

Bibliometric Perspectives on Medical Innovation using the Medical Subject Headings (MeSH) of PubMed

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Multiple perspectives on the nonlinear processes of medical innovations can be distinguished and combined using the Medical Subject Headings (MeSH) of the Medline database. Focusing on three main branches—"diseases," "drugs and chemicals," and "techniques and equipment"—we use base maps and overlay techniques to investigate the translations and interactions and thus to gain a bibliometric perspective on the dynamics of medical innovations. To this end, we first analyze the Medline database, the MeSH index tree, and the various options for a static mapping from different perspectives and at different levels of aggregation. Following a specific innovation (RNA interference) over time, the notion of a trajectory which leaves a signature in the database is elaborated. Can the detailed index terms describing the dynamics of research be used to predict the diffusion dynamics of research results? Possibilities are specified for further integration between the Medline database, on the one hand, and the Science Citation Index and Scopus (containing citation information), on the other.