

Appendix 2. Summary of key online education challenges identified by medical educators and general practice registrars, with illustrative quotes

Theme	Illustrative quotes
Distracted, disengaged learning environment and invisible registrars	
GPRs and MEs lost energy because of the limitations of Zoom. Registrars felt depersonalised in a 'less collegial', 'black screen world'. Sessions were didactic.	<p>From MEs:</p> <p><i>Tired when they're online for long periods of time ... make sure ... sessions moving, (different) ... activities ... regular breaks. [Female ME Regional]</i></p> <p><i>... if there's more than five people... not speaking ... you can't see ... have to consciously hunt for who's not participating. [Female ME Rural]</i></p> <p>From registrars:</p> <p><i>Do I have time to make tea? ... daydream ... If you have a break online... You lose ... engagement ... you can't be ... as engaged ... you haven't physically gone to a place and committed to that. [Male GPR Regional]</i></p> <p><i>And that usually doubles as your lunch break ... sitting down on a park bench with your phone between the sandwich and your knees. [Male GPR Rural]</i></p>
Content delivery increased ME preparation time and cognitive load	
<p>MEs had more challenges than registrars, including impossibility of adapting some sessions (eg procedural workshops, sensitive ethically loaded topics).</p> <p>Mixed registrar views about less content or more efficiency. Some said OLL content needed redesign and new skills development.</p>	<p>From MEs:</p> <p><i>Focus ... how you're engaging ... who's interacting and who's turned their microphone off ... to sleep ... I find it a bit more tiring. [Female ME Rural]</i></p> <p><i>... we would run a panel topic on domestic violence ... or ethical scenarios. We ... stayed away from those because I couldn't monitor the safety of the registrars in the room. [Female ME Regional]</i></p> <p>From registrars:</p> <p><i>The activities weren't designed ... for an online session. [Male GPR Rural]</i></p> <p><i>... more exhausted by doing online stuff because you're having to work more ... pay more attention. [FG1]</i></p>
Social connection reduced	
Less communication, collegiality, interaction and sense of belonging to a community of practice. Lack of eye contact and loss of conversational flow noted.	<p>From MEs:</p> <p><i>Shared experience and support ... extremely difficult to do ... feeling of emotions because it really is an incredibly emotional experience that these registrars are undergoing. [Male ME Urban]</i></p> <p>From registrars:</p> <p><i>A lot more isolated not having the face-to-face ... social experiences ... you don't actually interact with your supervisor or group. [FG1]</i></p>
Technological inadequacies	
<p>Delays from poor internet connections, power cuts, screen-sharing issues and audio/visual absence. Chat boxes were a distraction.</p> <p>MEs struggled to multitask, gain skills and use equipment.</p> <p>Registrars reported frustration if the educator was not skilled in OLL technology.</p>	<p>From MEs:</p> <p><i>... the most challenging ... The technology ... At the same time doing ... education and facilitation work. [Female ME Urban]</i></p> <p><i>... three laptops ... two logged into Zoom ... the presentation on one ... the faces on another ... I was so terrified of it dropping out. [FG2]</i></p> <p>From registrars:</p> <p><i>... the chat box ... gets way ahead and ... order of things ... becomes really disjointed, and ... random stuff on there. [Female GPR Urban]</i></p> <p><i>[MEs] know how to use the program, and not spend ... five or 10 minutes ... to think about how to do it. [FG3]</i></p>

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Appendix 2. Summary of key online education challenges identified by medical educators and general practice registrars, with illustrative quotes (Cont'd)

Theme	Illustrative quotes
More time demands and space invasion	
MEs noted that time was needed for groups to form and perform; OLL sessions invaded free time and privacy.	<p>From MEs: <i>... they're struggling ... you see their ironing piled up and the clothes drying ... dishes stacked in the sink ... you just wish you hadn't seen it. [FG2]</i></p>
Registrars had more challenges, with long, inefficient sessions and needing protected time, including need to integrate and reinforce learning.	<p>From registrars: <i>Online 1 'til 2 o'clock ... 2:01 you're back ... seeing patients ... and there is no break ... good luck to you if you remember anything [Male GPR Rural]</i> <i>There were some sessions where it took over 25 minutes out of 90 minutes just to get through the pleasantries. [Female GPR Rural]</i></p>
Learning safety and pastoral care was reduced	
MEs and registrars found limited chances to get to know each other to be a barrier to safe learning.	<p>From MEs: <i>You can't make [GPRs] talk online ... You can't assess how they're working interpersonally ... You can't assess how they problem solve. [FG1]</i></p>
MEs felt unable to assess registrars, personally and educationally.	<p><i>That care factor, that extra love ... Care that we get you where you want to be. That's really hard to convey on a Zoom. [FG2]</i></p>
Registrars noted difficulty asking about individual concerns or needs because absence of private space.	<p><i>Too many ... have their microphones off or their cameras off ... whether that's because they're unsafe ... You just don't know. [Female ME Regional]</i></p>
	<p>From registrars: <i>... if you are wanting ... discussion about how things are going and ... struggles and things like that, that's just not going to happen on Zoom. [FG1]</i></p>

FG, focus group; GPR, general practice registrar; ME, medical educator; OLL, online learning