Artificial Intelligence (AI) and its role in the authorisation process for philanthropic funding: Experience of Indian Cancer Society Cancer Cure Fund (ICS-CCF)

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N. Khanna 1, T. Vora 2, S. Patkar 1, M. Bhandare 1, G. Shrivastava 3, N. Ramarajan 3, F. Begum 3, V. Bamne 4, R. Pagare 4, S. Chawhan 4, K. Swami 5, R. Thippeswamy 6, V. Dhamankar 4, A. Rawat 4, A. Gokarn 1, U. Thorat 4

1- Tata Memorial Hospital, Homi Bhabha National University, Mumbai, India
2- Princess Margaret Cancer Centre, Medical Oncology, Toronto, Canada
3- Navya Network, Cambridge, United States,
4- Indian Cancer Society, Mumbai, India
5- Aster CMI Hospital, Bengaluru, India
6- HCGHospital, Bengaluru, India

Presented by Dr. Nehal Khanna, TMH, Mumbai

Cancer Burden and Indian Cancer Society

New cases 1.3 million; 6 lac mortality in India

Oncological treatment; financial impact

Inception in 1951

2011– HDFC Mutual Fund scheme to create a sustainable fund

Patients benefitted – 13000 plus

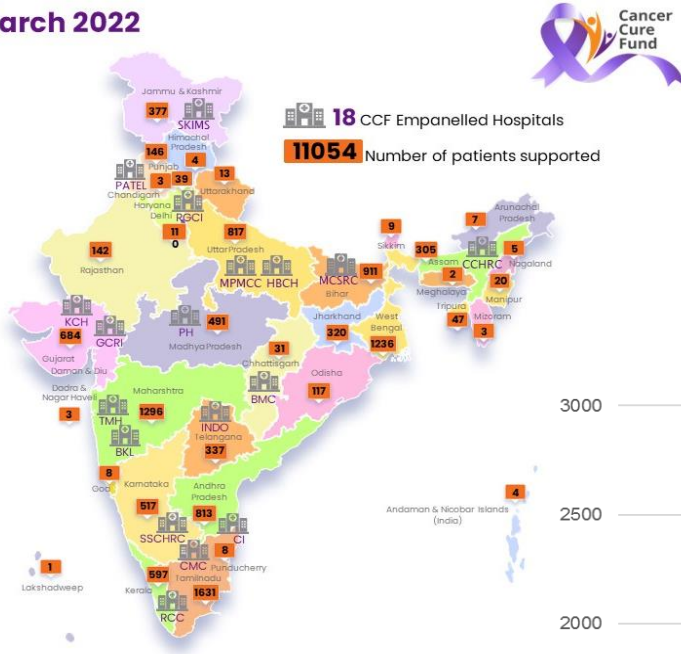Funds disbursed – 226 crore till March 2023

3rd INDIAN CANCER CONGRESS 2023
2nd - 5th November 2023, Mumbai

navya

टी एम सी TMC — ATOMS IN THE SERVICE OF THE NATION

NATIONAL CANCER GRID
COLLABORATION FOR CANCER CARE

Decade of Saving Lives | Cancer Cure Fund

INDIAN CANCER SOCIETY
RISE AGAINST CANCER

March 2022

Cancer Cure Fund

18 CCF Empanelled Hospitals
11054 Number of patients supported

Empaneled hospitals

ICS
CCF
Team

Due Diligence Team **DDT**

Governing Advisory Council **GAC**

Disbursal
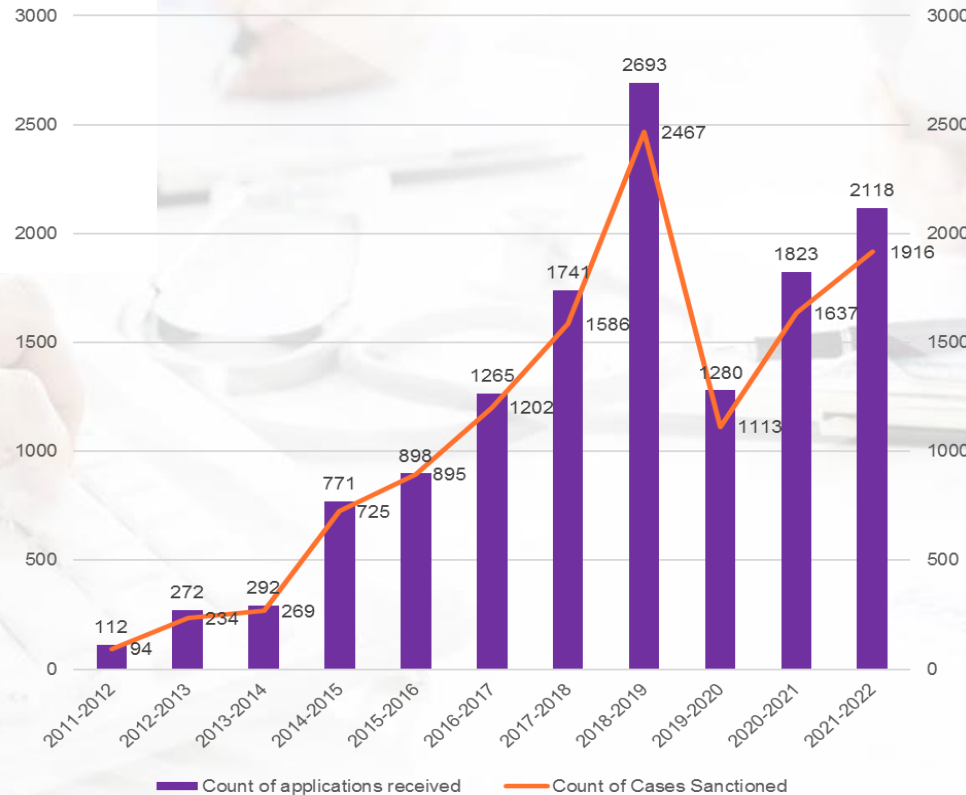
5 hrs of clinicians time per week

