Utilising Data to Better Inform 'Variance in Cancer Care' and Improve Outcomes

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Background

We are in the era of ensuring cancer care provision is centred on improved quality, innovation and outcomes.[1,2] Commissioners are required to deliver against these goals whilst ensuring that spending delivers value for money.

So what comprises best practice in cancer care provision and the parameters which can help track progress? There are PCTs and Cancer Networks with the best outcomes, so what can be learnt to help other Commissioners improve outcomes for all cancer patients?

Notably, lung cancer remains an area with consistently poor survival data.[3] Whilst there is the need to ask about the reasons for this, more pertinent is to highlight where and why there is variability in patient outcomes[4] and to understand the key differences in cancer care provision driving this.

Objective

Through joint working groups[5] to identify key parameters that define and track 'Variance in Cancer Care Provision' for lung cancer. Using robust methodologies and analytical rigour to weight parameters that indicate 'best practice' in commissioning for particular respective treatment pathway(s). The impetus behind defining 'best practice'is that these lead to improved quality, innovation and outcomes.

Methods

Using data and analyses to define variability is key. A preliminary step to indicate variability is understanding the distribution of cancer networks across certain key data themes. This would include reviewing the range and frequency across a series of defined upper and lower quartiles. Data themes have been categorised from the initial data reviewed, which is listed below along with rationale:

- populations
  - from a budgeting perspective does allocated spend reflect demand of the cancer need?
- epidemiology
  - review of 'demands' on the system and outcomes from cancer care provision
- resource utilisation
  - levels of spend and identifying effective spend in relation to generated outcomes
- environmental
  - with the focus on improving inequalities and outcomes, how do socio-economic factors play a part in the dilemma of budgeting and planning for the future versus improving outcomes today?

These data themes could initiate the necessary stakeholder engagement to identify key parameters for best practice commissioning in cancer care provision. However, the latter requires clinical and commissioning leadership.

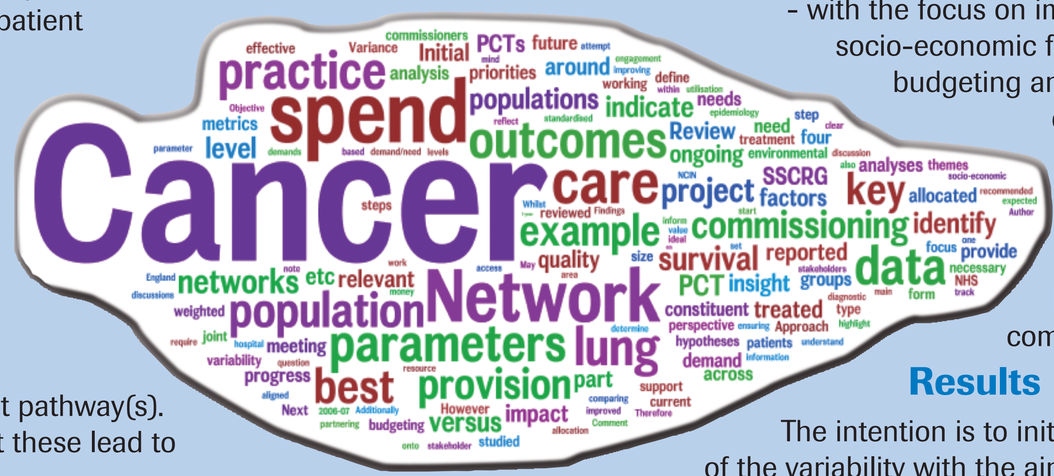

Image attributed to www.wordle.net

Results

The intention is to initiate discussion about the underlying causes of the variability with the aim of generating hypotheses about why is there variability in survival versus spend (with a crude method of ensuring size of so-called 'treated' population is standardised). Are there clear examples to indicate that networks with improved reported outcomes are doing so with effective spend or not? Equally the reciprocal question can be asked about networks with high relative spend but poorer outcomes. However, cancer network data is amalgamated so the next step would be to take this down to PCTs for example, again attempting to determine which parameters indicate 'best practice'.

