

# Enhancing Impact and Efficiency of Financial Support for Cancer Through Use of AI: A Nascent Initiative of Indian Cancer Society

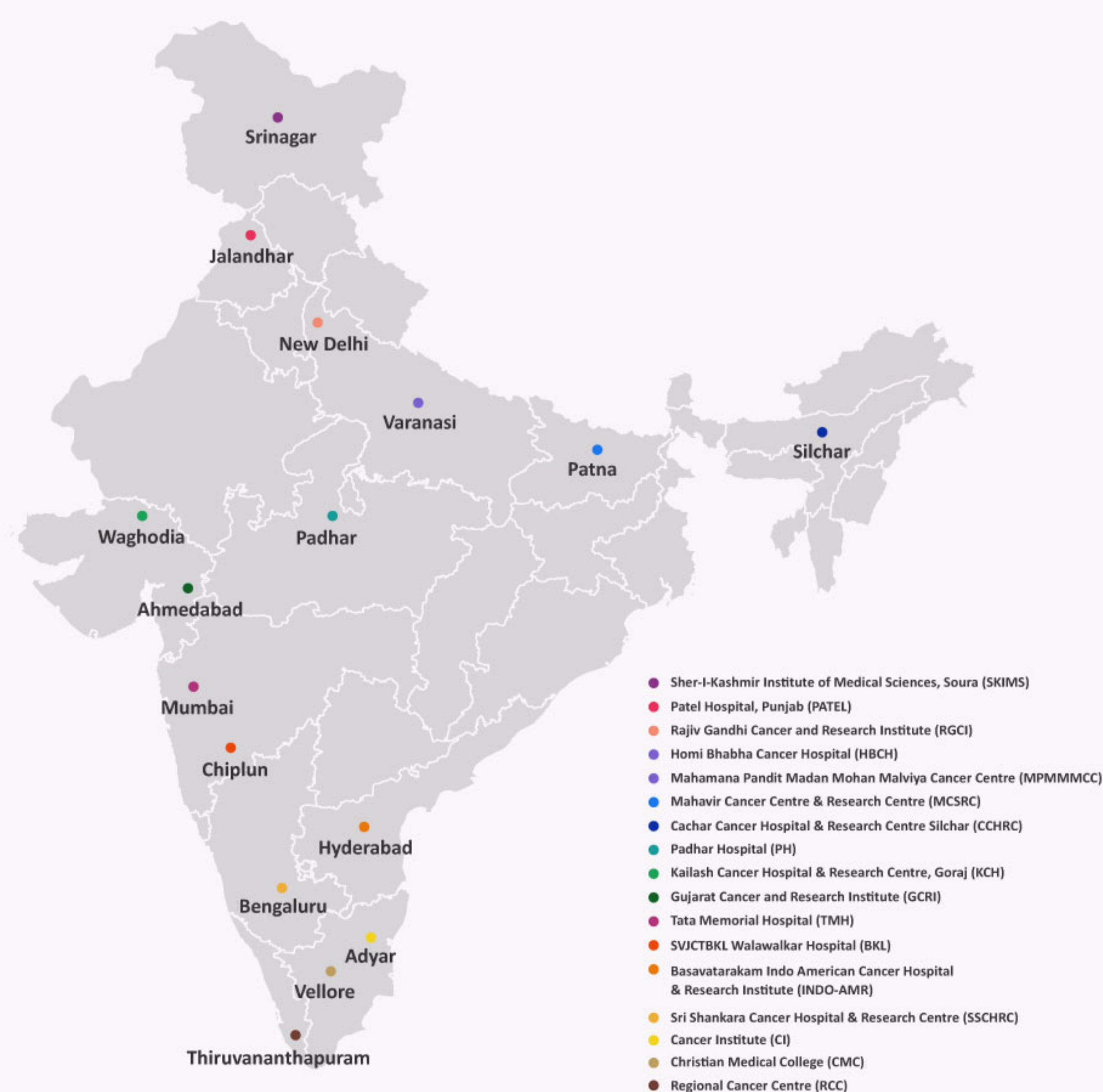
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## BACKGROUND

- 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 authorization process, ICS-CCF studied the use of Artificial Intelligence (AI) based Navya AI.