Year	Count of applications received	Count of Cases Sanctioned
2011-2012	112	94
2012-2013	272	234
2013-2014	292	269
2014-2015	771	725
2015-2016	898	895
2016-2017	1265	1202
2017-2018	1741	1586
2018-2019	2693	2467
2019-2020	1280	1113
2020-2021	1823	1637
2021-2022	2118	1916

Count of applications received ▬ Count of Cases Sanctioned

Background

- Prior authorization process requires the Due Diligence Team (DDT) and the Governing Advisory Council (GAC) of ICS-CCF to review every beneficiary application for compliance with standardized treatment guidelines, expected cure rates and applied costs.

- To augment and scale up this process, ICS-CCF evaluated the use of Artificial Intelligence (AI) in reviewing the applications for recommendation.

ICS
CCF
Team

Clear cases directly referred to **GAC**

Complicated cases referred to **DDT**
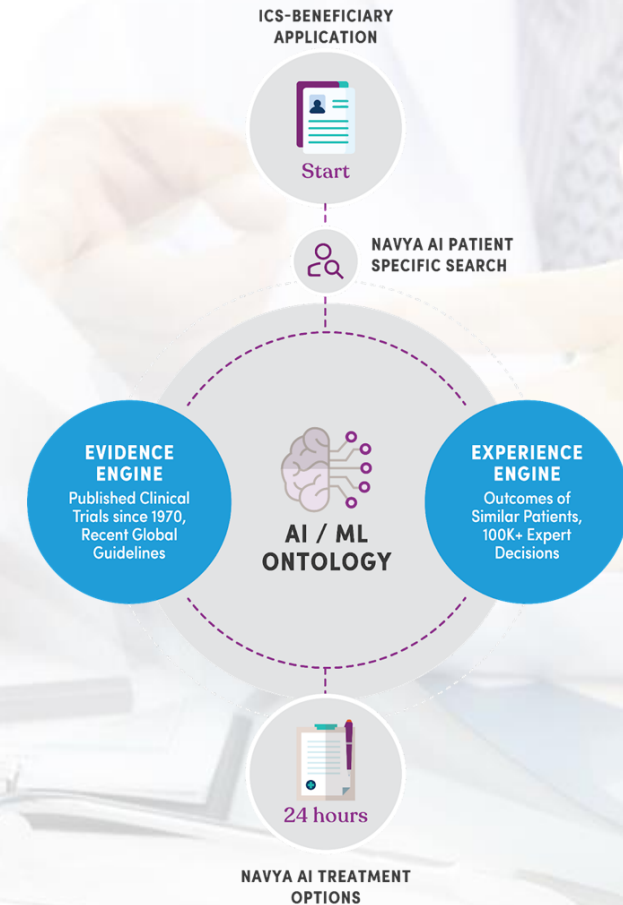
Navya has processed more than 1 Lakh patients with cancer

ICS-BENEFICIARY APPLICATION
Start

NAVYA AI PATIENT SPECIFIC SEARCH

EVIDENCE ENGINE
Published Clinical Trials since 1970, Recent Global Guidelines

AI / ML ONTOLOGY

EXPERIENCE ENGINE
Outcomes of Similar Patients, 100K+ Expert Decisions

24 hours

NAVYA AI TREATMENT OPTIONS

Methods

Empanel Hospitals

↓

Indian Cancer Society & Cancer Care Fund Team

↓

navya

Clear Cases to GAC | **Complicated Cases Deferred to DDT**

General Advisory Counsel (GAC) | **Due Diligence Team (DDT)**

- NavyaAI platform matches the clinical data of beneficiary applicants (Input) with available clinical evidence and expert recommendations/ guidelines, adapted to the ICS-CCF approval criteria (Output).

