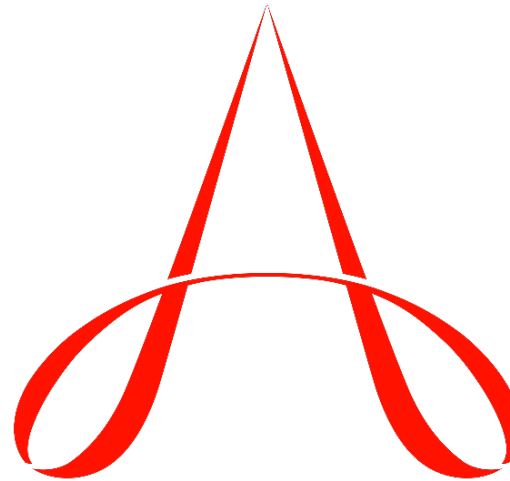# Spinal Cord Injury Medicine Milestones

The Accreditation Council for Graduate Medical Education

ACGME

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Second Revision: April 2021
First Revision: June 2014

Spinal Cord Injury Medicine Milestones

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for the assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Spinal Cord Injury Medicine Milestones

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American Board of Physical Medicine and Rehabilitation

American Board of Psychiatry and Neurology

ACGME Review Committees for Neurology and Physical Medicine and Rehabilitation

Understanding Milestone Levels and Reporting

This document presents the Milestones, which programs use in a semi-annual review of fellow performance, and then report to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME Competencies organized in a developmental framework. The narrative descriptions are targets for resident/fellow performance throughout their educational program.

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert fellow in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, a junior fellow may achieve higher levels early in his/her educational program just as a senior fellow may be at a lower level later in his/her educational program. There is no predetermined timing for a resident to attain any particular level. Fellows may also regress in achievement of their milestones. This may happen for many reasons, such as over scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident/fellow.

Selection of a level implies the resident/fellow substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

Additional Notes

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). Level 5 is designed to represent an expert fellow whose achievements in a subcompetency are greater than the expectation. Milestones are primarily designed for formative, developmental purposes to support continuous quality improvement for individual learners, education programs, and the specialty. The ACGME and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to ACGME supervision guidelines as described in the Program Requirements, as well as to institutional and program policies. For example, a fellow who performs a procedure independently must, at a minimum, be supervised through oversight.

A Supplemental Guide is also available to provide the intent of each subcompetency, examples for each level, assessment methods or tools, and other available resources. The Supplemental Guide, like examples contained within the Milestones, is designed only to assist the program director and Clinical Competency Committee, and is not meant to demonstrate any required element or outcome.

Supplemental Guides and other resources are available on the Milestones page of each specialty section of the ACGME website. On www.acgme.org, choose the applicable specialty under the "Specialties" menu, then select the "Milestones" link in the lower navigation bar.

The diagram below presents an example set of milestones for one subcompetency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each subcompetency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones.

Professionalism 2: Professional Behaviors				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Identifies professionalism lapses in oneself and others	Demonstrates professional behavior in routine situations	Anticipates situations that may trigger professionalism lapses	Demonstrates professional behavior across situations and settings	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report lapses	Takes responsibility for own professionalism lapses when applicable and identifies contributing factors	Takes remedial action to address lapses when applicable	Proactively intervenes to prevent lapses	Addresses system issues to minimize potential for professionalism lapses

Comments:

Not Yet Completed Level 1 ☐

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as **some** milestones in the higher level(s).

Patient Care 1: History of Individuals with Spinal Cord Disorders				
Level 1	Level 2	Level 3	Level 4	Level 5
Acquires a history with a basic functional and psychosocial assessment	Acquires a comprehensive history identifying all components of functioning, including impairments, activities, participation, and contextual factors	Acquires a relevant history in a prioritized fashion, integrating components of functioning	Elicits key history, including subtleties, in a prioritized and efficient fashion across a spectrum of ages and impairments	Role models the effective gathering of subtle and salient history from patients across a spectrum of ages and impairments
☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Patient Care 2: Physical Examination of Individuals with Spinal Cord Disorders				
Level 1	Level 2	Level 3	Level 4	Level 5
Performs a general physical examination	Performs a physical examination, including functional assessment and neurologic exam to diagnose and classify spinal cord injury	Performs a hypothesis-driven physical examination, with identification of subtle or atypical findings	Efficiently performs a hypothesis-driven physical examination that identifies subtle or atypical findings over a spectrum of ages and impairments	Role models a hypothesis-driven physical examination that identifies subtle or atypical findings over a spectrum of ages and impairments
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Patient Care 3: Medical/Surgical Management of Individuals with Spinal Cord Disorders				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and manages general medical conditions and their complications	Identifies and manages consequences and complications of spinal cord disorders, with direct supervision	Develops and implements a comprehensive treatment plan to address complications related to spinal cord disorders, with indirect supervision	Independently develops and implements a comprehensive treatment plan that anticipates, identifies, and addresses complications related to spinal cord disorders	Role models the development and implementation of a comprehensive treatment plan, including appropriate consideration of emerging treatments
Identifies the need and resources for consultation	Uses consultations to guide a treatment plan	Uses appropriate consideration of patient acuity and other factors to triage, and provides consultations to other services for common conditions	Provides consultations to other services for complex and unusual conditions across a spectrum of impairments and conditions	

