Population-level studies tend to use secondary data either on individuals or on regional areas. The best studies exploit the advantages of panel data, that is, data on several observations over several periods of time, to estimate the impact of an intervention. This type of approach has the advantage of testing directly for an aggregate impact at the level at which the policy is targeted. A common criticism of this type of study is that the likelihood of a policy being enacted in a particular area may be directly related to the outcome variable of interest.

For example, it is reasonable to expect that interventions to reduce teenage pregnancy rates will be introduced more intensively in areas with high (or increasing) teenage pregnancies. If these areas are also ones in which it is particularly difficult to reduce teenage pregnancy rates, then it would be unreasonable to infer a causative impact from a positive association between the intervention and pregnancy rates.

A recent refinement to population-level studies that attempts to get around this problem is the use of matching estimators. These try to ensure that areas affected by an intervention are compared only with otherwise similar areas that are unaffected by the intervention.

Mathematical modelling can be used to measure the impact of behavioural changes over time. For example, some recent work combined survey data on sexual activity among young people with estimates of contraceptive failure, to identify the extent to which falls in teenage pregnancy rates in the US could be attributed to abstinence or contraceptive use. However, these studies tend to be very sensitive to the assumptions made.

For example, Santelli et al (2007) concluded that about 77% of the decrease in pregnancy rates among 15–17 year olds between 1995 and 2002 should be attributed to improved contraceptive use and just 23% to greater abstinence. Using the same data but slightly different assumptions, Mann and Stine (2007) suggested that both contraceptive use and abstinence made equal contributions, while Mohn et al (2003) attributed two-thirds of the decrease to lower sexual activity.

In any case, these studies examine the direct mechanism by which pregnancy rates go down. They are not able to provide evidence on the impact of a policy intervention on, for example, family planning access.

Much – although by no means all – of the evidence comes from the US. Although such evidence can provide valuable insights for the UK, cultural and societal differences between the two countries may mean research findings from one cannot automatically be applied to the other.

ACCESS TO FAMILY PLANNING

Improving access to family planning services, particularly those aimed at young people, has been a high priority from the start of the teenage pregnancy strategy. Despite this, the evidence on the impact of such measures on teenage conception rates is not especially encouraging.

Wilkinson et al (2006) found that local authorities that had been allocated more money have experienced larger reductions in under-18 conception rates, at least in the early years. However, further analysis showed that the areas with higher quality contraceptive services and with better access to services experienced lower reductions in conception rates than other areas. Although this association is not necessarily causal, the finding is in line with a range of population level studies and RCTs from the US and the UK (Paton, 2006; 2002; DiCenso et al, 2002). These found little evidence that access to family planning reduces teenage pregnancy rates, particularly among younger age groups.

There is some evidence that access to family planning services may be associated with fewer teenage births once conception has occurred (Kearney and Levine, 2009; Wolfe et al, 2001) but more abortions (Wilkinson et al, 2006). These findings are consistent with the increase in the proportion of teenage pregnancies ending in abortion in England since the start of the strategy.

The evidence is perhaps strongest on the impact of increased access to emergency contraception. An exhaustive review of RCT evidence concluded that “to date, no study has shown that increased access to [emergency contraception] reduces unintended pregnancy or abortion rates on a population level” (Raymond et al, 2007). Population-level studies from the UK (for example, Girma and Paton, 2006) have also found that access to emergency contraception does not lead to reductions in teenage pregnancy rates.

That better access to family planning services does not seem to reduce teenage conception rates may seem counter-intuitive at first sight. However, there are a number of reasons why such interventions might be ineffective. One possibility is that increased access to services through, for example, schools, substitutes services already provided by GPs.

It may be that increasing access to family planning does reduce teenage pregnancy rates, but that the effect is too small for studies to pick up. This explanation seems unconvincing in the case of emergency contraception, given the range of data that has failed to find any positive impact. A