

Abstract – 250 words

Introduction:

Musculoskeletal (MSK) conditions account for one in seven general practice consultations. Despite guidelines, care remains inconsistent. Clinical decision support systems (CDSSs) offer potential to improve care quality and efficiency.

Aim:

We evaluated real-world impacts of CrossCover's Orthopathway CDSS, which integrated eight locally agreed MSK pathways into practice electronic-health-records (EHRs).

Methods:

A pragmatic, two-arm, parallel-group, cluster RCT with embedded qualitative evaluation in 19 GP practices (West Midlands, UK). Practices were randomised 1:1 stratified by list size. The primary outcome compared clinician adherence to 12 evidence-based quality indicators using EHR-data, via a blinded audit random sample of 120 patients. Secondary outcomes compared MSK treatment decision-making, clinician engagement, perceived safety, environmental and economic impacts, and clinician experiences (semi-structured interviews).

Results:

10,182 patients were identified (4,268 intervention; 5,914 control), with CDSS used in 365 consultations. Guideline-adherent care was significantly higher in the intervention arm (86.7% vs. 75%, $p=0.049$). CDSS use was associated with increased self-management provision and community referrals, and fewer prescriptions and fit notes. Engagement was low (8.6%), with greater use by First Contact Practitioners. Safety logs revealed no high-risk issues (6.6% of uses). Carbon and cost modelling suggested 18% lower emissions and 10% annual savings (of £1.6m) if scaled locally. Clinicians ($n=18$) were positive about the CDSS's benefits for improving MSK care quality although further refinements and integration are needed.

Discussion: The absence of patient health outcome comparisons was a key trial limitation.

Conclusion: Initial real-world testing suggests the CrossCover CDSS improves MSK primary care quality, reduces CO₂e emissions and is cost-saving.