Comments:

Not Yet Completed Level 1 ☐
Not Yet Assessable ☐

Patient Care 4: Assistive Technologies (e.g., Prosthetics and Orthotics, Adaptive Equipment, Mobility Devices, Seating Systems, Communication Technologies)				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes assistive technologies and their indications	Evaluates patient need for common assistive technologies based on impairments	Evaluates a patient need for a full range of assistive technologies based on impairments, considering barriers, precautions, contraindications, comorbidities, and input from other professionals	Generates a detailed prescription, in consultation with other professionals, for a full range of assistive technologies, including justification for need	Serves as a resource to other professionals for clinical problem solving and functional challenges related to assistive technology
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐

Not Yet Assessable   ☐

4

Patient Care 5: Rehabilitation Interventions

Level 1	Level 2	Level 3	Level 4	Level 5
Describes common modalities and general rehabilitation therapies by discipline	Prescribes common modalities and general rehabilitation therapies by discipline based on impairments	Provides detailed therapy prescriptions for specific conditions with appropriate precautions	Integrates comprehensive knowledge of impairments, activity limitations, participation restrictions, and contextual factors to prescribe rehabilitation interventions	Demonstrates the ability to direct and implement rehabilitation interventions in challenging clinical conditions
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

Medical Knowledge 1: Clinical Reasoning				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies salient elements of a patient presentation to inform clinical reasoning	Develops a prioritized differential diagnosis for common presentations of spinal cord disorders and associated conditions	Develops a prioritized differential diagnosis for complex and uncommon presentations of spinal cord disorders and associated conditions	Synthesizes information from a variety of sources to reach high-probability diagnoses over a spectrum of ages and conditions	Role models effective and efficient clinical reasoning, evaluation, and diagnosis across the spectrum of ages and conditions
Identifies diagnostic studies for common medical conditions	Identifies diagnostic studies for conditions seen in spinal cord disorders practice	Prioritizes the sequence and urgency of diagnostic testing	Considers diagnostic testing based on cost effectiveness, patient burden, and likelihood that results will influence clinical management	Role models identification of cost-effective diagnostic testing across a range of conditions
Describes common causes of clinical reasoning error	Identifies types of clinical reasoning errors within patient care, with guidance	Demonstrates a structured approach to identifying clinical reasoning errors	Anticipates and accounts for errors and biases with continuous re-appraisal to minimize clinical reasoning errors	Coaches others to minimize clinical reasoning errors

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Medical Knowledge 2: Traumatic and Non-Traumatic Spinal Cord Disorders
This includes:
- **Epidemiology and etiology**
- **Anatomy and pathophysiology**
- **Secondary conditions and complications**
- **Therapeutic and diagnostic options**

Level 1	Level 2	Level 3	Level 4	Level 5
Describes basic spine and spinal cord anatomy	Demonstrates knowledge of pathophysiology of spinal cord disorders, and the effects of the injury or disorder on specific body systems	Synthesizes and applies knowledge of common spinal cord disorders, secondary conditions, treatment options, and complications	Synthesizes and applies knowledge required to diagnose and treat complex and uncommon spinal cord conditions and complications	Serves as an expert resource to health care professionals regarding spinal cord disorders and sequelae
Demonstrates basic knowledge of common spinal cord disorders and associated complications	Describes prevention and management of secondary conditions and complications, including expected effects and contraindications of treatment	Demonstrates knowledge of the continuum of spinal cord disorder care, including acute care, initial rehabilitation, and post-discharge follow-up	Delineates a spinal cord injury-specific health maintenance and management program across the lifespan and spectrum of impairments and disorders	
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:
Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

Medical Knowledge 3: Functional Outcomes and Interventions				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic knowledge of spinal cord disorders on various aspects of function	Demonstrates knowledge of functional outcome, prognosis, and interventions based on impairment and classification	Integrates knowledge of functional goals and prognosis into an individualized treatment plan	Demonstrates knowledge of functional outcome and prognosis based on advanced treatments and technology, including controversial or emerging interventions	Serves as an expert resource regarding functional outcomes in spinal cord disorders
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Comments:

