Indicators based on the definition of preventable drug related morbidity (PDRM) are often called Preventable Drug-Related Morbidity indicators or Medication System Performance Indicators.\(^a\) PDRM indicators are useful, \textit{inter alia}, for estimating the incidence of PDRM and assessing the performance (safety and effectiveness) of medications use in populations, for identifying recurring points of system failure, for directing and monitoring systems corrections (e.g., medications therapy management), and for identifying patients at risk for PDRM.

The following bibliography lists publications describing the development, testing and application of PDRM indicators in the US, Canada, the UK, Portugal, Spain and Italy. The original development by MacKinnon and Hepler used manual search methods. The published reports and dissertations include valuable data on validation. Faris coded the indicators for computer searching and subsequent applications used computerized searches of clinical or claims data. Sauer refined and replicated the work of Faris and MacKinnon and demonstrated the application to quality improvement. Most of the European work was stimulated by the work of Cantrill and Morris in the UK. The paper by Avery, et al illustrates the use of PDRM indicators in effectiveness research.

**RESEARCH ARTICLES**


\(^a\)A Drug Related Morbidity (DRM) is an unintended adverse patient outcome with a scientifically plausible relationship to either drug therapy or an untreated indication for drug therapy. DRM include significant adverse or toxic effects of drugs, treatment failures, and occasions when a valid indication was not treated. (A DRM includes Adverse Drug Events as defined by Bates et al but also includes treatment failure and non-treatment.)

A DRM is defined as preventable (a PDRM) if it meets the following criteria (Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. \textit{Am J Hosp Pharm} 1990;47:533-43):

1. The DRM followed a Drug Therapy Problem (DTP) – that is, a recognizable, significant premonitory event or process of care – a sign that therapy is not proceeding correctly
2. the DRM was reasonably foreseeable, given the occurrence of the DTP;
3. a cause of the DTP and DRM could have been recognized; and
4. the cause could have been controlled without foregoing or seriously compromising the therapeutic objective.

The original definitions of DRM and PDRM are found in Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. \textit{Am J Hosp Pharm} 1990;47:533-43.


**DISSERTATIONS**


**BOOK**