



# 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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**3<sup>rd</sup> INDIAN CANCER CONGRESS 2023**  
2<sup>nd</sup> - 5<sup>th</sup> November 2023, 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

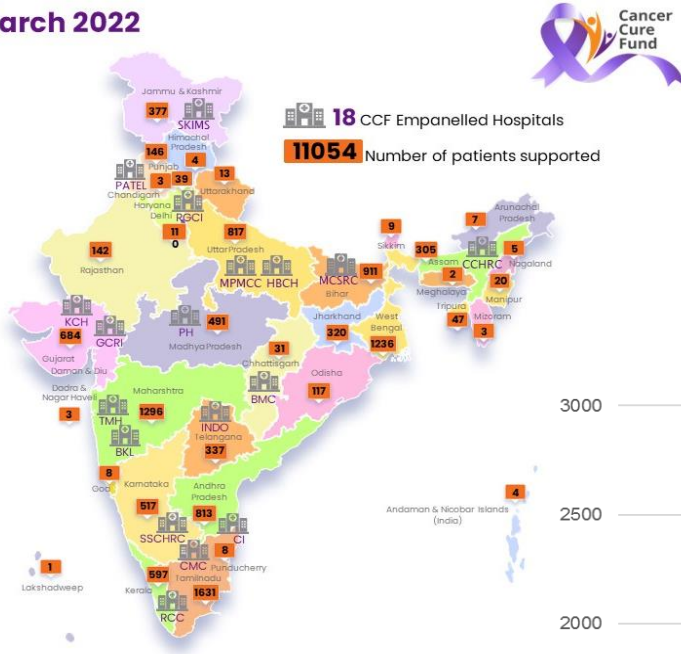


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March 2022



ICS  
CCF  
Team



Due  
Diligence  
Team  
**DDT**

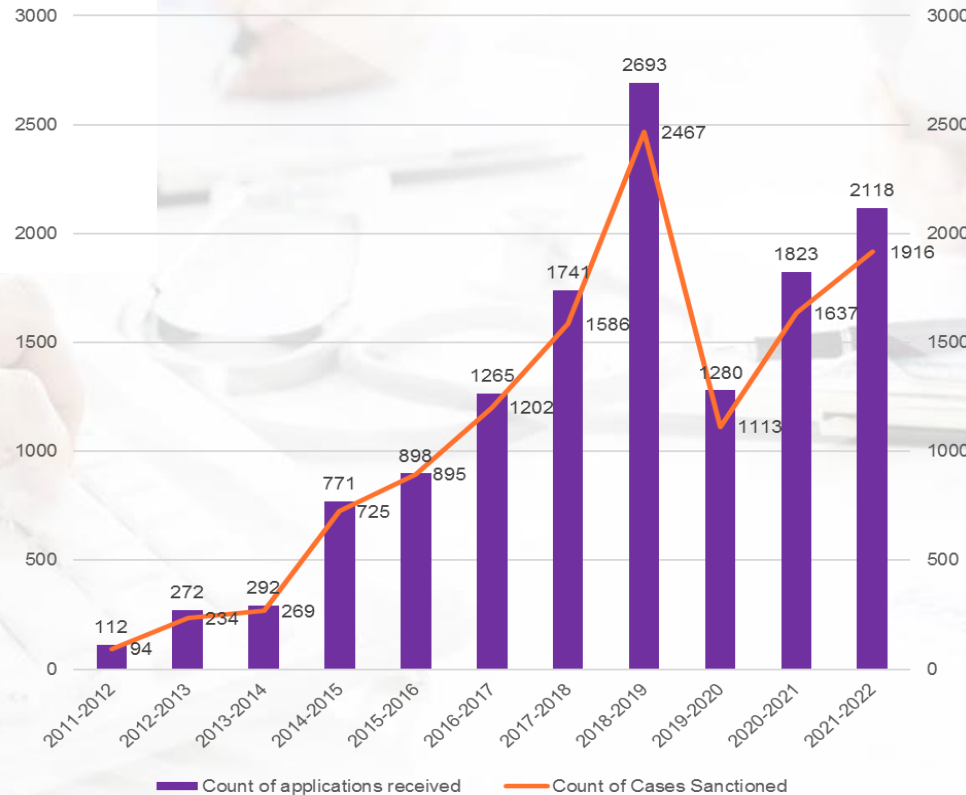


Governing  
Advisory  
Council **GAC**



**Disbursal**

Empaneled hospitals



5 hrs of clinicians  
time per week



# 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.



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**ICS  
CCF  
Team**



AGENDA FOR 227<sup>th</sup> GAC MEETING AS ON 22/07/2022

Form No & Hospital Name	Sex & Age	State & City	Diagnosis & Survival Rate	Regis. Date	Insert Date	Family Income (in Rs.)	Amount Applied (in Rs.)	Amount Approved By GCF (in Rs.)	Navya Comment
215453 TMH	Female 18 years	Maharashtra Kolhapur	Chronic Myeloid Leukemia 90%	30/03/2022	10/06/2022	45,000	2,50,000	15,000	10yrs F diagnosed with standard risk CML in 30th Mar 2022. Seeking for 2,50,000 for CT1 (50,000) and supportive care investigations (1,00,000) for 5 years. Non-adherence to ICS-GCF checklist, please provide the disease Phase of the patient whether in Chronic phase/accelerated phase/blast crisis. Please provide the BCR ABL1 status report. Also, please provide the TKI drug name and time period seeking funds for. Has the patient started on TKI? If yes, please provide the start date. Therefore forwarded to ICS-GCF. 10yrs standard risk CML. The patient had hyperleukocytosis with initial complications & given Asparaginase. The patient was started on Imatinib Apr 2022. Seeking for 2,50,000 for Imatinib (1,50,000) including 17,000 for HCPMR. 3 monthly CBC-MDC and electrolytes over 2 years & supportive care investigations (1,00,000). Non-adherence to ICS-GCF checklist. Please provide the BCR ABL1 status report. Therefore, forwarded to ICS-GCF. GCF - Navya has

