Appendix

**Professional in-course assessment**

Medical degrees employ a variety of assessment types to evaluate the comprehensive skills, knowledge, and competencies required in the medical field. These assessments are designed to cover the breadth of medical education, from basic science knowledge to clinical skills and professional behaviour. Here’s a rundown of common assessment types used in medical degrees:

1. **Multiple Choice Questions (MCQs)**: Used for assessing knowledge in basic and clinical sciences. MCQs are efficient for testing a wide range of content and can be designed to assess higher-order thinking by incorporating clinical vignettes.
2. **Structured Essays**: Assess students' ability to integrate knowledge and communicate effectively in writing. Essays can explore topics in depth, including ethical considerations and critical analysis of clinical scenarios.
3. **Short Answer Questions (SAQs)**: Test specific knowledge and the ability to recall and apply facts concisely. SAQs often complement MCQs in written exams.
4. **Objective Structured Clinical Examinations (OSCEs)**: Practical exams where students rotate through stations to perform clinical tasks, such as patient interviews, physical examinations, and procedural skills, observed and evaluated by examiners.
5. **Clinical Skills Assessments**: Direct observation of students in clinical settings, performing real or simulated clinical tasks. This includes patient care, communication skills, and procedural competencies.
6. **Case-Based Assessments**: Evaluation based on students' analysis, diagnosis, and management of presented clinical cases. These can take the form of written cases, oral presentations, or discussions.
7. **Portfolios**: Compilations of students' work over time, reflecting their learning progress, experiences, and reflections. Portfolios often include case summaries, reflective essays, and evidence of skill development.
8. **Peer Assessment**: Involves students assessing each other's work, providing valuable insights into teamwork, communication, and professional behaviour.
9. **360-Degree Evaluations**: Comprehensive assessments that gather feedback from all individuals involved in the students' education, including peers, faculty, and patients, to evaluate professional behaviour and teamwork skills.
10. **Progress Testing**: Administered regularly throughout the curriculum, progress tests assess students' growing knowledge base against the entirety of the medical curriculum, not just the most recently studied material.
11. **Computer-Based Simulations**: Utilize software or virtual reality environments to simulate clinical scenarios, testing students' decision-making, diagnostic reasoning, and management plans in a controlled, risk-free environment.
12. **Logbooks**: Document students' participation in various clinical procedures and encounters, ensuring they meet the required breadth and depth of clinical experience.

Each of these assessment types contributes to a holistic evaluation of a medical student’s competencies, ensuring they are well-prepared for the complex and demanding nature of medical practice.

In medical degrees, providing reasonable accommodations for disabled and neurodivergent students is crucial to ensure equitable access to education and assessment opportunities. These accommodations must be tailored to the individual's needs while maintaining the rigor and standards essential for medical training. Here are some reasonable accommodations that could be provided:

1. **Extended Time for Exams**: Offering extra time on written exams, including MCQs, essays, and SAQs, to accommodate students with processing delays, dyslexia, or other learning disabilities.
2. **Alternative Exam Formats**: Modifying exam formats, such as offering oral exams instead of written ones for students with dysgraphia or providing exams in digital format that can be used with assistive technology.
3. **Assistive Technology**: Allowing the use of speech-to-text software, screen readers, or other assistive devices during lectures, exams, and practical assessments for students with visual impairments, dyslexia, or mobility issues.
4. **Modified Clinical Assessments**: Adjusting the format of OSCEs or clinical skills assessments to accommodate physical disabilities or anxiety disorders. This might include providing simulated patients (actors) for students who require more time to articulate their clinical reasoning or perform physical examinations.
5. **Flexible Scheduling**: Offering flexible scheduling for exams, clinical rotations, and other assessments to accommodate students with chronic illnesses, mental health conditions, or those who require more frequent breaks.
6. **Accessible Learning Materials**: Ensuring all learning materials, including digital content, textbooks, and handouts, are available in accessible formats for students with visual impairments or specific learning disabilities.
7. **Note-taking Support**: Providing note-taking assistance or access to lecture recordings for students who have difficulty taking notes due to physical disabilities, auditory processing disorders, or attention deficits.
8. **Sign Language Interpreters or CART Services**: Offering sign language interpreters or Communication Access Realtime Translation (CART) services for deaf or hard-of-hearing students, especially in lecture-based and clinical settings.
9. **Individualised Support and Tutoring**: Providing additional tutoring, mentoring, or support services tailored to the student's specific needs, helping them grasp complex medical concepts or develop clinical skills at their own pace.
10. **Disability Awareness Training for Faculty and Peers**: Implementing training programs to enhance understanding and support for disabilities among faculty and peers, promoting a more inclusive and supportive educational environment.
11. **Adapted Physical Spaces**: Ensuring that all educational and clinical spaces are physically accessible to students with mobility issues, including lecture halls, laboratories, and clinical sites.
12. **Mental Health and Wellness Support**: Offering robust mental health and wellness programs, recognising the high stress of medical education and its impact on students with pre-existing mental health conditions.