Not Yet Completed Level 1   ☐
Not Yet Assessable   ☐

Systems-Based Practice 1: Patient Safety				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and their families (simulated or actual)	Discloses patient safety events to patients and their families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events

Comments:

Not Yet Completed Level 1

Systems-Based Practice 2: Quality Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes quality improvement initiatives	Participates in quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
▢	▢	▢	▢	▢	▢	▢	▢	▢

Comments:

Not Yet Completed Level 1   ▢

Systems-Based Practice 3: System Navigation for Patient-Centered Care

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of care coordination	Coordinates care of patients in routine clinical situations, effectively using the roles of interprofessional team members	Coordinates care of patients in complex clinical situations effectively collaborating with members of the interprofessional teams	Role models effective coordination of patient-centered care among different professions and specialties	Analyzes the process of care coordination and leads in the design and implementation of improvements
Identifies key elements for safe and effective transitions of care and hand-offs	Performs safe and effective transitions of care/hand-offs in routine clinical situations	Performs safe and effective transitions of care/hand-offs in complex clinical situations	Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems and settings	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes
Demonstrates knowledge of population and community health needs and disparities	Identifies specific population and community health needs and inequities for the local population	Uses local resources effectively to meet the needs of a patient population and community while minimizing health care inequities	Participates in changing and adapting practice to provide for the needs of specific populations	Leads innovations and advocacy in partnership with populations and communities experiencing health care inequities

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Comments:

Not Yet Completed Level 1   ☐

Systems-Based Practice 4: Physician Role in Health Care Systems

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key components of the complex health care system, including the various venues for post-acute care	Describes how components of a complex health care system are interrelated, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Navigates the various components of the complex health care system to provide efficient and effective patient care and transitions of care	Advocates for or leads systems change that enhances high value, efficient, and effective patient care, and transitions of care
Describes basic health payment systems (e.g., government, private, public, uninsured care) and practice models	Delivers care with consideration of each patient's payment model (e.g., insurance type)	Engages with patients in shared decision making, informed by each patient's payment models	Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient's payment model	Participates in health policy advocacy activities
Identifies basic knowledge domains for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)	Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	Analyzes individual practice patterns and professional requirements in preparation for independent practice	Educates others to prepare them for transition to practice

Comments:

Not Yet Completed Level 1 ☐

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and use available evidence	Locates and applies the best available evidence, integrated with patient preference, to the care of straightforward patients	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence, to guide care tailored to the individual patient	Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines
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Comments:

Not Yet Completed Level 1   ☐

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Professional Growth				
Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for professional development	Demonstrates openness to verbal feedback and other performance data	Intermittently seeks and incorporates verbal feedback and other performance data with humility and adaptability	Consistently seeks and incorporates verbal feedback and other performance data with humility and adaptability	Role models consistent incorporation of verbal feedback and other performance data
Identifies and/or acknowledges gaps between expectations and actual performance	Analyzes and reflects on the factors that contribute to performance gaps	Analyzes, reflects on, and institutes behavioral changes to narrow performance gaps	Uses data to measure the effectiveness of the learning plan to address performance gaps and modifies it when necessary	Coaches others on reflective practice, including the design and implementation of learning plans
Actively seeks opportunities to improve	Designs and implements a learning plan, with assistance	Independently designs and implements a learning plan		
☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐

Comments:

Not Yet Completed Level 1   ☐

Professionalism 1: Ethical Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
Approaches clinical care and educational duties with actions consistent with core ethical principles	Demonstrates consistent application of ethical principles in routine clinical practice, such as informed consent, surrogate decision making, advance directives, confidentiality, error reporting and disclosure, and stewardship of limited resources	Recognizes tensions between conflicting ethical principles in complex situations and seeks appropriate guidance to help resolve ethical dilemmas	Manages ethical dilemmas using appropriate resources, as needed, to facilitate resolution (e.g., ethics consultations, literature review, risk management/legal consultation)	Serves as a resource for others to resolve complex ethical dilemmas

Comments:

Not Yet Completed Level 1

Professionalism 2: Professional Behaviors

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies professionalism lapses in oneself and others	Demonstrates professional behavior in routine situations	Anticipates situations that may trigger professionalism lapses	Demonstrates professional behavior across situations and settings	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report lapses	Takes responsibility for one's own professionalism lapses when applicable and identifies contributing factors	Takes remedial action to address lapses when applicable	Proactively intervenes to prevent lapses	Addresses system issues to minimize potential for professionalism lapses

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Comments:

