

Match Maker/ Rehabilitation/ 2 March 2022

Dhanvantri Biomedical Pvt Ltd

Project : Sthiti

Product: Sahayatha

Website of the company: <https://www.dhanvantribiomedical.com>

Founder: Mrs.Sruthi Babu

TechEx.in Case Manager: Pradnya Aradhya (pradnya@venturecenter.co.in)

NEED



In India, **30.8 Million** are **mobility impaired**

Out of which **10 Million** require **defecation assistance**



About **4% of death** results every year during the **transfer of patients to the toilet**

with
Sahayatha
we are here to create
an impact

Sahayatha

A smart **defecation cleansing** assistive device for the immobile population.



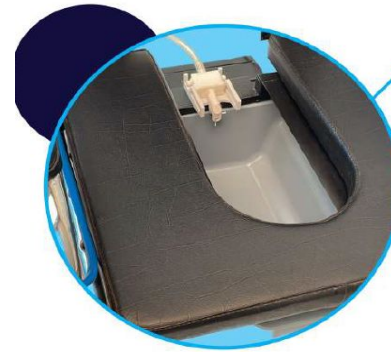
Inbuilt **defecation & cleansing** assembly



Maintains patient's **dignity** with **hygiene**



Reduces **patient transfer**



We are in market
Cost: Rs 29,500/ unit



Sahayatha

NOVELTY

- Inbuilt defecation assembly
- Unique design of cleansing system
- Increases dignity and maintain Hygiene 99.9%



IP STRATEGY

- Non provisional 201941015140
- PCT/IN2020/050352
- US application no 17420527
- Trademark: 5023260
- Design patent: 355538-001 & 355539-001

FEASIBILITY

- CAD Models
- Prototypes
- Clinical Pilot study
- Certification

Awards & Recognitions

- Sushrutha Innovation Award by Indian Medical device and plastic Industry.
- Chinnikrishnan Innovation Award 2021 for best idea by CavinKare
- Suyasakthi award 2021 by Brand Avathar and Sakthi Masala
- Recognized by innovation week IWA and OFEED under International Federation of Inventor's association (IFA), Oxford Business group, Patent Magazine – PQAI American Initiative ,Sharjah Research Technology and Innovation Park, UAE – Sparkinov India



Market validation of the Product

Male



68/68

Female



52/53

Clinician & caretakers



31/32



Acceptance



Hospitals - 12

- Ganga spine injury and rehabilitation centre
- MDCRC
- KIMS Hyderabad
- KIMS Odisha
- GSD Nursing Home



Clinicians - 42








Old age homes - 6



Adults - 279



Competitor Landscaping

FEATURES	Arcatron mobility 	KosmoCare 	Easy Care 	 Dhanvantri Biomedical 
Locomotion	✓	✓	✓	✓
Recline	✓	✗	✓	✓
Backward commode collection	✗	✗	✗	✓
Cleaning assistance	✗	✗	✗	✓
Inbuilt water storage	✗	✗	✗	✓
Cost	Rs.52,500	Rs.47,000	Rs.35,000	Rs.29,500

Target price includes device support, consumables apart from BOM, Manufacturing, Marketing, Distribution etc...

About us

Company Profile:

The start-up Dhanvantri Biomedical Private Limited have developed an innovative assistive medical devices called “Sahayatha” to make the life of mobility-impaired easier, healthier and improved dignity.

Vision: Better health and wellbeing for mobility impaired, now and for future generations.

Mission:

To provide solutions for the defecation and locomotion for the immobile population at affordable cost with excellent quality.

Supported by : BIRAC , DST, Start-up India and Make in India

CORE TEAM

Project Lead



B.SRUTHI

Biomedical Instrumentation
Engineer
Founder & CEO

Mechanical Head



K.K.BABU

Mechanical Engineer
Co-founder & CTO -DB
Experience - 31 Years

Electrical Head



K.RAMAKRISHNAN

Electrical and Electronics
Engineer
Experience - 22 Years

Current employees - 10

ADVISORS

Academics



Dr.R. VANITHAMANI

Associate Professor,
Department of BMIE
Avinashilingam University
Experience - 26 years

Doctor



Dr.B.R.LAKSHMI

Founder of MDCRC
(Molecular Diagnostics,
Counseling, Care and
Research Centre
Experience - 20 years