- The applications where the input and output match, are "recommended" and directly sent for GAC approval.

- Rest of the cases are referred to DDT, consisting of a minimum of 2 expert oncologists per meeting, who review them and forward to GAC accordingly.

Results

- **Beneficiary reviewed by Navya : 6333**

Application Passed via Navya AI	Percentage
Recommended	78.76% (4988/6333)
Rejected	1.04% (66/6334)
Referred to DDT	20.21% (1280/6333)

Referred to DDT
20.2%

Rejected
1.0%

Recommended
78.8%
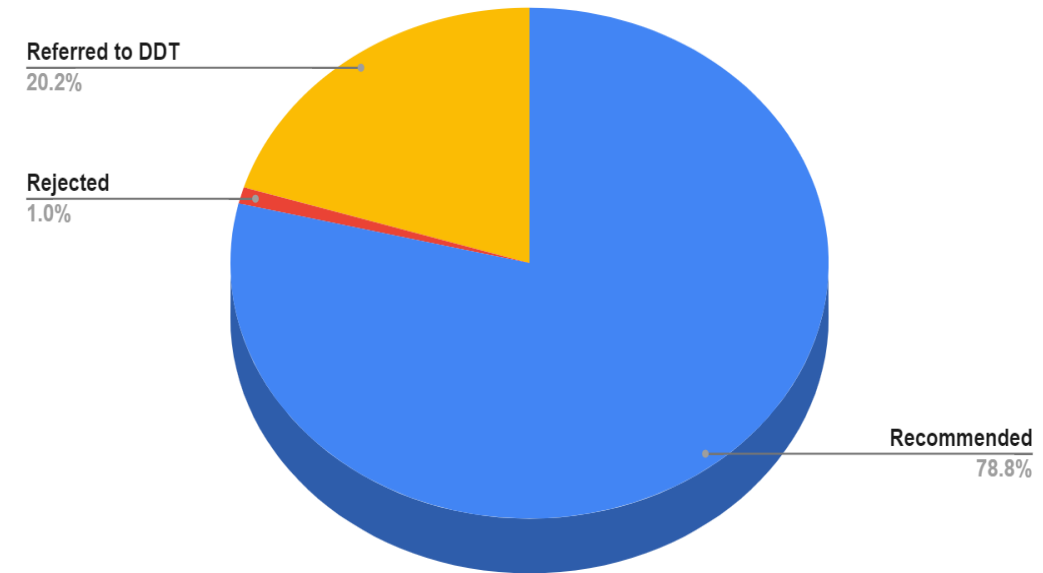
Applications passed through NavyaAI

Results

Concordance with Navya & GAC	Percentage
Concordance for Approvals	99.56% (4966/4988)
Concordance for Rejections	93.94% (62/66)
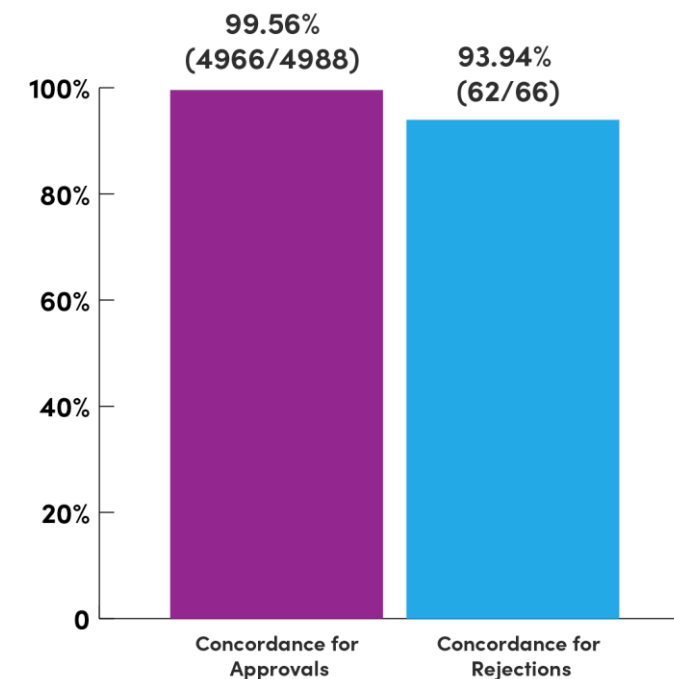
Concordance with Navya & GAC

- DDT spends an average of **3 minutes** on each application referred by Navya.
- On average, Navya forwards **33** applications to GAC directly → saving a minimum of **198** minutes/week of the oncologist's time.

