MedTech Innovations in Oncology: A Review of NICE MedTech Innovation Briefings from 2014–2022 Kumar J¹, Gupta P¹, Shaikh J¹, Wang R², Dubey A¹ ¹Axtria India Pvt. Ltd., India, ²Axtria Inc., USA

INTRODUCTION

- MedTech Innovation Briefings (MIBs) are early advice on new and innovative technologies published by the National Institute for Health and Care Excellence (NICE).¹
- MIBs provide an overview of clinical efficacy, safety, and cost with an intended purpose to generate impartial information to health-care providers to promote investment and adoption of innovative technologies.^{1,2}
- In the field of oncology MIBs promote cutting edge advancement that enable early-stage cancer diagnosis and recurrence monitoring, fostering innovation and improving patient outcomes.
- Understanding the developments in published briefings for oncology related technologies has implications for improving decision-making on appraisal of such technologies in future.

OBJECTIVE

• This study aims to comprehensively capture and characterize the oncology-related technologies published in MIBs since its inception and to evaluate trends and gaps in the published briefings.

METHODS

- Published MIBs were searched from Dec 2014 to Dec 2022 using the NICE electronic database.
- Following key terms "cancer," "oncology," "leukemia," "melanoma," "carcinoma," "sarcoma," "biopsy," and "tumor," were used to identify the innovative technologies in oncology.
- Key information including oncology indication, place in therapy, application, clinical evidence, adoption at NHS centres, regulatory class, and cost of the innovative technologies was extracted and analyzed using a pre-specified data extraction template.
- Further, MIBs which were converted to Medical Technology Guidance (MTGs) were also evaluated.

RESULTS

• A total of 258 MIBs were published from Dec 2014 till Dec 2022; of these 33 MIBs were associated with oncology (Figure 1).

REFERENCES:

- 1. NICE: MedTech Innovation Briefings: Frequently asked questions. In: National Institute for Health and Care Excellence (2015).
- 2. NICE: Medtech Innovation Briefings Interim Process and Methods Statement. In National Institute for Health and Care Excellence (2014).

RESULTS



- Breast cancer (27%), prostate cancer (18%), and lung cancer (15%) were the most common conditions in which innovative technologies were reported in MIBs (Figure 2).
- In terms of therapy, innovative technologies were intended to function either independently of, or in addition to, standard of care in 42% and 39% cases, respectively.



Figure 2. Oncology indications where technologies were reported in

Technologies were primarily employed for monitoring and diagnosis (94%) and treatment delivery (6%) purposes. (Figure 3).

DISCLOSURES:

JS, PG, JS, AD are employees of Axtria India Pvt. Ltd., India. RW is employee of Axtria Inc., NJ, USA This study was funded by Axtria Inc.





• In majority of the MIBs in oncology, key clinical evidence reported was based on observational studies (79%) along with diagnostic accuracy

• At the time of MIB publication, 48% of the technologies were adopted at NHS centers, whereas 52% were not established due to lack of funding and insufficient clinical evidence.

CONCLUSIONS

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INGENIOUS INSIGHTS



RESULTS

• MIBs report the CE mark class of the technologies, a mandate for any device to be marketed in Europe. The devices are classified based on level of risk posed to the patients. (Figure 5)

o In vitro diagnostic devices: Technologies in oncology mainly belong to class "general" which shows that they pose lowest risk and does not require the approval

• Medical devices: These mainly fall under "class IIA and IIB" necessitating thorough post-marketing surveillance plans by the company to capture safety and uncertainties associated with the device



Figure 5. Technologies based on their CE mark classification

• In terms of economic evaluation, cost of the technologies varied highly when compared to the standard of care. Furthermore, cost also varied greatly among different technologies depending upon their application. The reported cost included cost per patient, capital cost, maintenance cost and extra supplemental

• Two out of three MTGs in oncology were published from previous MIBs indicating that once sufficient evidence is available, an MIB can be transformed to MTG with specific recommendations.

• Recently, an increase in the number of published MIBs has been observed reflecting their growing role in decision making.

• MIBs plays a significant and increasing role in adoption of novel technologies in oncology by providing impartial early information.

• MIBs have identified that high cost and insufficient clinical evidence often prevent the adoption of oncology-related technologies.



