Health Economic Evaluation of an Artificial Intelligence (AI) assisted Breast Cancer Multi-Disciplinary Team (MDT): Preliminary results from a UK Single Centre Simulation Trial

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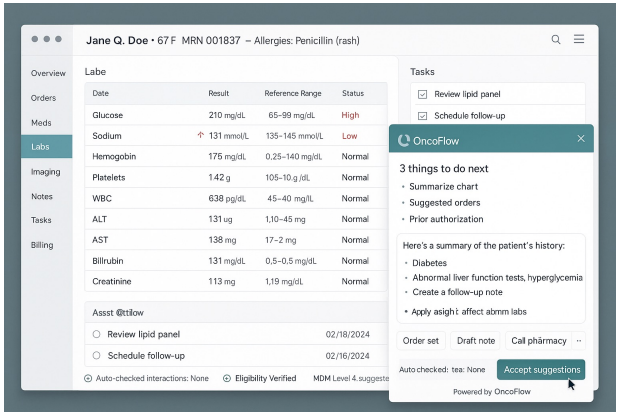
Background

Cancer Multi-Disciplinary Team Meetings (MDTMs) in the UK operate at an industrial scale across the National Health Service England (NHSE), with an estimated annual cost of approximately £154.3 million. Each patient may be discussed up to an average of four times, with a base cost of £428 per patient, increasing to £485 when accounting for opportunity costs. While MDTMs aim to improve outcomes, the substantial financial burden raises questions about efficiency and value. The Oncoflow™ AI powered Cancer MDTM CoPilot platform is a class 1 UKCA MHRA registered medical device (RN 32434) that uses proprietary Large Language Model (LLM) based Data Extraction and Treatment Matching. A simulation trial of this intervention vs standard manual practice was conducted to inform a cost-benefit and effectiveness analysis.

Method

The Simulation study involved 2 prospective Breast Cancer MDTMs with 10 cases each, matched to similar disease stage (early or metastatic) and complexity (simple/edge/complex). Phase 1 was standard practice and Phase 2 was the OncoFlow intervention. Manual preparation for this 10 case set involved 120 minutes or 1.5 hours of time from 10 IOW MDT members as aforementioned, with role-specific hourly rates applied. OncoFlow was assumed to eliminate labour input, incurring only an annual licence fee of £25,000. A cost-analysis model compared the resource use and associated costs of standard versus OncoFlow AI assisted breast cancer MDTM preparation.

Results



Manual preparation cost: £378 per 10 breast cancer cases (1.5 hours total), or £37.80 per case.

Breakdown of manual costs: £262.50 for 7 consultants (£25/hour) and £115.50 for 3 other MDT staff (radiographer £25, MDTM coordinator £22, CNS £30).

OncoFlow cost per case: £16.03 for 1,560 cases/year and £12.02 for 2,080 cases/year, based solely on the annual license fee.

Per-case savings: £21.77-£25.78 when compared to manual preparation.

Conclusion

Annual savings: £33,961.20 to £53,622.40 for 52 weekly MDTMs.

Reduces operational burden of MDTM preparation.

Incremental Cost Effectiveness Ratio (ICER) of £1.91 per clinician hour saved

Broader implementation across tumour types and MDTMs could amplify these cost benefits, contributing to more sustainable, efficient NICE (National Institute for Health and Care Excellence) commissioned cancer care delivery across the NHS.

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