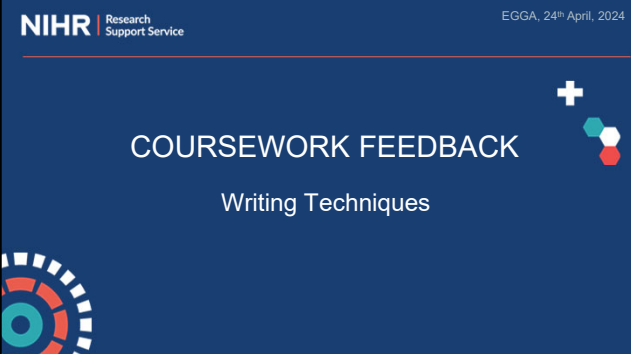


NIHR Research Support Service EGGA, 24th April, 2024

COURSEWORK FEEDBACK

Writing Techniques



1

Writing Tips: Story, Style & Sales Pitch

1. What immediately obvious thing has been done to help the reader?
2. Find three examples of **ASSERT-JUSTIFY**.
3. Find two examples of where **ASSERT-JUSTIFY** might have been used, but was not. Can you find a sentence in the paragraph that could either be used or adapted for use for this purpose?
4. Find three examples of **priming**
5. Find three examples of **linking**
6. Find three examples of **signposting**
7. Can you identify any **tag-phrases**?
8. In five short bullet points, outline the **argument** being made to reviewers
9. Did you understand the importance of the proposed work?

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1. What immediately obvious thing has been done to help the reader?

Sub-headings

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3

2. Find three examples of **ASSERT-JUSTIFY**

Para.5

Early Warning Scores have been developed using suboptimal methods

Several approaches have been used to develop EWSs. The majority have been based wholly or partly on the clinical expertise of a committee and on a review of the literature...

4

Paras.10 & 13

A fundamental problem with current methods for developing EWSs is that only a patient's most recent information is considered. Current EWSs all aim to predict future risk of deterioration based on a single moment in time, the most recent vital signs measured for a particular patient...

Next-generation scores risk being developed using the same poor statistical methods

Despite their enormous potential, there has been no obvious improvement in the methods used to develop EWSs in the five years since electronic systems became available...

5

Para. 14

My research will provide a better solution

The developments in electronic systems and their increasing use within hospitals present an opportunity and need for robust and novel methods to be applied to EWSs, to take them to the next stage of their development...

6

3. Find two examples of where **ASSERT-JUSTIFY** might have been used, but was not. Can you find a sentence in the paragraph that could either be used or adapted for use for this purpose?

7

Para. 1

Clinical problem

Severe clinical deterioration of hospital patients is often preceded by changes in their physiological parameters, such as blood pressure, respiratory rate, pulse and level of consciousness.¹⁻⁴ Chart reviews and a recent report from the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) show that before serious events such as death, cardiac arrest and intensive care unit admission occur, there is often several hours of evidence of clinical deterioration. Many of these serious events could thus be prevented with appropriate action.^{3,5-8} Factors associated with failure to prevent deaths in hospital include poor patient monitoring, failure to recognise signs of deterioration, inadequate interpretation of physiological changes, and failure to take appropriate action.⁹⁻¹² A recent review estimated that 12,000 deaths could have been prevented in English hospitals in 2009, whilst other sources estimate this number could reach 40,000 per year.³

8

Clinical problem

A recent review estimated that 12,000 deaths could have been prevented in English hospitals in 2009, whilst other sources estimate this number could reach 40,000 per year.³ Severe clinical deterioration of hospital patients is often preceded by changes in their physiological parameters, such as blood pressure, respiratory rate, pulse and level of consciousness.¹⁻⁴ Chart reviews and a recent report from the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) show that before serious events such as death, cardiac arrest and intensive care unit admission occur, there is often several hours of evidence of clinical deterioration. Many of these serious events could thus be prevented with appropriate action.^{3,5-8} Factors associated with failure to prevent deaths in hospital include poor patient monitoring, failure to recognise signs of deterioration, inadequate interpretation of physiological changes, and failure to take appropriate action.⁹⁻¹²

9

Para. 7

By definition, a model will generally fit better to the data that it is derived from than most other datasets. Models must therefore be evaluated on another, independent, dataset, which is known as external validation.²⁰ As there is little evidence that EWSs generally undergo external validation, their performance is largely unknown, which raises questions about whether they should be used.²¹ The validation studies that do exist tend to have been poorly designed, conducted and reported, show only limited usefulness, look at a very specific population, or have been carried out on a very similar population to the original derivation dataset.^{2 2,23}

10

There are questions about whether current EWSs should even be used due to validity issues.²¹ By definition, a model will generally fit better to the data that it is derived from than most other datasets. Models must therefore be evaluated on another, independent, dataset, which is known as external validation.²⁰ As there is little evidence that EWSs generally undergo external validation, their performance is largely unknown. The validation studies that do exist tend to have been poorly designed, conducted and reported, show only limited usefulness, look at a very specific population, or have been carried out on a very similar population to the original derivation dataset.^{2 2,23}

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4. Find three examples of priming

Para. 1

A recent review estimated that 12,000 deaths could have been prevented in English hospitals in 2009, whilst other sources estimate this number could reach 40,000 per year.³

Priming for provision of solution later.

Para. 3

However, due to numerous deficiencies in the methods used to develop many of these EWSs, the authors concluded that none of the algorithms could be said to 'perform well' at identifying patients at increased risk of in-hospital death from those who were not.

Priming for need for a new algorithm

Para. 14

I will use statistical regression modelling techniques that are robust and unbiased, and will more accurately link vital signs to patient outcomes.

Priming for what to expect in methods section

12

5. Find three examples of linking

Para. 6

However, measurements are likely to be highly correlated within a patient, and therefore results from these approaches could be biased and over-confident. Further, although the link between vital signs and patient outcomes is of interest, it can often be confounded by treatment interventions.

Para. 8

As one would expect different physiological factors to predict poor outcome in different illnesses, a generic algorithm is likely to perform badly in some groups.^{24,27} Furthermore, despite their broad target population, most algorithms do not contain patient-specific variables that could 'individualise' the prediction, such as age, sex and medical indication (and severity).²⁹

Para. 15

Finally, and perhaps most importantly, I will use dynamic prediction modelling methods to build prediction models that use both past and current measurements.

13

6. Find three examples of signposting

Para.3

'A systematic review published in 2007 found...'

Para. 4

'In the same year, NICE released guideline CG50...'

Para. 5

'Several approaches have been used to develop EWSs...'

14

7. Can you identify any tag-phrases?

- 'Early warning score/s' (x4); 'EWS' (x32)
- 'Vital signs' (x14)
- 'Dynamic prediction' (x2)
- 'Risk prediction' (x3)
- 'Prediction model' (x3)

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8. In five brief bullet points, tell the story being conveyed to reviewers

- There are between 12,000 & 40,000 preventable deaths in hospital each year because patients' deterioration goes unnoticed
- If we could more accurately identify patients when they deteriorate, many lives could be saved
- Previous work indicates current early warning scores (EWSs) are not very good. There is a real window of opportunity to solve this problem, using better data and better approaches, now patient records are largely electronic
- This research will provide a solution to the problem by developing a better EWS
- If this is successful, many lives will be saved

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9. Did you understand the importance of the proposed work?

Vote now!

17
