



In the first of our regular series of blogs, Dr Peter Elton, our clinical director, warns of the danger of creating artificial groups to treat people differently.

In the 4th century BC, Eubulides described the bald man paradox.

The paradox is that a man with a full head of hair is obviously not bald. Now the removal of a single hair will not turn a non-bald man into a bald one. And yet it is obvious that a continuation of that process must eventually result in baldness.

In clinical practice, we have dealt with this paradox by creating artificial dichotomies which can interfere with making the best decisions. Sometimes these dichotomies use descriptive terms such as hypertension and normotension for blood pressure.

At other times, we assign a disease to those on the wrong side of the dichotomy such as diabetes and osteoporosis.

Does this matter?

Should this affect how we do our work in the Strategic Clinical Networks?

Randomised controlled trials for changing lifestyles and self-management to improve glycaemic control have tested two different forms of interventions.

For people with diabetes, randomised controlled trials have tested programmes (structured education) lasting one or two half days, while people who have nondiabetic hyperglycaemia have tested programmes (diabetic prevention programmes) of about a dozen sessions, lasting one to two hours.

The availability of the evidence has led to those with an HbA1c of below 48 mmol/mol being offered more intensive education than those whose HbA1c is above 48mmol/mol. Are patients at either side of that dichotomy so different?

There are other examples. There is good evidence that hearing impairment increases the risk of depression and remaining depressed. Hearing impairment is defined as a hearing loss of 20 decibels.

It is likely that any hearing loss contributes to depression. So as well as measuring hearing loss in people with depression, checking for wax, that can impair hearing and can be easily removed, should also take place with all people with the condition.

For blood pressure, if a person does not have a systolic blood pressure above 140mmHg or diastolic above 90mmHg, clinicians tend not to give any advice to reduce blood pressure.

The evidence is that even for people with blood pressure somewhat below these levels, there is an advantage in reducing blood pressure, especially if a person has a high risk of cardiovascular disease.

This will include people with a history of cardiovascular disease or a combination of risk factors such as age, high cholesterol and family history. Such patients will benefit from advice on non-drug interventions such as reducing sodium intake and biofeedback therapy.

There are other dangers of dichotomising data. In research, we lose power if we dichotomise the data. For example, interventions to improve birthweight should be looking to shift the birthweight distribution to the right (excluding macrosomia) rather than just to reduce low birthweight as health risks continue to decline above a birthweight of 2,500 grammes.

When in our work, we are looking at a variety of health statuses such as COPD, renal failure and mild cognitive impairment, dichotomising health characteristics may be helpful. This should not blind us to the dangers that this poses and we should adjust our thinking accordingly.