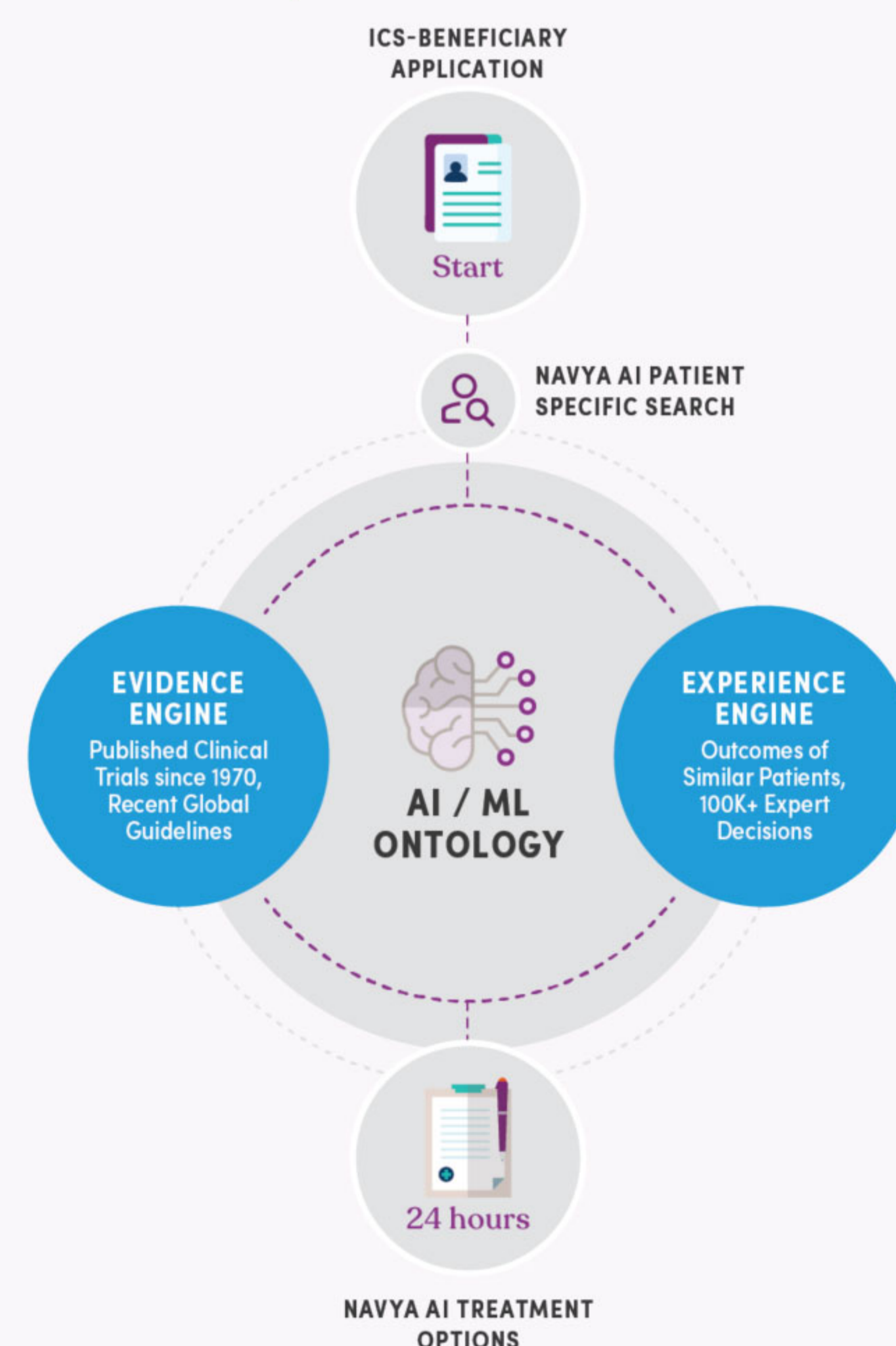
Figure 1-16 CCF Empanelled Hospitals



## METHOD

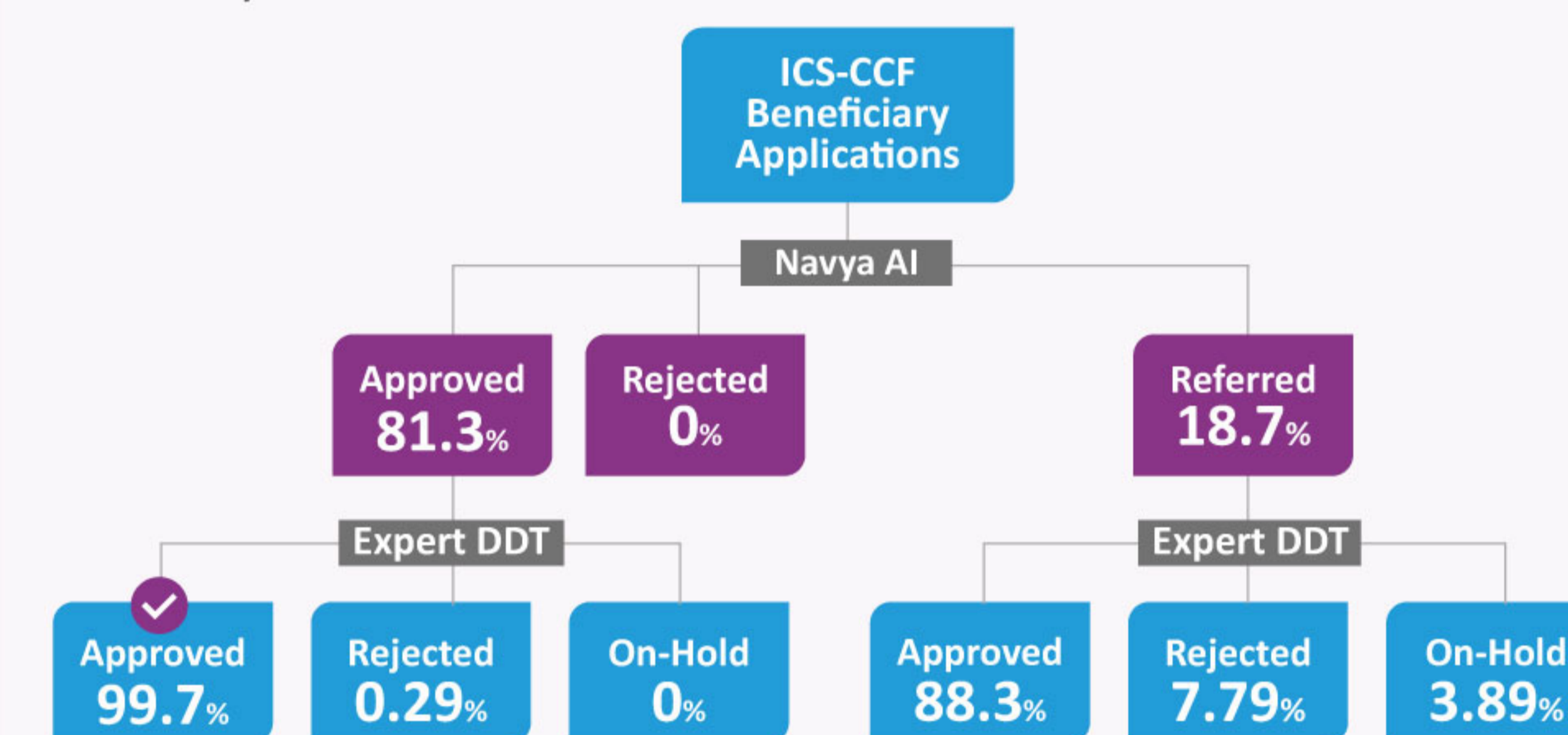
- Navya AI—a clinically validated AI system—matches clinical data of beneficiary applicants (Navya AI Input) with evidence and expert recommendations, adapted to the ICS-CCF approval criteria (Navya AI Output).
- Navya AI approves an application when the Navya AI output matches the planned treatment.
- Navya AI refers to DDT when there is no Navya AI Output due to insufficient clinical information (inadequate Navya AI Input) or lack of matching evidence or experiential data in the system.
- Simultaneously, DDT reviews all beneficiary applications.
- Concordance is assessed between Navya AI and DDT approval decisions; also, DDT time to review a Navya AI approved and deferred application is measured.

Figure 2 - How Navya Works



## RESULTS

- From April 22, 2020 to February 3, 2021, 411 applications of pediatric patients were simultaneously reviewed by Navya AI and DDT.



Prior Authorization Process: Navya AI concordant with DDT Expert Review

- Of these, 18.7% (77/411) were referred to DDT by Navya AI; and remainder (81.3%, 334/411) were either approved or rejected by Navya AI (334 approved, 0 rejected).
- Concordance between Navya AI and DDT approval decisions was 99.7% (333/334).
- DDT time taken on applications that Navya AI refers to DDT is 3.6 minutes/application.
- In an analysis of 40 weekly reviews, Navya AI approved or rejected 8 applications/week, potentially saving 28.8 minutes/week of experts' time (3.6 minutes of expert review time per deferred application as proxy for 8 applications that can be reviewed by Navya AI alone).

## CONCLUSION

- A clinically validated AI system can assess the majority of beneficiary applications with approved or rejected decisions, 99% concordant with cancer experts.
- AI based prior authorization process promises a five-fold saving in experts' time.
- Subsequently, ICS-CCF is awarding financial support directly based on AI decisions.