Clinician



D.r.C.S.R. Kumar

MBBS;MD
Founder of CSR Nursing
clinic
Experience - 32 years

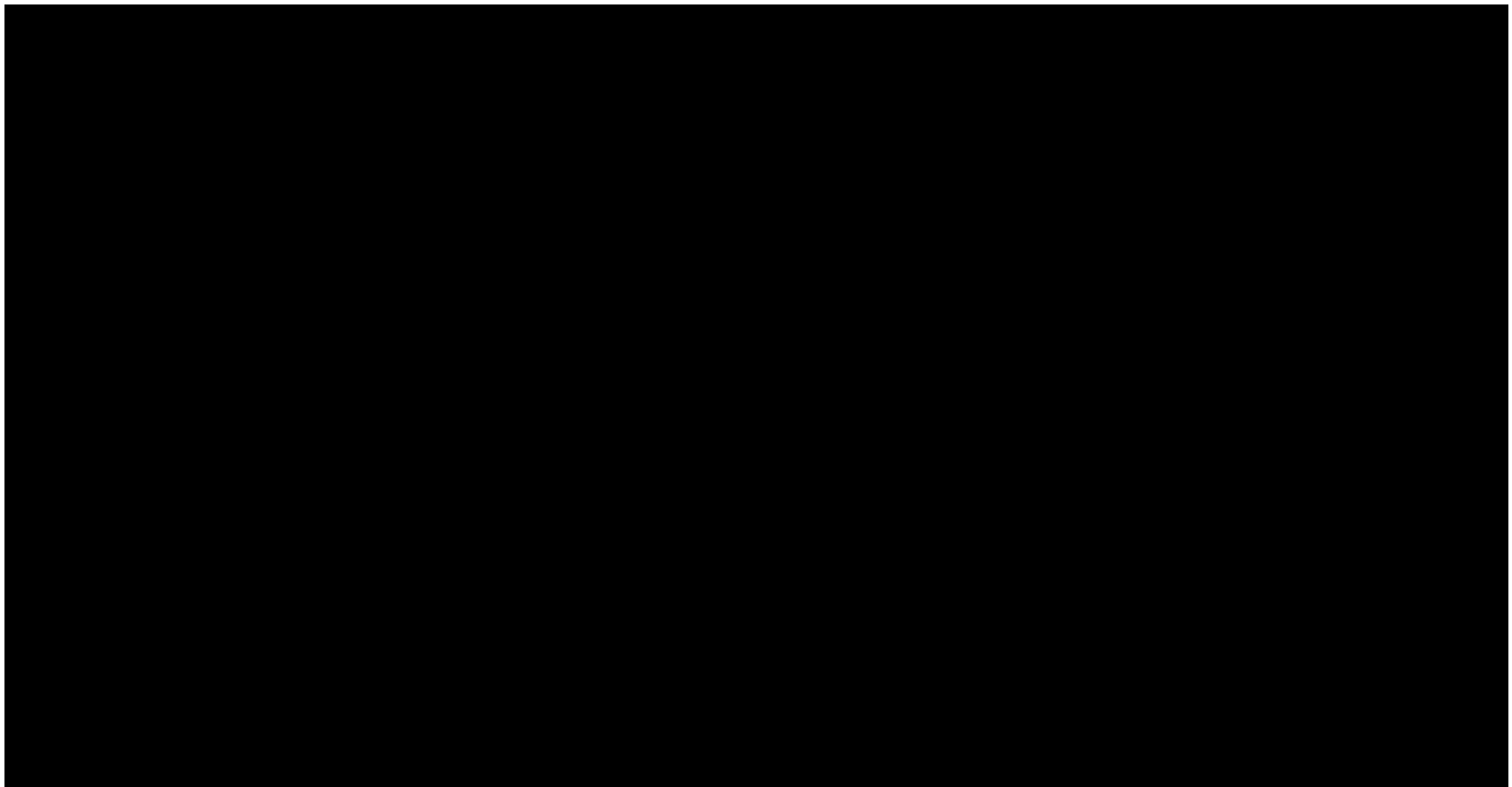
“To increase the quality of life and well being”

Project : Sthiti (स्थिति)

The program to assist the mobility impaired to carry their basic activities of daily living in terms of defecation with dignity and hygiene

Ask : Rs.15,00,000

Deploy : 50 devices of Sahayatha





BHARATHA ANNAI ILLAM

Reg. No. 522 / 2004 (2005) C.No. 227/2005-2006 FCRA - 11/2002/67/2005
Cell - 80945 28080, 80949 31818, 80568 82178, Website - bharatannai.org

CHILDREN HOME

Veludhara's Welfare
Kovil Veluppiyandi, Ponnambali,
Coimbatore-57

OLD AGE HOME

No. 14, Sri Ramdurgam,
Munster Area, Vaduvai,
Coimbatore-57

D.No. 42, 7th A, Panchasala,
Thiruvalla, Pongalur Road,
Mullappuzha, Coimbatore-57

ref:

date: 26/2/22

To,

Dhanvanthi Bio medical,
23, V.G.P. layout, P.N.palayam,
Coimbatore-57, cell: 9629424170.