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AI can review and assess the majority (~80%) of applications

- Only 1/5 of applications are referred to DDT for their input

- Now DDT reviews only 37 cases (9 cases in a week)

- Evaluation time of experts reduced from **2.5 hours → 30mins** per week

- Validated treatment protocol ⭐

- Adherence to National Cancer Grid guidelines ⭐

- Verifying the cost of treatment/ capping of cost ⭐

- Streamlining of processes ⭐

- Online meetings ⭐

21% cases still require a clinician's expertise
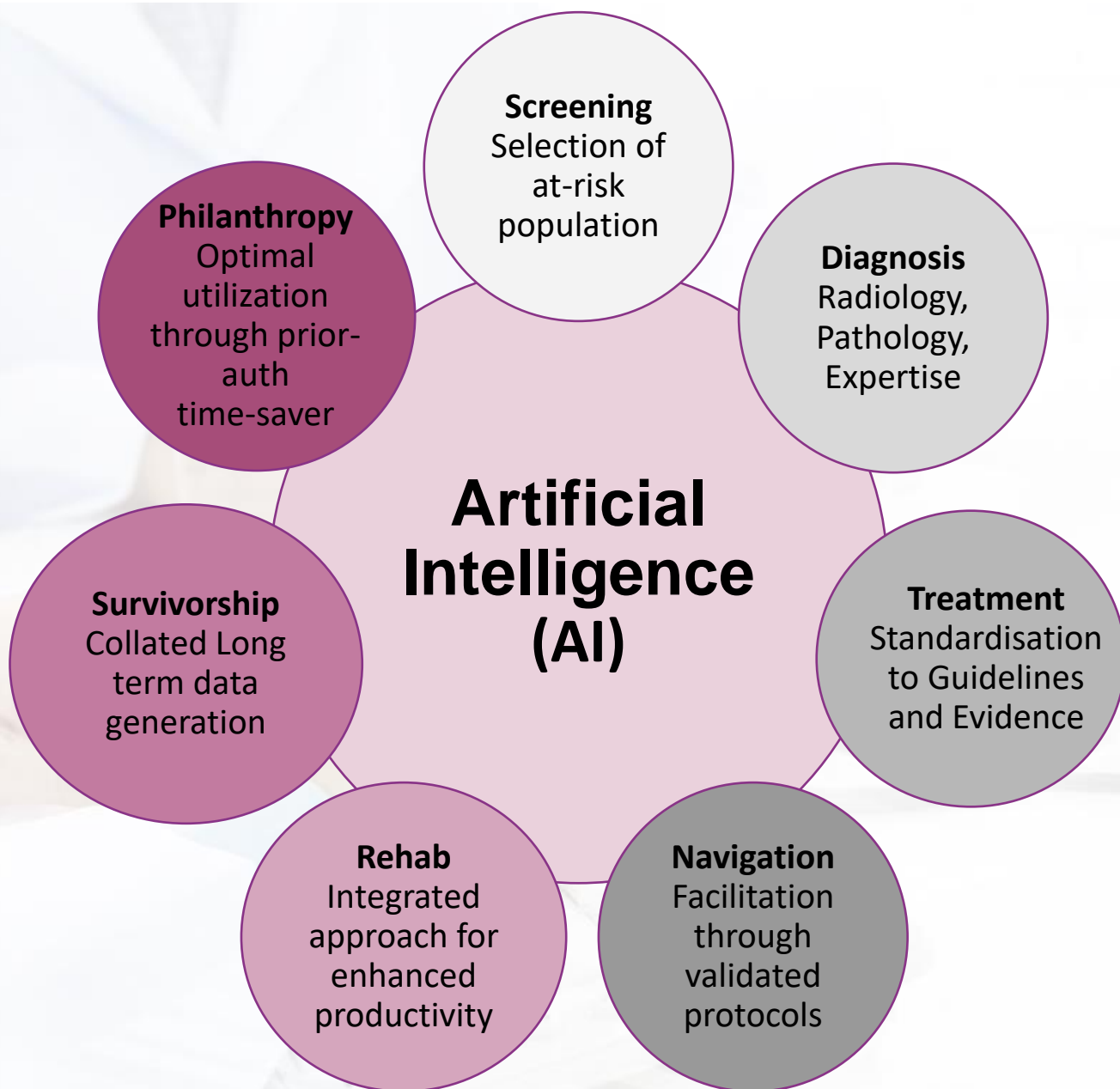
Patients: Save costs & time, reduce unnecessary movement, improve outcomes.

Payers: Reduce unnecessary expenditure, faster claims processing.

Providers: Save experts' time, standardize care, improve patient outcomes.

AI and health care

- Improving quality and efficacy of authorization process

- Speedier processing of applications hence scaling up possible

- Standardized screening of applications

How will this help our country?

- Extrapolate this model on Government and NGOs in health care space

- Philanthropic disbursements

- Health insurance schemes

Thank you!!