San Antonio Breast Cancer Symposium - December 7-10, 2021 **Enhancing Impact and Efficiency of Financial Support for Cancer Through Use of AI: A Nascent Initiative of Indian Cancer Society**

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BACKGROUND

- Since inception (2011), a novel mutual fund—Indian Cancer Society Cancer Cure Fund (ICS-CCF)—contributed \$23 million to cover treatment costs of 9800 underprivileged patients across 16 empanelled hospitals in India.
- A Due Diligence Team (DDT) of cancer experts reviewed every beneficiary application for compliance with standardized treatment guidelines, costs, and cure rates requisite per the ICS-CCF approval criteria (prior authorization process).
- DDT experts are scarce with limited time; therefore to scale the prior • Simultaneously, DDT reviews all beneficiary applications. authorization process, ICS-CCF studied the use of Artificial Intelligence (AI) based Navya AI. • Concordance is assessed between Navya AI and DDT approval application is measured.



Figure 1-16 CCF Empanelled Hospitals

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METHOD

- Mahamana Pandit Madan Mohan Malviya Cancer Centre (MPMMMCC)

- Navya Al—a clinically validated Al system—matches clinical data of beneficiary applicants (Navya Al Input) with evidence and expert Output).
- Navya AI approves an application when the Navya AI output matches the planned treatment.
- Navya Al refers to DDT when there is no Navya Al Output due to matching evidence or experiential data in the system.

Figure 2 - How Navya Works







recommendations, adapted to the ICS-CCF approval criteria (Navya AI

insufficient clinical information (inadequate Navya Al Input) or lack of

decisions; also, DDT time to review a Navya AI approved and deferred





- was 99.43% (1571/1580).
- 3.4 minutes/application.
- with cancer experts.
- experts' time.
- based on AI decisions.

RESULTS

• From April 22, 2020 to June 9, 2021, 1992 beneficiary applications were simultaneously reviewed by AI and DDT, of which 601 (30%) were breast cancer patients.

• Of these, 20.68% (412/1992) were referred to DDT by Navya AI; and remainder (79.31%, 1580/1992) were either approved or rejected by Navya AI (1564 approved, 16 rejected).

Concordance between Navya AI and DDT approval decisions

DDT time taken on applications that Navya AI refers to DDT is

In an analysis of 59 weekly reviews, Navya AI approved or rejected 9 applications/week, potentially saving 30.6 minutes/week of experts' time (3.4 minutes of expert review time per deferred application as proxy for 9 applications that can be reviewed by Navya AI alone).

• A clinically validated AI system can assess the majority of beneficiary applications with approved or rejected decisions, 99% concordant

• Al based prior authorization process promises a five-fold saving in

Subsequently, ICS-CCF is awarding financial support directly

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