Clear cases directly referred to **GAC**

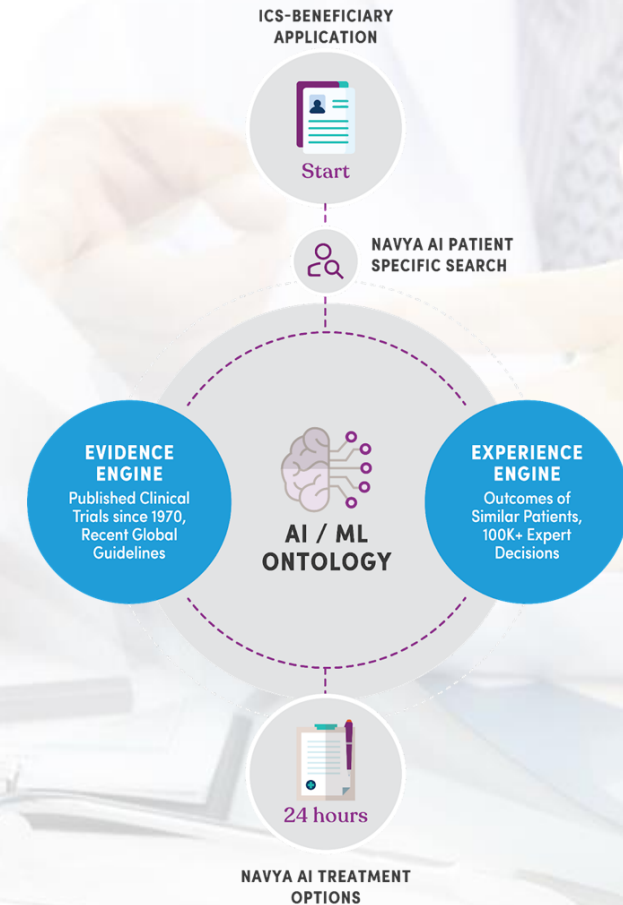
CANCER CURE FUND

Navya Comments

Showing 1-2 of 2 items

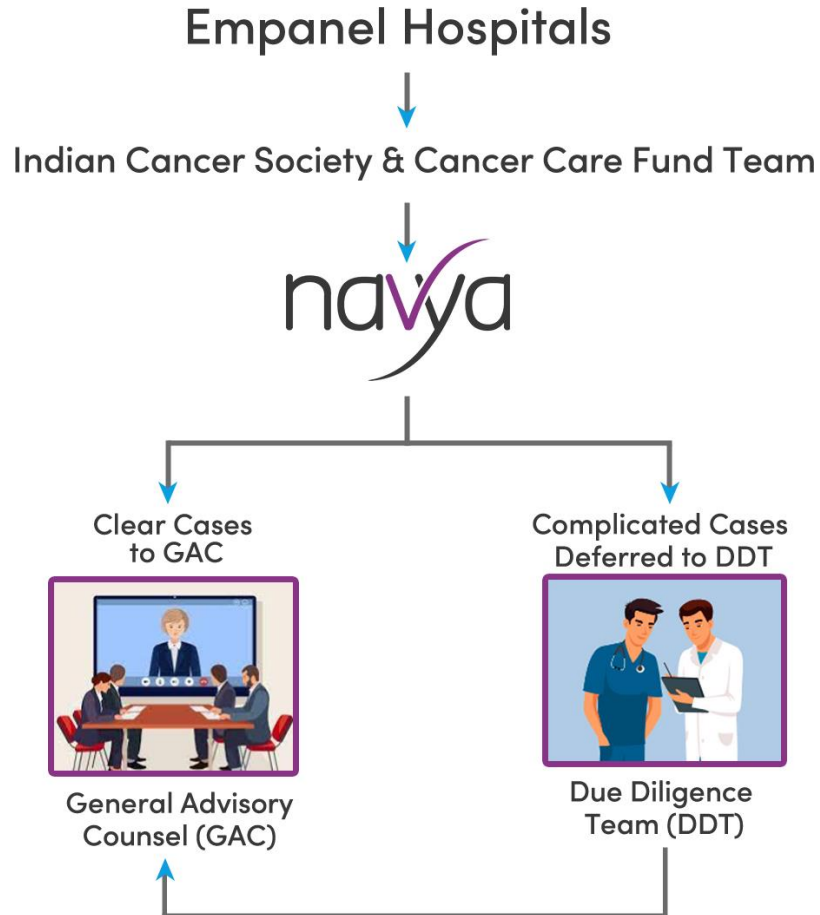
Sr. No.	Meeting Discussion	Amount Sanctioned by Navya	Status	Document	Comments added by	Action
1	10yrs M diagnosed with high risk Ph+ve B-cell ALL in 28th May 2022. PCR positive for BCR-ABL1, transgene CSF1R gene negative. Seeking ADO805 for ICu HR protocol. Non-adherence to GCF checklist, as per GCF checklist, given 10yrs high risk ALL, please provide the post induction remission (MRD) report. Therefore forwarded to ICS-GCF.		forwarded_ics_gcf		navya	
2	10yrs high risk Ph+ve B-cell ALL. Prior ICu HR protocol. The patient has started on induction chemotherapy (day 10 & 15), day 8 response was good & end of induction response assessment will be done in next two weeks (Jun 2022). The treating doctor has written back on Jun 16th 2022, that the child is back and in GCF. He is having acute abdomen and is getting supportive care. He has completed induction chemotherapy and end of induction assessment (MRD) will be generated prior to next visit. The treating doctor notes that the family is having severe financial constraints & also finding it hard to support the ICu care. Seeking for ADO805 for ICu HR protocol. Given high risk ALL, post induction MRD assessment not done & the treating doctor has provided justification for the same, therefore, referred to GCF. ADO 3,50,000 for consolidation and maintenance therapy as per ADOG/CCF policy.		pending		navya	

Complicated cases referred to **DDT**



**Navya has processed more than  
1 Lakh patients with cancer**

# Methods



- 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.



