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Outcomes of Nusinersen in adult and pediatric cohorts of spinal muscular amyotrophy after two years of usage at the CHU de Québec-Université Laval

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Background: Nusinersen is approved for spinal muscular amyotrophy type I,II,III and is available for adult and pediatric populations since January 2019 at the CHU de Québec-UL. **Methods:** Patients who received at least one dose of nusinersen between January 2019 and March 2021 were included. Required information was gathered from patients' charts. **Results:** Ten adults (70 injections) and 23 infants and children (202 injections) were included. No child but two adults stopped the therapy for personal reasons. Tests were performed at 0, 6, 18, 24 months when possible to assess efficacy, tolerability and quality of life perception (Table 1). Preliminary data shows stabilization or improvement for many tests. **Conclusions:** Nusinersen is well tolerated. Favorable effects were observed in both populations. A monitoring is still imperative for an objective assessment and for evaluation of the most relevant tests. Long term benefits remain to be demonstrated but results are encouraging.

	PCF	FVC	CHOP	RULM	6MWT	HFMSE
Adult	√	√	√	√	√	√
Pediatric	√	√		√	√	
	HFMS	**TUG**	**Step test**	**SMARFS**	**PedsQL**	
Adult	√			√	√	
Pediatric	√	√	√		√	

Neuroscience Education

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Investigation of Simulation-Based Lumbar Puncture Teaching Paradigms for Novice Learners

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Background: Simulation-based educations' prevalence within clinical neuroscience is on the rise, however investigation into what environment is most conducive to optimizing learning performance is limited. We aimed to determine whether training a simple-to-complex (progressive) sequence would result in superior learning compared to complex-to-simple (mixed) or complex-only sequences. **Methods:** A three-arm, prospective, randomised experiment was conducted to determine the effects on novice learner LP performance and cognitive load during learning and a very complex simulated reality assessment test 9-11 days later. **Results:** During learning, sterility breaches decreased linearly over time ($p<.01$) with no group differences, and accuracy was higher in the progressive group compared to complex-only ($p<.01$) and trended in the mixed group ($p<.09$). Across the learning phase cognitive load increased in the progressive group ($p<.01$) and decreased across the mixed group ($p<.01$). At assessment, there were no group differences in number of sterility breaches ($p=.66$), needle passes ($p=.68$) or cognitive load ($p=.25$). **Conclusions:** Contrary to our hypothesis, equivocal assessment performance was found across groups. Our results suggest that successive progression in complexity of simulation does not increase novice learner outcomes. Further, a "one-size fits all" approach to simulated environment complexity in clinical neurosciences education may be warranted given equivocal learning and less resources necessary.

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'Building Your Neurology Acumen': a flipped classroom approach to strengthen Internal Medicine residents' neurological skills

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Background: Rotating internal medicine (IM) residents do not feel adequately prepared to approach patients with neurologic issues. The purpose of this project was to conduct a needs assessment to determine the optimal components and delivery of a neurology curriculum for internal medicine residents. **Methods:** We utilized a mixed-methods design and recruited participants through a combination of purposive and convenience sampling. We conducted interviews with IM residents (n=12) and focus groups with neurology residents (n=7) and neurology staff (n=8). IM residents completed entry- and post-call surveys while on a neurology rotation. **Results:** Themes according to Kern's framework for curriculum development: 1. Problem: Discomfort and perception of under-preparedness amongst IM trainees 2. Needs Assessment: What the learners (stakeholders) think they need to know vs. what their teachers want them to know vs external requirements (Royal College) 3. Goals/objectives: What content is relevant for clinical requirements vs assessments? 4. Methods and setting: Didactic vs bedside vs virtual 5. Implementation of the curriculum 6. Evaluation and feedback **Conclusions:** Our findings illustrate a possible mismatch between internal medicine residents' needs and neurologist teachers' expectations in teaching neurology. Addressing learners' needs could enhance neurology knowledge and sense of preparedness when encountering patients with neurologic issues.