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Economic value of companion diagnostic-personalized medicine relationships and the contribution of metabolomics-guided biomarker discovery

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The development and commercialization of personalized medicines requires a whole new appreciation of the economic value of the relationship between pharmaceutical companies and medical diagnostic companies. This economic valuation also impacts on other healthcare stakeholders as it influences pricing, payment and evaluation of technologies for both clinical- and cost-effectiveness. It also impacts on the suppliers of new medicines (biotech) and diagnostic biomarkers (technology companies) as it creates a value not recognized in the cost-price axis.

Pharmaceutical companies are addressing declining productivity, increasing development costs, and attrition of blockbuster medicines through personalized medicines guided by companion diagnostics. The use of biomarkers to identify patients in clinical studies has been shown to both reduce the size and duration of clinical studies, with considerable development cost benefits. The transition of biomarkers to validated indicators of clinical outcome, in the form of approved companion diagnostics, can improve market uptake, market size and market share in such a way that blockbuster revenues are retained. In addition, there is also evidence that companion diagnostics can protect proprietary medicines from generics late in the product lifecycle. Economic quantitation of these benefits over a 20 year period, from drug development through to life cycle management, suggests a potential net present value (NPV) uplift of $1.8bn, from $900M to $2.7bn.

Metabolomics companies are a key driver of new biomarkers for companion diagnostics and personalized medicines and our presentation will address the potential value they are creating and how they might be best compensated for this.

Biography

Edward D. Blair founded Integrated Medicines Ltd (IML) in 2003 to enable personalized medicine by combining diagnostic-type testing with new and existing medicines. He is also a non-executive board director for several diagnostic technology companies and is a visiting scholar to the Cambridge University Masters in Bioscience Enterprise program. He also lectures on personalized medicines and offers occasional bespoke courses based on his best-selling books. He has published more than 40 primary, peer-reviewed papers, including a series on companion diagnostic valuation, and is editor of two personalized medicine journals. Finally, he is named inventor on at least one dozen patents, including tunable magnetic proteins, the technology being exploited by IMSL.

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