These accommodations should be developed in collaboration with disability services offices, medical educators, and the students themselves, ensuring that adjustments are personalised and effective in addressing the unique challenges faced by disabled and neurodivergent students in medical degrees.

In **pharmacy degrees**, where the curriculum combines a mix of theoretical knowledge and practical skills, providing reasonable accommodations for disabled and neurodivergent students is essential to ensure equitable access to education and assessments. These accommodations should be tailored to individual needs and designed to support students in both classroom learning and practical experiences. Here are some accommodations that could be provided:

1. **Extended Time on Exams and Assignments**: For students who require more time due to processing disorders, dyslexia, or other learning disabilities, extended time can help ensure they fully demonstrate their knowledge and skills.
2. **Alternative Formats for Course Materials**: Providing textbooks, handouts, and other course materials in accessible formats, such as Braille, large print, or audio, can accommodate students with visual impairments or specific learning disabilities.
3. **Use of Assistive Technology**: Allowing the use of text-to-speech software, screen readers, and other technological aids can support students with various disabilities in accessing information and completing assignments.
4. **Adapted Laboratory Workstations**: Modifying lab setups to be accessible for students with mobility impairments or ensuring that lab materials are reachable for students who use wheelchairs or have other physical disabilities.
5. **Flexible Scheduling**: Offering flexible scheduling options for classes, exams, and practical experiences can accommodate students with chronic illnesses or those who require medical treatments.
6. **Note-taking Assistance**: Providing note-taking services or access to lecture recordings can benefit students who have difficulty taking notes due to physical, cognitive, or learning disabilities.
7. **Sign Language Interpreters or CART Services**: For deaf or hard-of-hearing students, having sign language interpreters or Communication Access Realtime Translation (CART) services available during lectures and lab sessions.
8. **Tailored Practical Assessments**: Adjusting the format or conditions of practical assessments, such as compounding or clinical simulations, to accommodate students' specific needs while maintaining the integrity of the learning outcomes.
9. **Individualized Feedback and Support**: Offering additional feedback sessions or academic support tailored to the student's needs can help address areas of difficulty and enhance learning.
10. **Exam Modifications**: Providing exams in alternative formats, allowing oral examinations instead of written for students with dysgraphia, or ensuring exam questions are accessible to students with reading disabilities.
11. **Peer Support and Mentorship**: Facilitating peer support groups or mentorship programs can provide additional academic and emotional support to students navigating their pharmacy degree.
12. **Mental Health Support**: Recognizing the stress associated with rigorous pharmacy programs, providing robust mental health and wellness resources is crucial for supporting all students, especially those with pre-existing mental health conditions.

Collaboration between students, disability services, and pharmacy faculty is key to identifying the most effective accommodations. These accommodations aim to remove barriers and enable all students to achieve their full potential in their pharmacy education and future careers.

### **Specific Accommodations for Objective Structured Clinical Examinations (OSCEs)**

* **Alternative Formats**: Provide OSCEs in alternative formats that maintain the examination's integrity while being accessible. For example, using virtual simulations for students with physical disabilities that prevent them from performing certain tasks.
* **Extended Time**: Allow extra time for completing tasks at stations, especially where disability impacts speed of movement or task execution.
* **Physical Accessibility**: Ensure all examination stations and related facilities are wheelchair accessible and have adjustable equipment.
* **Assistive Technology**: Equip stations with assistive technology, such as speech-to-text software, screen readers, or specialized medical equipment modified for various disabilities.

### **3. Training for Staff and Faculty**

* **Awareness Training**: Regularly conduct disability awareness and sensitivity training for all staff and faculty involved in teaching and assessment.
* **Specialized Training**: Provide specific training on how to use assistive technologies and how to adjust teaching and assessment methods to accommodate disabled students.

