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Enhancing departmental teaching in the digital age: As easy as 1-3-5

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Introduction

The Grand Round is a seemingly universal teaching format in neurology units. The weekly case-based learning event where a case presentation by a trainee is discussed, mulled over, and picked apart by the unit at large. The benefits of this are well-described and commonly accepted.¹ This format is an excellent way of demonstrating how clinicians process sometimes complex cases, providing an enjoyable diagnostic puzzle, fostering lively discussion and, above all, emphasising (and being itself a demonstration of!) the importance of multidisciplinary teamwork. Without losing this, we felt that there should be a way of presenting interesting facts or concepts unencumbered by a full case presentation, while adhering to the principle that the best educational events bring people together and enhance cooperation and dialogue among the participants. As a result, we introduced a 'bite-sized learning' format, known locally as '1-3-5 presentations', as the opening of our weekly departmental educational meetings in August 2021.

What is the 1-3-5 presentation?

The format is simple:

1 Topic (a symptom, a clinical sign, a disease, a drug, a test)

3 Slides (this is a guide and not rigidly enforced)

5 Minutes (this is usually not a problem, and easily adhered to since, by our tradition, no questions are allowed)

Why use the 1-3-5 presentation format?

1-3-5 presentations have significantly increased the breadth of our neurology education and have proved popular with both junior and senior members of staff. The 'bite-sized' format allows the most junior members of the department to gain experience in presenting to senior colleagues in a comfortable and non-threatening environment. More senior and experienced presenters enjoy the accessible way of highlighting an item of interest (or sometimes a bugbear or hobby horse) garnered from their own clinical practice.

Most have focused on day-to-day practicalities for the jobbing neurologist: the recognition of a specific neurological sign (e.g. eye-signs in myasthenia gravis); the relevance of a radiological finding (e.g. Dawson's fingers on MRI); or use of a particular medication (e.g. initiation of Levodopa in Parkinson's disease) (figure 1). However, the short format also lends itself as a succinct introduction to a particular research interest (e.g. C9orf72), the availability of a new service (e.g. MR guided Focused Ultrasound (MRgFuS) in essential tremor) or to highlight a particular guideline (e.g. prognostication in Out of Hospital Cardiac

Arrest). The 1-3-5 presentations have also provided a platform for discussion on a variety of holistic topics, including fertility in neurology, addiction, and assisted dying. Such subjects are rarely the focus of 'long' case presentations but are often at the core of challenging consultations and can reflect important local issues, learned experiences, and identify potential for improvement. Highlighting these through a 1-3-5 presentation opens the floor to a fruitful discussion within the unit.

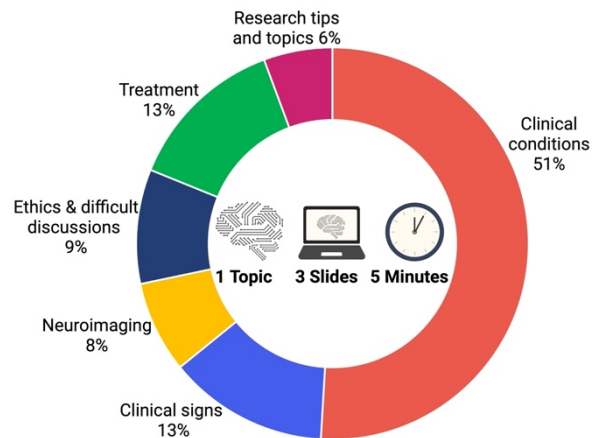


Figure 1: Donut chart reflecting the subject matter (chosen by the presenters) of 1-3-5 presentations over the initial 18-month period (N=53). Figure created at BioRender.com

How to prepare a 1-3-5 presentation

To reflect learning needs across the department as a whole, we designed a rota in which presenters at all stages of training (from junior registrars to consultants) participate in delivering 1-3-5 presentations. Each participant will be familiar with the format.

One topic

Without needing a case to frame the subject, the presenter can choose from any number of topics. The format encourages a specific neurological topic to be addressed, particularly those that are relevant and applicable to everyday clinical practice. These might be inspired by a question raised during teaching, a recent scientific paper, a new service within the department, a topic in the media or a clinical encounter. Keeping the topic focused and presenting only information critically relevant to the learner helps eliminate any extraneous cognitive overload.² For example, when preparing a 1-3-5 on 'Calcitonin gene-related peptide (cGRP) agents in chronic migraine', the aim is to ensure trainees know when to consider cGRP agents as a treatment option for a patient with chronic migraine. All other information about migraine headaches, such as diagnosis, investigations and alternative treatment options is excluded.