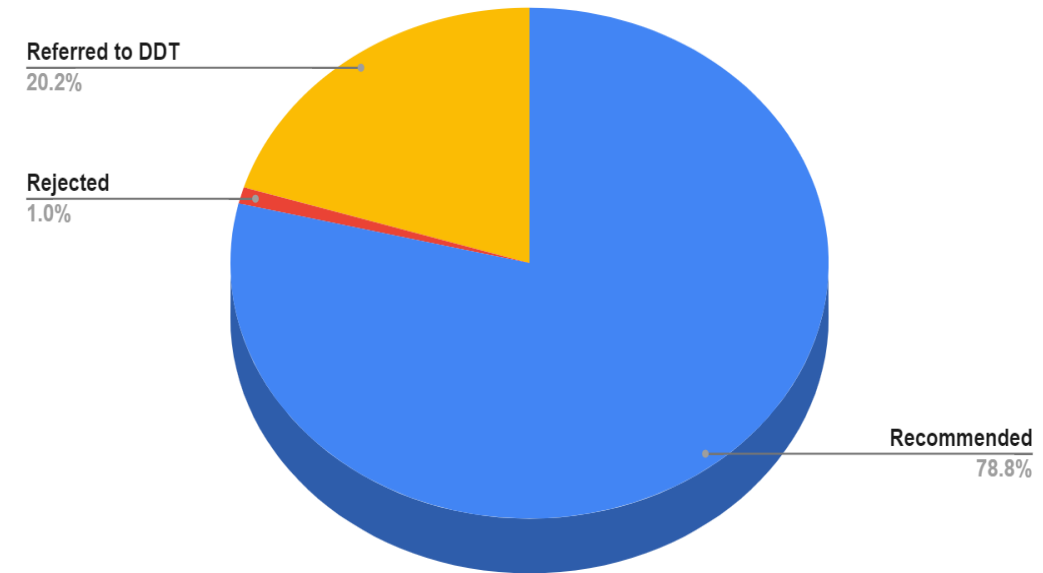
# Results



February 2021 to April 2023

- 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)



