

Evaluation of scientific evidence in law, adjudication and policy: when occupational health takes the witness chair

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KEY WORDS

Forensic medicine; occupational health; litigation

SUMMARY

Health and medical knowledge are essential to the resolution of disputes in law and administrative applications (such as workers' compensation) and provide essential input into public policy decisions. There are no socially agreed-upon rules for the application of this knowledge except in the law. On a practical level, the legal system lacks the capacity to evaluate the validity of knowledge as evidence and therefore relies heavily on expert opinion. Over the last 30 years, an approach called "critical appraisal" and "evidence-based medicine" addressed a similar problem in medical practice and established norms for the acceptance of evidence in clinical medicine. A similar evidence-based framework may be possible for applying knowledge of health and medicine to dispute resolution in the law. One critical issue is how to apply scientific evidence when the standard is "more likely than not" rather than scientific certainty. Another is how the generalizations drawn from epidemiology and population-based sciences are interpreted and individualized, as they must be, for the case at hand. A related issue is how risk is interpreted for an individual after the fact, when conventional probability treats risk before the fact and conventional biostatistics applies primarily to a population. This emerging approach is called "evidence-based medical dispute resolution".