Epidemiology is the discipline which studies diseases and disease determinants in the community. In recent years, epidemiological studies gave a significant contribution to the understanding of the occurrence, risk factors, prevention and treatment of several chronic clinical conditions. Amyotrophic lateral sclerosis (ALS) is a severe neurodegenerative disorder with peculiar characteristics: it is rare, its aetiology is unknown, it cannot be prevented, and few if any measures are available for the treatment of the disease and its complications. Epidemiological studies conducted in small populations provided variable incidence rates for ALS. Differences across studies were mostly based on the use of different diagnostic criteria and variable methods of case ascertainment. More stable rates ranging from 1.8 to 2.2 per 100,000 have been recently obtained in Europe by using population registries as the source of cases in large geographic areas. In recent years, increasing incidence and mortality of ALS have been reported. Although a true increase of the disease occurrence has been postulated, the possibility of a better case ascertainment and the Gompertzian effect on mortality cannot be excluded. The consistency of the epidemiological findings has been greatly improved by the use of the El Escorial diagnostic criteria. However, the validity and reliability of these criteria are at best fair for epidemiological studies as they are significantly influenced by the training of the investigators.

Only few environmental risk factors for ALS have been detected, including trauma and exposure to metals. Conflicting evidence is also present on a possible protective role of NSAIDS similar to other neurodegenerative diseases. However, the information available on the risk factors is not robust, as it is mostly based on small and heterogeneous study populations and the use of different methods of investigation.

Epidemiological studies show that ALS is an age-dependent disease, with a peak in incidence in the late sixties and early seventies and a subsequent decline. A clear Mendelian inheritance is present in <5% of cases, but several susceptibility genes have been found; future epidemiological studies will assess the mutual interactions between major and minor genes in determining the ALS phenotype. The increasing incidence of ALS in females in recent years, which is associated with a reduction of the male to female ratio, may be due to a better case ascertainment among women or to some unknown environmental risk factors to which women may be exposed more than men.

Although the disease is still considered fatal within 3–5 years from onset in most cases, recent data from population-based registries seem to support the concept that palliative care and supportive treatment (e.g. enteral nutrition and mechanical ventilation) may have a significant impact on patients’ survival. In addition, a meta-analysis of randomised clinical trials on the use of riluzole in ALS confirmed a modest albeit significant impact of the drug on patients’ survival. However, the effects of treatments are frequently biased by the assessment of prevalent and selected population samples. Accurate epidemiological studies may provide useful information to optimize the design of future clinical trials.

Future epidemiological studies will shed some light on the aetiology, risk factors and care of ALS only if large population samples are recruited, valid and reliable diagnostic criteria are applied, standard methods of investigation are used, and randomised clinical trials and prognostic studies are performed in well-defined incident cohorts.
paper offers some reflections on how the quality of qualitative enquiry can be strengthened whilst still retaining its inherent capabilities and features. It will discuss various criteria that have been proposed for defining 'good practice' many of which were developed in the fields of medical or health services research.

The paper will then describe a framework for assessing qualitative studies recently developed in the UK. This identifies a series of appraisal questions that can be asked of qualitative studies, built on four core principles. These advise that the research should be: defensible in design by providing a research strategy that can address the research questions posed; rigorous in conduct through the systematic collection, analysis and interpretation of qualitative data; contributory in advancing knowledge and understanding within the field concerned; and credible in claim through offering well founded and plausible arguments about the significance of the evidence generated. Possible ways in which such features can be secured in qualitative enquiry will be examined.