jkljlkjlk In this article, we scrutinize the ability of the Precautionary Principle to serve as a unifying principle for public health. Although most commonly invoked in environmental health regulatory debates, implicit and explicit invocations of the Principle have spread to other contexts. Here we seek to understand the potential uses of the Precautionary Principle for those concerned with population health by considering its invocation in five cases: vaccination, quarantine for SARS, needle exchange to prevent the spread of HIV/AIDS, e-cigarettes as an alternative to tobacco cigarettes, and climate change mitigation. We ask whether the Precautionary Principle offers a philosophical approach precise and sufficiently stringent to guide health policy in a range of circumstances where evidence may be less than definitive and the course of action contested. We find there are far more ambiguities in the Principle's application than might appear at first and conclude that the it is best used in concert with other frameworks for guiding action in the face of uncertainty.