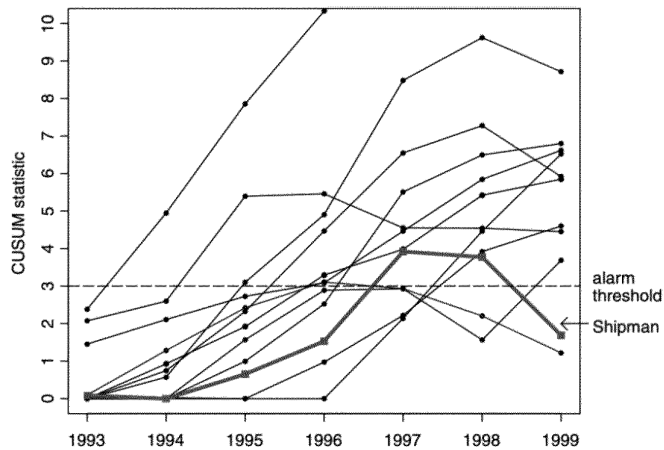


Figure 3. CUSUM charts for the 12 GPs (out of 1009 monitored) who signalled (i.e. whose chart statistic crossed the alarm threshold of 3) between 1993 and 1999: Shipman's chart is shown in bold red



37. In this graph, the signals being measured are deaths in an elderly population. A threshold needs to be set to indicate the accepted rate of death in this population (dashed line). 1 009 GPs mortality rates were monitored using the safety signal methodology. 12 GPs signalled in the period between 1993 and 1999. This meant that they crossed the signal threshold. The findings of the assessment were that 11 of the 12 GPs worked in areas with higher than average care homes for the elderly, so the increased death rate could be explained. One of these 12 was Dr Shipman and the assessment could not find an explanation for this signal, so this became a true concern. The fact that the signal happened would not have by itself told anyone that Dr Shipman was a murderer, but the assessment would have identified Dr Shipman was an outlier. Based on this analysis this signal would have alerted us to Dr Shipman's mortality rates around 18 months before concerns were actually raised.

Choosing the measures to be monitored

38. A safety signal system measures critical outcomes or metrics. Typically, these are rare events and only a small number of measures are required. In order to determine what outcome measures to include we established the following 4 criteria against which all of the possible outcomes were tested:

- a. There should be a high potential of causation from care and service delivery issues (Duty of candour, avoidable harm, sub optimal care)
- b. There should be a low index of causation from known clinical conditions