Topics that are too broad or dependent upon preceding specialist knowledge are unlikely to suit this style of learning. Some examples of topics that have proven popular in our department include 'Transient global amnesia', 'Nitrous oxide induced neurological toxicity' and 'Extensor plantar response'. Whilst teaching on core aspects of the neurology curriculum is encouraged, presenters may alternatively talk about rarer or more exotic topics, for example, 'Red ear syndrome' or 'Eye of the tiger sign'. Doing so in a 'bite-sized' way is effective, reducing cognitive overload for the learner which may hinder learning.³

Three Slides

The presentation should consist of three slides. Limiting the number of slides steers the presenter away from the pitfall of reviewing all content relevant to the topic and instead encourages them to include only pertinent information or offer an accessible introduction to a wider area.

The presenter is encouraged to focus on visual aids that enhance learning and break down complex concepts into discrete snippets that allow learners to more easily process and retain knowledge.³ For this reason, although we have not imposed a minimum number of slides, we would advise against a 1-3-5 presentation becoming a 1-0-5 presentation. Having 3 slides clearly sets out the agenda and aids the presenter in delivering a focused presentation on a narrow topic in a short time-period.

Five minutes

Finally, the presentation should be brief - we aim for five minutes. This short time-period ensures maximum efficiency (and audience engagement). Presenting information in a succinct manner is a skill relevant to many clinical settings, such as multi-disciplinary meetings or medical emergencies. 1-3-5 presentations provide junior colleagues with an opportunity to see how more experienced colleagues approach this and to practice this skill in a non-pressured environment.

We do not include time for questions, but often find that informal discussion and debate occurs across the rest of the week in various settings. By encouraging discussions about the 1-3-5 to occur outwith the immediate educational event, we provide learners with an opportunity to reflect on what they have learned and questions they may have. The lack of question time also ensures that 1-3-5s are regarded as 'safe' teaching time for the inexperienced presenter. In our department we have found that constructive feedback to the presenter is often provided, particularly by senior colleagues, and usually in an ad-hoc and informal manner that fosters a supportive learning environment.

Setting up a Neurology 1-3-5 YouTube Channel

Due to COVID-19 restrictions impeding face-to-face departmental teaching, the initial 1-3-5 presentations were delivered in a strictly online setting over Microsoft Teams. This enabled us to record the presentations and generate a library of videos. The videos were well-received among trainees and, even after transitioning back to in-person departmental teaching, we continued to record the presentations. This led us to create a Glasgow Neurology 1-3-5 YouTube channel that acts as an online repository of videos and is freely and publicly available.⁴

In summary, 1-3-5 presentations have proved an asset to our departmental teaching schedule and to the department at large. By sharing our experience, we hope to inspire colleagues to trial similar education strategies in their own departments, foster collaborations between neurology departments, and bring bite-size neurology learning to all.

Key points

- 1-3-5 presentation format: One topic, Three slides, Five minutes - a useful addition to the weekly Grand Round.

- 1-3-5 presentations offer a platform for 'bite-size' teaching on any number of neurological topics, including, but not limited to, clinical signs, investigations, treatment options, ethical issues, or research interests.
- All our 1-3-5 presentations are freely available on The Glasgow Neurology 1-3-5 YouTube channel: <https://www.youtube.com/@glasgowneurology1-3-55>

Further Reading

- Thillainadesan, J., Le Couteur, D. G., Haq, I. & Wilkinson, T. J. When I say ... microlearning. *Med. Educ.* 56, 791–792 (2022).
- Mayer, R. E. Applying the science of learning to medical education. *Med. Educ.* 44, 543–549 (2010).

Competing interests

There are no competing interests for any author.

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Contributorship

Conceptualisation: SJM and JPL. All authors contributed equally to manuscript drafting and editing. SJM and VF: ongoing YouTube channel management.

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Ethical approval

Not applicable

Data sharing statement

Not applicable. 1-3-5 videos are freely and publicly accessible on YouTube at www.youtube.com/@glasgowneurology1-3-55

References

1. Ross Russell, A.L., Reilly, M.M. & Turner, M.R. Grand rounds: a precious resource to be nurtured. *Pract. Neurol.* 20, 342–344 (2020).
2. Mayer, R. E. Applying the science of learning to medical education. *Med. Educ.* 44, 543–549 (2010).
3. Young, J. Q., Van Merriënboer, J., Durning, S. & Ten Cate, O. Cognitive Load Theory: Implications for medical education: AMEE Guide No. 86. *Med. Teach.* 36, 371–384 (2014).
4. Martin, S.J., Fenech, V. & Leach, J.P. Glasgow Neurology 1-3-5. (2021). Available at: <https://www.youtube.com/@glasgowneurology1-3-55>.
5. Thillainadesan, J., Le Couteur, D. G., Haq, I. & Wilkinson, T. J. When I say ... microlearning. *Med. Educ.* 56, 791–792 (2022).
6. V, C. *et al.* A Review of Digital, Social, and Mobile Technologies in Health Professional Education. *J. Contin. Educ. Health Prof.* 37, 195–206 (2017).