Respected Sir/madam,

Our Trust is a non-profitable
organisation, which has been working for the intellectually
disabled people. For the past 20 years, we also take
care of various kind of bed patients.

On behalf of our organisation, we
request for your contribution of wheel chairs for our
inmates. A generous support of institute like you
are really needed to us. kindly do the needful.

Thanking you!

Yours truly

For BHARATHA ANNAI ILLAM
D. Vinitha
Managing Trustee



ANBALAYA OLD AGE HOME (Anbalaya Charitable Trust)

To,

Dhanvantri Biomedical
23, V.G.P. Layout,
P.N. Palayam, Coimbatore,
Tamil Nadu - 641037

Respected Madam,

Our old age home is serving more than 67 elderly people. We are fortunate to
come across such a innovation which is solving the untouched need of elderly
patients and also making the caretakers life easier.

It will be helpful if you can donate us with 5 numbers of Sahayatha.

Thanking you

Yours faithfully,
Mr. Gokul
Trustee

Beneficiaries

Whom :

- Geriatric population
- Immobile and
- Differently-abled individuals





Use cases : Old age homes, NGOs, Home care solution and Home ICU solution



IMPACT

- Improve the quality of life of immobile individuals
- Increasing independence and social integration
- Upholding the sense of self dignity
- Preventing patients falls by 90%
- Reducing the number of caregivers from 3 to 1

Budget: Rs.15 Lakhs, Work plan : Deploy 50 devices of Sahayatha

Tasks	1	2	3	4	5	6	7	8	9	10	11	12
Order confirmation of the product												
Develop product of batch 50 pieces												
Deployment of first 50 pieces												
Impact report												

“Let’s assist immobile patients with Sahayatha”.



thank you...

SUPPORTED BY



For more information

Case Manager:

Ms Pradnya Aradhya

pradnya@venturecenter.co.in

+91-8805009010

Start-up:

Dhanvantri Biomedical Private Limited

Ms Sruthi Babu

sruthi.b840@gmail.com

+91-9629424170

Back up Slides

Product Demonstration



**Indoor & Outdoor
Locomotion**



**Chair <-> stretcher
Conversion**



**Inbuilt defecation
Assembly**

**Novel inbuilt defecation
Assembly**



**Easy collecting
and disposal
System**

**Switch for
defecation
Cleansing**

**Cleaning with 300 ml of water jet
spray at angle of
60 degree**

**SIIP fellowship
(2019-2020)
Idea to PoC**



- ✓ Designing of solution
- ✓ Development of PoC
- ✓ Market Validation

**BIG (2020-2021)
PoC to MVP**



- ✓ Developed prototype
- ✓ Testing and calibration
- ✓ Developed test batch
- ✓ Developed MVP
- ✓ Clinical Pilot study
- ✓ Certification and validation

Bookings open

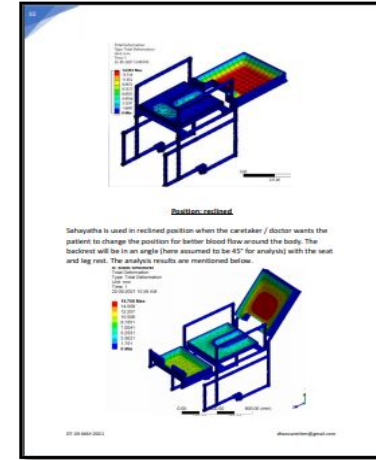
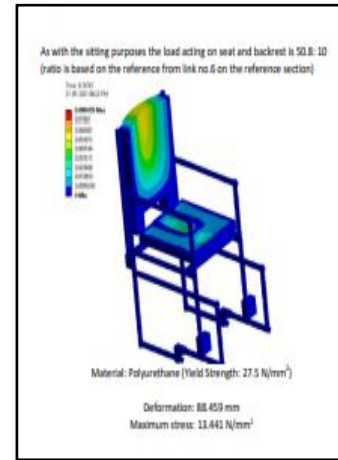


- ✓ Ready to enter the market

TEST DONE FOR SAHAYATHA

- Structural Analysis : ANSYS
- Section 1: Safety Test - Static and dynamic testing
- Section 5: Stability testing for safety in use
- Section 8 :Strength and durability : 100 Kgs

Result : Testing with Sahayatha as per the ISO 7176 guidelines section 1,5, and 8 was successfully performed at B.S.ABDUR RAHMAN CRESCENT INSTITUTE OF SCIENCE & TECHNOLOGY School of Mechanical Engineering , Chennai.