Not Yet Completed Level 1   ☐

Professionalism 3: Accountability

Level 1	Level 2	Level 3	Level 4	Level 5
Responds promptly to requests or reminders to complete responsibilities	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Proactively implements strategies to ensure the needs of patients, teams, and systems are met in a timely manner	Coaches others to optimize timely task completion
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1 ☐

Professionalism 4: Patient Care Etiquette with Patients of All Abilities				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the need to respect the dignity of all patients regardless of impairments or disabilities	Demonstrates specific elements of verbal and physical communication that reflect respect for people with impairments or disabilities	Proactively maintains the patient's comfort and dignity during history taking and physical examination for a patient with mild impairments or disabilities	Proactively maintains the patient's comfort and dignity during history taking and physical examination for a patient with severe impairments or disabilities	Serves as a role model and as a resource for others by coaching them in behaviors and actions that optimize the comfort, dignity, and respect of people with impairments or disabilities
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐

Professionalism 5: Fellow Well-Being and Help-Seeking				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes status of personal and professional well-being, with assistance	Independently recognizes status of personal and professional well-being and demonstrates appropriate help seeking behaviors	With assistance, proposes, implements, and refines a plan to optimize personal and professional well-being	Independently develops, implements, and refines a plan to optimize personal and professional well-being	Coaches others and addresses system barriers and facilitators to optimize personal and professional well-being
☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐

Comments:

Not Yet Completed Level 1   ☐

This subcompetency is not intended to evaluate a fellow's well-being. Rather, the intent is to ensure that each fellow has the fundamental knowledge of factors that affect well-being, the mechanisms by which those factors affect well-being, and available resources and tools to improve well-being.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Uses language and non-verbal behavior to demonstrate respect and establish rapport	Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	Establishes a therapeutic relationship in challenging patient encounters	Easily establishes therapeutic relationships, with attention to the patient/patient's family's concerns and context, regardless of complexity of the situation	Mentors others in developing positive therapeutic relationships
Minimizes common barriers to effective communication (e.g., language, disability)	Minimizes complex barriers to effective communication (e.g., health literacy, cultural differences)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Overcomes personal biases while proactively minimizing communication barriers	Role models self-awareness practice while teaching a contextual approach to minimize communication barriers
Accurately communicates one's own role within the health care system	Organizes and initiates communication with the patient/patient's family by clarifying expectations and verifying understanding of the clinical situation	With guidance, sensitively and compassionately delivers medical information, elicits the patient's/patient's family's values, goals, and preferences, and acknowledges uncertainty and conflict	Independently, uses shared decision making to align the patient's/patient's family's values, goals, and preferences with treatment options to make a personalized care plan	Role models shared decision making in patient/patient family communication, including those situations with a high degree of uncertainty or conflict

 ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐

Comments:

Not Yet Completed Level 1 ☐

Interpersonal and Communication Skills 2: Interprofessional and Team Communication

Level 1	Level 2	Level 3	Level 4	Level 5
Uses respectful language that values all members of the health care team	Communicates information effectively with all health care team members	Checks one's own understanding and biases while listening to adapt communication style to fit team needs	Coordinates recommendations and communication from different members of the health care team to optimize patient care	Role models self-awareness and flexible communication strategies that value input from all health care team members, resolving conflict when needed
	Solicits feedback on performance as a member of the health care team	Communicates concerns and provides feedback to members of the health care team	Communicates feedback and constructive criticism to superiors	Facilitates regular health care team-based feedback in complex situations

☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐

Interpersonal and Communication Skills 3: Communication within Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records information in the patient record while safeguarding patient personal health information	Demonstrates organized and complete diagnostic and therapeutic reasoning through notes in the patient record, including appropriate modifications when using copy-and-paste function	Communicates clearly, concisely, in a timely manner, and in an organized written form, including anticipatory recommendations	Provides feedback to improve others' written communication	Models feedback to improve others' written communication
Demonstrates basic knowledge of appropriate channels of communication within the institution (e.g., pager callback, timely response to emails)	Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports)	Appropriately selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, text messages) forms of communication based on context	Provides written or verbal communication that serves as an example for others to follow	Guides departmental or institutional communication around policies and procedures

Comments:

Not Yet Completed Level 1 ☐

Interpersonal and Communication Skills 4: Complex Communication around Prognosis and Outcomes				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies prognostic communication as a key element for shared decision making	Assesses the patient's and patient's family's/caregiver's awareness and identifies preferences for receiving prognostic information	Delivers basic prognostic information and attends to emotional responses of the patient and patient's family/caregiver	Tailors communication of prognosis according to spinal cord injury or disorder characteristics and trajectory, patient consent, family needs, and medical uncertainty, and is able to address intense emotional response	Coaches others in the communication of prognostic information
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