per week do you do strength training ? (such as lifting weights)	Minutes

	YES	NO	not sure
Do you smoke ? (cigarettes, pipe, <u>ecigarettes</u> , or any other smoking device) ^{7,11,18-21}			
Do you do repetitive bending, twisting or lifting? ^{3,22}			
Do you sit for a long time when you are working on your computer? ^{6,9,14,23,24}			
Do you have good sitting and standing posture throughout the day? ^{6,9,14,23,24}			
Is your workstation set up right for you so that you are comfortable? ^{5,6,23}			
Have you had your vision checked within the last year? ²⁵⁻²⁷			
Are you doing weekly activities to manage any mental stress ? ^{14,16,28-34}			
Do you have a comfortable sleeping environment and wake refreshed? ^{35,36}			
Do you know how to take care of yourself when you have mild back or neck pain? ³⁷			
Do you know the serious signs for back or neck pain and when you should seek care from a health care professional?			

Do you have pain in more than one area of your body? ^{5,7,20,24,38}				
Do you have back or neck pain at present? If no - skip to the ★ question below				
IF YES				
Do you have one or more of the following: Difficulty with balance or coordination? Shooting sensations into your arms or legs? Unable to control bowel or bladder? History of cancer or serious infection? Recent significant trauma? ¹⁰				
Do you have one or more of the following: Your pain interferes with work or activities you enjoy doing? Do you have concern that your pain may never go away? Are afraid to move or exercise? Are you often depressed or anxious? Do you feel you are not getting support from work, family or friends? ¹⁰				
Have you had back and/or neck pain more than 3 months? ¹⁰				
In the past week, are you unable to do regular activities due to back and/or neck pain ? ¹⁰				
At this time – Circle the number of your pain severity?	None 0 1 2 3 4 5 6 7 8 9 10 Worst ever			
★ What concerns or questions do you have about back and neck health that we can help you with?				

Do not write below this line

MRN #

Healthcare provider recommendations for follow up

- ☐ Acupuncture
- ☐ Chiropractic
- ☐ Dietician
- ☐ Optometry
- ☐ Physical Therapy
- ☐ Primary Medical Care
- ☐ US Healthworks
- ☐ Other

Prepared by Brightball 2018



Outcomes

- Excellent employee participation
- Participation by DC, PT, NP, RN, and front office
- Outcomes were similar to published stats
- Good education tool for population
- Good integration tool for providers and practices

Discussion and Questions

*Spine-related concerns may be complex,
but excellent spine care does not need to be.*

www.globalspinecareinitiative.org

Thank you to the sponsors of this initiative