Clinical Pilot Study

Place - Tagore
Hospital

Department - ICU, Post
operative

&
Orthopaedic

Clinician interaction
(Doctors & nurse) - 19

Patients touched - 100



SAHAYATHA is SAFE - SWAB TEST REPORT

Crescent Innovation Incubation Council
LA Vision - A Group of Institutions - Bangalore - 560025

Name : Dhanvantri Biomedical Private Limited

Sample : Medical Device
Specimen : Swab
Cleaned using : Commercial Sanitizers

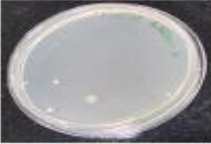
Collection date : Mar 11, 2021
Received : Mar 11, 2021
Date tested : 12/3/2021

Before cleaning **After cleaning**

Back rest






Leg rest

FUNDED BY  **Southkathi Estate, GST Road**
CIN NO: U85202TN2019NPL128219 **Medakur, Chennai - 600048, TN, INDIA**

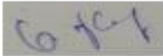
Crescent Innovation Incubation Council
LA Vision - A Group of Institutions - Bangalore - 560025

Seat





Test Name	Results (CFU)
Before cleaning	
Leg rest	±151
Back rest	±23
Seat	±43
After cleaning	
Leg rest	±13
Back rest	±11
Seat	±30

Comments:
 Leg rest was the one which had high number of colonies but cleaning with commercial sanitizer could reduce the count to a minimal acceptable range. This shows that the device is completely safe and does not act as medium for infection.



Mr. M. Dinesh
 Scientific Officer

FUNDED BY  **Southkathi Estate, GST Road**
CIN NO: U85202TN2019NPL128219 **Medakur, Chennai - 600048, TN, INDIA**

Value proposition

Immobile patients

- Eliminates the patient transfer
- Defecation process - Easier, Independent, Hygiene with dignity

Caretakers/nurse

- Hassle free
- Reduces negligence associated with repeated manual care

Hospitals

- Reduces time and labour (Includes business propositions)
- Nurses can be more productive and effective

Flagship programs

- Make in India
- Swachh Bharat mission



Eliminates
Patient Transfer



Reduction in
caretaker from
3-1



Easy defecation
less dependent

IMPACT



Improve quality
of life

CERTIFICATION AND VALIDATION



THE ARYA VAIDYA PHARMACY (COIMBATORE) LIMITED

REGISTERED OFFICE: No. 42, (OLD No. 328) PERUMAL KOIL STREET,
RAMANATHAPURAM, COIMBATORE - 641 045.
Ph : 0422 - 2315412, 2316206, 4322999. av@aryavaidya.com www.aryavaidya.com
CIN : U242337Z19APLCO00009

(FOUNDER - "ARYA VAIDYAN" P. V. RAMA VARIAR)

To Whom It May Concern

I, **Dr. P. R. Krishnakumar**, ayurvedic physician and the founder of the AVP Research Foundation, Managing Director of The Arya Vaidya Pharmacy (Coimbatore) Ltd, The Ayurvedic Trust and Chairman of *CARe Kerala* (Confederation for Ayurvedic Renaissance - Kerala), would like to recommend the project 'A Smart Locomotory Device with a novel mechanism of Defecation Assistance' doing by **Ms. Sruthi Babu**, Biomedical Instrumentation engineer and BIRAC social innovator. Her approach in addressing the need of immobile patients with remarkable problem-solving ability, innovative and feasible solution to assist locomotion and defecation for mobility impaired patients is very refined.

Having an experience of about 47 years in the field of medicine, I feel that this project would positively impact the lifestyle of physically impaired or the immobile patient. This would be essential especially during night time where the caretaker may not be available. It would help the patient providing the most comfortable with independence and dignity. I have read her project proposal and had a look at the video where she has presented her ideas and all her past work. She demonstrated the potential to develop the project and create a social impact with sheer ingenuity and keenness.

I would like to give her project a high recommendation and would like to see her presenting it in the current market.

If I can be of any further assistance, or provide you with any further information, kindly contact me.