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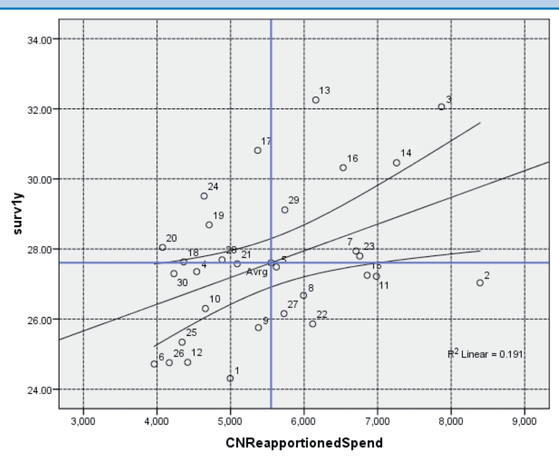
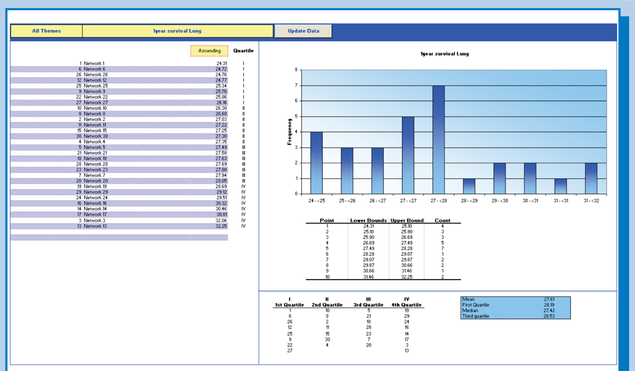
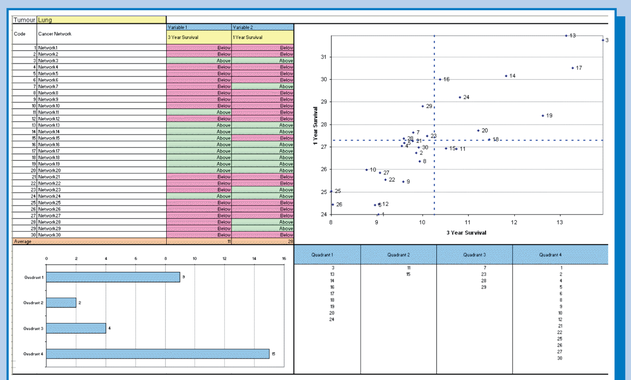


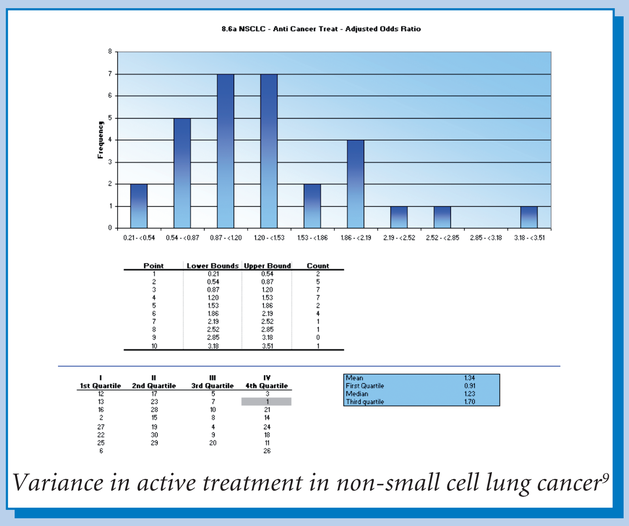
Linear correlation between 1-year survival in lung cancer[6] versus total cancer spend in lung cancer[7] standardised by the number of hospital treated lung cancer patients[8]



Utilising decile- and quartile-based analyses to better track variance in 1-year survival in lung cancer[6]



Cluster analyses - values above and below the English average



Variance in active treatment in non-small cell lung cancer[9]

Conclusion

Diagnosing the variance in cancer care provision and outcomes is crucial, but doing so without providing some insight into solutions would not be beneficial. So far the data sets reviewed for cancer networks have enabled variance to be better defined and indicate areas of best practice. However, to derive further value from this approach, it is recommended that as part of any clustering analyses (i.e., pinpointing differences between networks) further analysis of variation at the constituent PCT level (both from a resident alignment and *referred* treatment population perspective) would be required.

References

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