Applications passed through NavyaAI

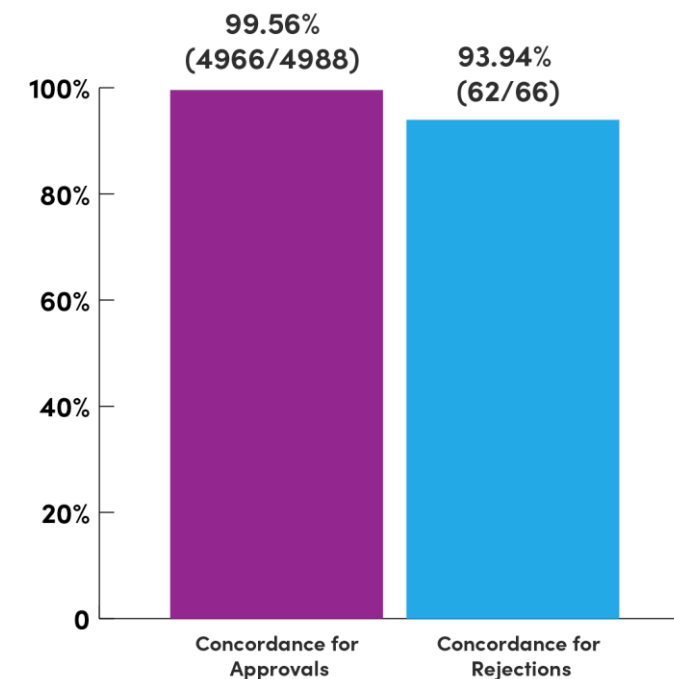


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# Results



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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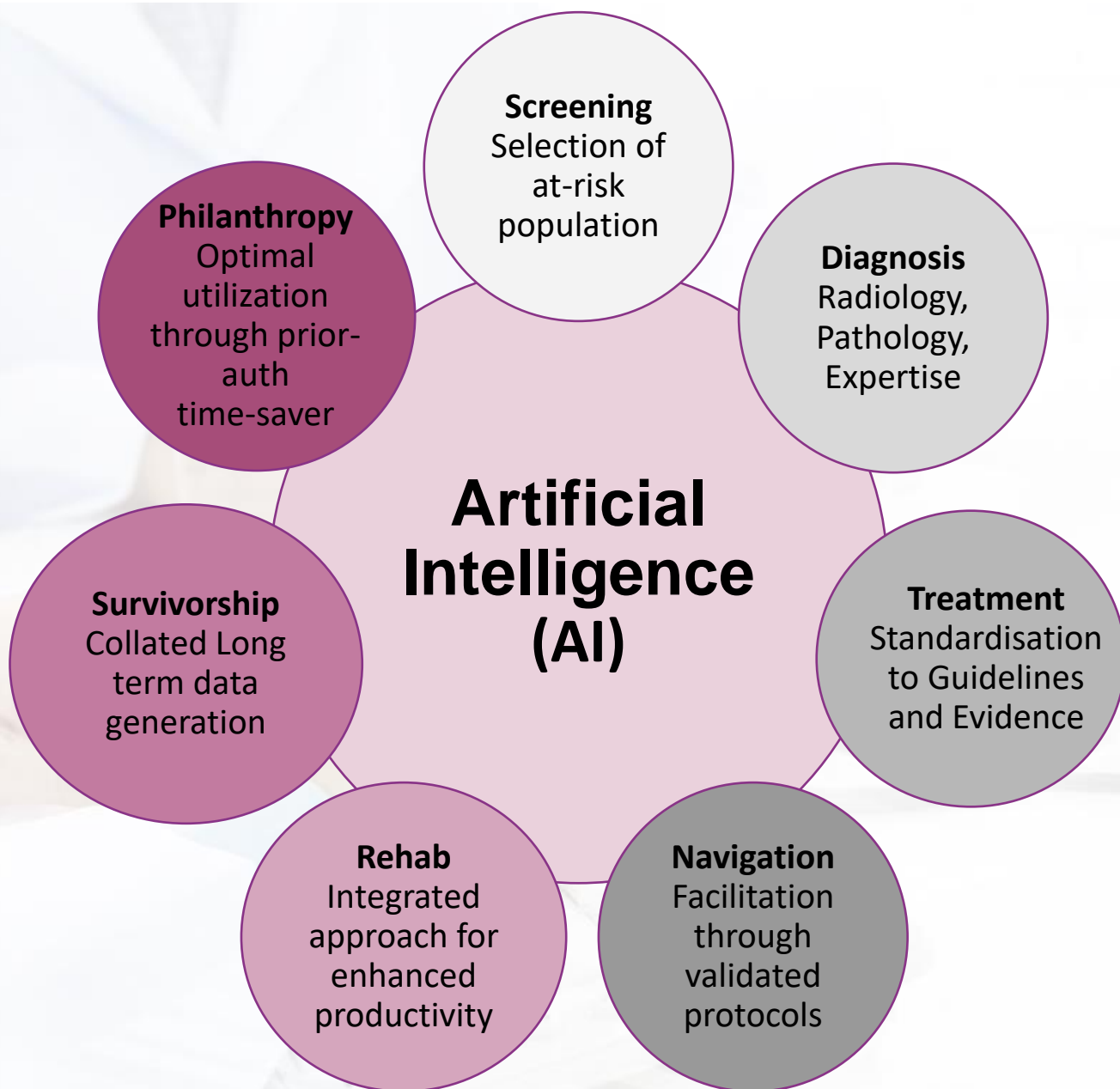


## AI can review and assess the majority (~80%) of applications

- 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!!**