### **4. Flexible Assessment Methods**

* **Customised Assessments**: Customize assessments to meet the educational objectives without compromising the required competencies. This could involve alternative questioning methods or practical demonstrations that are equivalent in assessment criteria but adapted for accessibility.
* **Continuous Assessment**: Where possible, use a model of continuous assessment that allows students to demonstrate their competencies over time rather than in a single high-stress setting.

### **6. Legal Compliance and Advocacy**

* **Regulatory Adherence**: Ensure all accommodations comply with national and regional disability laws, such as the Equal Status Act
* **Advocacy**: Actively advocate for rights and better resources for disabled students at institutional, local, and national levels.

### **7. Evaluation and Improvement**

* **Regular Reviews**: Conduct regular reviews of accommodation effectiveness and the overall inclusivity of the course structure.
* **Research and Development**: Invest in research and development of new methods and technologies that can enhance accessibility.

By implementing these guidelines, educational institutions can create a more inclusive environment that allows disabled students to thrive in professional courses, particularly in rigorous fields like medicine. This not only supports the students but also enriches the professional field with diverse perspectives and capabilities.

**Clinical skills assessments**

Accommodating disabled students in clinical skills assessments requires thoughtful adaptations that ensure fairness while maintaining the rigorous standards expected in professional courses such as those in medical education. Here are guidelines designed to provide effective, inclusive, and reasonable accommodations for disabled students during clinical skills assessments:

### **1. Initial Assessment and Planning**

* **Individual Assessment**: Conduct individualised assessments to understand each student's specific needs and limitations. Collaborate with disability services to determine the most effective accommodations.
* **Tailored Accommodation Plans**: Develop customised accommodation plans that address the specific requirements of each student without compromising the learning outcomes of the clinical assessment.

### **2. Modifications to Clinical Skills Assessments**

* **Adjustable Equipment**: Provide adjustable beds, chairs, and medical equipment to accommodate mobility impairments.
* **Assistive Technologies**: Utilise technology such as amplified stethoscopes for hearing-impaired students or magnification devices for visually impaired students.
* **Alternative Communication Tools**: For students with speech or hearing impairments, provide options like speech-to-text services, sign language interpreters, or written communication aids.

### **3. Assessment Environment Adjustments**

* **Accessible Locations**: Ensure that all clinical assessment locations are accessible, including having ramps, adequate door widths, and suitable restroom facilities.
* **Flexible Scheduling**: Offer flexible scheduling to accommodate varying energy levels and medical needs, such as extended time for those who may require breaks or a slower pace to complete tasks effectively.

### **4. Training for Evaluators and Staff**

* **Disability Awareness Training**: Provide comprehensive training for all evaluators and staff on disability awareness, legal obligations, and the specifics of the provided accommodations.
* **Evaluation Techniques**: Train evaluators on how to fairly assess clinical skills while taking into account the use of assistive technologies or modified techniques by disabled students.

### **5. Adapted Assessment Methods**

* **Direct Observation Adjustments**: When observing students, evaluators should focus on the outcomes and quality of care provided rather than the standard method of execution. This allows assessment of competencies that are not dependent on performing tasks in a traditional manner.
* **Simulated Scenarios**: Use simulated patients or high-fidelity manikins in scenarios that might be inaccessible in real-life settings due to a student's disability.

### **6. Procedural Modifications**

* **Modified Procedures**: Allow modifications to standard procedural tasks (e.g., allowing a seated position for procedures typically performed standing) as long as the clinical outcomes are not compromised.
* **Task Reassignment**: When specific tasks are not feasible due to a disability, consider alternative tasks that can assess the same competencies.

### **7. Support and Advocacy**

* **Continuous Support**: Provide continuous support through designated disability coordinators who can assist in navigating and advocating for necessary accommodations.
* **Peer Support**: Encourage and facilitate peer support networks and mentoring from other students who have navigated similar challenges.

### **8. Regular Review and Feedback**

* **Feedback Mechanisms**: Implement mechanisms for students to provide feedback on their assessment experiences and the effectiveness of accommodations.
* **Ongoing Reviews**: Regularly review and adjust accommodation strategies to ensure they are meeting the needs of disabled students effectively and equitably.

### **9. Compliance and Ethical Considerations**

* **Legal Compliance**: Ensure that all accommodations comply with applicable disability laws, which may vary by location but include principles of reasonable adjustment and equal access.
* **Ethical Standards**: Maintain high ethical standards by ensuring that accommodations do not compromise the essential requirements and safety standards of the profession.

By adhering to these guidelines, educational institutions can create a fair, accessible, and supportive environment for disabled students during clinical skills assessments, thereby enhancing their learning experience and professional development.