Sincerely,

Dr. P. R. Krishnakumar

02.04.2019



TAGORE MEDICAL COLLEGE & HOSPITAL

Rathinamangalam, Melakkottaiyur Post, Chennai - 600 127.
Ph. : 044 - 3010 1111, Fax No. : 044 - 222 5555 E-mail : tagoremch@gmail.com



(Affiliated to the Tamil Nadu Dr. MGR Medical University & Recognized by the Ministry of Health & Family Welfare, Govt of India, New Delhi)

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dhanvantri Biomedical Private Limited** did the Phase I Clinical validation under our Tagore Medical College and Hospital. They have presented in our committee consisting of Dean, Medical Director, Medical Superintendent, Doctors and other esteemed members.

Then they moved forward to complete clinical validation-Phase I. At the end of clinical validation, output was presented to the committee.

Response:

- ❖ The committee gave them a positive approbatory response where they stated that the product *Sahayatha* is bringing comfort to the patient with convertible wheelchair cum bed.
- ❖ *Sahayatha* is providing enormous support for patients in assisting them in defecation process with novel cleansing idea maintaining the dignity.
- ❖ The product decreased the number of caretakers involved for assisting patient during the defecation process.

Suggestions:

- The committee also gave suggestion to place a bag to collect the urine and fecal matter to maintain the dignity of the caretaker as well.
- Include the hot air blow to facilitate the drying of washed area

We are looking forward to procure the product '*Sahayatha*'.

We wish the team *Sahayatha* for their future success.

Dr. K. M. Lingaraj
1.4.2019
DR. K. M. LINGARAJ, M.D., D.A.
Professor & H.O.D.,
Department of Anesthesiology
TAGORE MEDICAL COLLEGE AND HOSPITAL
Rathinamangalam, Chennai-600 127
Reg. No. - 41483

Trust Office : No. 25, Mahalingam Street, Mahalingapuram, Nungambakkam, Chennai-600 120/121/122

Shree Sabari Engineers

Special Engineers & Mfrs. of Special Purpose Machines

Date : 23/04/2019

To Whom It May Concern

We 'Shree Sabari Engineers,' manufacturers of Special Purpose Machineries is interested in providing the dedicated fabrication and manufacturing support for the project 'A Smart Locomotory Device With Novel Defecation Assistance' doing by **Ms. Sruthi Babu**, BIRAC Social Innovator. We assure that the complete manufacturing services will be provided and the company takes no credits on the idea and technology proposed in the project. We further assure that the design and concepts of the product will be maintained confidentially.

We are looking forward for a positive trend with her and would like to see her presenting it in the current market.

For further assistance and information, kindly contact the Proprietor.

Authorized Signatory,

SHREE SABARI ENGINEERS
23, VENUGOPAL LAY-OUT
PAPYLAJACKEN PALAYAM
COIMBATORE - 641 037

SHREE SABARI ENGINEERS

Proprietor

#23, Venugopal Layout, P.N. Palayam, Coimbatore - 641 037
Ph: 0422 - 435 1703, Mobile : 93631 41574, e-mail : sabarieng@gmail.com

Company Committed to Excellence



GLOBAL MARKET

18.1%

Asia CAGR (2021-2025)

\$4,846 M

Market projection by
2025

10 Million

People in India in need of
Defecation assistance



Source - Global Opportunity Analysis and Industry Forecast , 2014 – 2022, retrieved from <https://www.alliedmarketresearch.com-market-wheelchair-requirement-in-india>, retrieved from 'Belgian wheelchair maker Vermeiren comes to India, Our Bureau | Chennai | Updated on January 16, 2018 Published on September 14, 2016'

BUSINESS MODEL

TARGET CUSTOMERS



- HOSPITALS
 - RETIREMENT VILLAS AND NGO'S
 - IMMOBILE, ELDERLY, PHYSICALLY CHALLENGED, COVID PATIENTS
- Users

REVENUE MODEL



B2B

- DIRECT SALES (through medical device dealers & distributors)
- RENTAL (through medical device dealers & distributors)

B2C

- DIRECT SALES (through medical dealers & distributors)
- FINANCE (through financing companies & banks)
- RENTAL (through medical dealers & distributors)



Go to market strategy



PATIENTS TOUCHED :100

- Male : 57
- Female : 43



TOP CLIENTS

1. Tagore hospital
2. Crescent medical centre



PRE-ORDER: 23 piece

Chettinadu Hospital : 20
Covid block

CSR nursing home : 3

Customer pipeline



AWARNESS CREATED

- Target customers - 97
- Target users - 180



Target customers - Talking to

- Stanley Hospital
- Ganga Hospital
- CMC Vellore
- Nana Nani retirement homes



Connected to Dealers and distributors



Kalam Enterprises



Biometric Cables



Elumalai wheelchairs



Sahayatha Road Map

