**Implementing CYP2C19-guided clopidogrel therapy: a scoping review of pharmacogenomic testing services**

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**Introduction.** CYP2C19 testing helps personalise clopidogrel therapy and reduces the risk of a secondary myocardial infarction in poor metabolisers. However, a lack of understanding on how to best deliver such a service within hospital and community settings has been a major barrier to clinical implementation.

**Aim.** To identify and evaluate pharmacogenomic testing services to inform the design and delivery of CYP2C19 testing services in relation to clopidogrel therapy.

**Methods.** The SCOPUS, CINAHL, Medline, PubMed and EMBASE databases were searched from inception to 25th March 2024. The search strategy utilised “pharmacogenomic”, “community”, “hospital”, and “implementation model” terminology. Studies describing the implementation of a pharmacogenomic testing service for CYP2C19 and clopidogrel as the sole gene-drug pair or part of a wider panel of genes were included.

**Results.** Of the 2,455 articles screened, 37 were eligible for study inclusion (14 community, 22 hospital and 1 in both settings). A multi-disciplinary approach to service implementation was critical in all studies, with particular importance of pharmacist involvement alongside physicians, laboratory staff and nurses. Additionally, pre-implementation education and training for clinical staff was essential in most studies (22/37, 59%). This was delivered through a variety of methods including in-person training on point-of-care devices, online seminars and webinars, and educational resources linked within the electronic health records for clinicians to access. Although CYP2C19 test results were most commonly documented and reported electronically by the laboratory, they were infrequently integrated within clinical decision support systems to guide decision making at the point of prescribing.

**Discussion.** Pre-implementation training and education, a multidisciplinary team involving pharmacists, and electronic documentation and notification of results are common elements of CYP2C19 testing services for guiding clopidogrel therapy. The ability to access genotype results across various healthcare disciplines, and improved integration of genotype results within clinical decision support systems has the potential to further the practical application of CYP2C19 testing.