

## COVID-19: DBT-BIRAC SUPPORTED PRODUCTS & TECHNOLOGIES









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# **Products In Market**



Name of Start-up	Name of Founder	Category	Name of Technology/ Product	Market Status	Production Capacity	Support Needed
PathShodh Healthcare Pvt. Ltd.	Prof. Navakant Bhat	Assistive (Monitoring Medical Device)	AnuPath™: Point of Care Hand Held Multi-Analyte Diagnostic Device			
<ul> <li>Monitoring COV</li> <li>Increased via concentration Chem Lab M. Lancet Prepmonitor these during ICU and the second sec</li></ul>	TD-19 patients ral load in the n of Serum all <i>led Feb 2020;</i> <i>rint March 20</i> we markers for treatment. n ICU setting min, Hb and a ICV, MCH, M CBC (complete sive IEC certifuse for hospita	s in the ICU and COVID patient oumin and Hb (r Science China I 20). It is importa COVID-19 patient can yield immed lso offer addition ICHC, PCT, MP e blood count). ication for safety al settings.	hospitals: show decreased reference: <i>Clin</i> <i>March 2020;</i> ant to periodically ents, instantly diate results for nal parameters V parameters y and EMI/EMC,	Cost: INR 50,000 Units sold: 45	<ul> <li>25,000 test strips per month</li> <li>200 hand held readers per month</li> </ul>	<ul> <li>PathShodh can immediately supply the handheld device and test strips to any hospital for use in ICU or otherwise.</li> <li>Funding required of Rs. 2 Cr. for increasing the production capacity to 1 lakh test strips/month and 1,000 handheld readers/ month</li> </ul>



AnuPath<sup>TM</sup>: Point of Care Hand Held Multi-Analyte Diagnostic Device

(PathShodh Healthcare Pvt. Ltd.)

Cardea Biomedical Technologies Pvt. Ltd.	Abhinav	Assistive (Monitoring Medical Device)	ATOM: Accurate TeleECG On Mobile	Market Status	Production Capacity	Support Needed
Heart Patients ar severity. During hydroxychloroqu • Perform • Avoidan medicati • Identifyi (potassiu In addition, co	e more prone g treatment ine-azithron ECG and ca ce of nor ons ng and corre um, magnesiu morbidities t lney injury of WHO, AHA ows capture artphone wit poctors, healt to of Covid19 CG can be ins before admi y-up during t	e to the Corona v of Covid19 pa nycin, it is essen lculate QTc eval n-essential QT cting electrolyte um, calcium) that may increase r liver disease. (March 2020) of a medical gr h immediate rer h workers and patients with c stantly sent to a nistering the dru he course of the	irus disease ttients with tial to: uation -prolonging imbalances se the risks ade 12 lead note expert nurses to onfidence. cardiologist ugs and also treatment.	<ul> <li>Cost:</li> <li>Up to 50 units: USD 799/unit+ shipping</li> <li>(Includes 1 month of free medical grade ECG analysis for a max 50 analysis per unit. Cost includes taxes).</li> <li>For 100 units and its multiple – USD 759/unit + shipping</li> <li>(Includes 3 months of free medical grade ECG analysis for a max 150 analysis per unit. Cost includes taxes).</li> </ul>	300 units per month.	Funding: Rs 5.1 Cr to manufacture and supply approx. 1000+ units for pan India usage.



ATOM: Accurate TeleECG On Mobile

(Cardea Biomedical Technologies Pvt. Ltd.)



Incredible Devices Pvt. Ltd.	Vikram Goel	Assistive (Steriliza tion for reuse of Medical Device)	CRS-Catheter Reprocessing System	Market Status	Production Capacity	Support Needed
<ul> <li>Challenges amid</li> <li>Shortage of to lack or manufacturin</li> <li>Manual republicher rate or and hospital</li> <li>Solution:</li> <li>Use of CRS</li> <li>CRS ensures of essential to CRS is an medical de thereby ensu</li> <li>CRS shall to devices.</li> </ul>	Coronaviru medical dev f imports, ng supply cl occessing of spread of staff. – Catheter l safe reproc medical dev automated vices with ring doctor help meet t	s Pandemic: ices at hospit , logistics hain world-w f medical de infections, ri Reprocessing cessing of cat ices. system that minimal h patients safe the demand	als may happen due issues impacting ide. vices shall lead to sking both patients System heters and a variety safely reprocesses uman intervention ty. of limited medical	Cost: INR 5-10 L/ unit (CRS comes in multiple variants and cost varies depending upon capacity and features) Sold: Orders are in process	4 machines/ month ( <i>Can</i> be increased as per the need arises)	<ul> <li>Regulatory support from the government.</li> <li>Funds for manufacturing</li> </ul>



CRS- Catheter Reprocessing System

(Incredible Devices Pvt. Ltd.)



Sattava Medtech	Vibhav Joshi	Assistive (Monitoring Medical Device)	Fetal Lite: Fetal Heart Rate Monitor for Women in	Market Status	Production Capacity	Support Needed
Expecting mothe during the Covid- go to hospitals as mothers are bein mothers are findin The right monitor home. Conventio be used at home and is not portab distress cases no mortality during h	rs and bal 19 pandemi there is a g asked to ng midwive ing equipm nal monitor as it needs le. This can the being de- nome births.	bies are vulnera c. It is highly ris risk for infection come to hospi s/ home delivery ent is not availab ing equipment is a skilled operat n lead to higher etected, and ma	able populations ky for mothers to able populations ky for mothers to able for mothers at s not designed to or, infrastructure number of fetal able for able for able for a number of fetal	Units sold: 10 Over 1000 mothers have been monitored using the Fetal Lite device in the last 3 years.	July to September onwards: 60 - 100+ units/ month.	Funds to scale the home monitoring platform.
How can Fetal L The Fetal Lite has operators, in extr can easily perfor monitoring capab receive scan repo to visit the hospita important. Home hospital visits need	ite help? as been desteme scenari m scans. T ility - whic rts and ider al. Even und e monitorir eded.	igned for home tos - mothers or he Fetal Lite al h can allow Ob ntify high-risk m ler normal delive ng will reduce tified.				
<b>Commercially a</b> center under the group of hospit dashboard and do deployed.	v <b>ailable</b> . Pi Bangalore r als, Naraya octor notific	loted with Tave nunicipal corpor ana Healthcare. ation application	rkere health care ration, Aster DM Remote doctor n have also been			



Fetal Lite: Fetal Heart Rate Monitor for Women in Labor



Jeevtronics Pvt. Ltd.	Ashish Gawade	Assistive (Medical Device)	Hand Cranked Defibrillator for Sudden Cardiac Arrest	Market Status	Production Capacity	Support Needed
Recent case report 16.7% of patients of acute cardiac injury complications (http <u>19-clinical-guidano</u> "SanMitra 1000 He disaster struck situs inside hospitals for Battery-less, Relial For city hospitals, (usually Rs 12,000 Patents (1 granted patent filed, more p Jeevtronics is an IS It is designed to int and has been tested f making it super lor We have 64+ prod Chhattisgarh, Tam If this product is de District hospitals a across India.	on 138 hospi leveloped arri y, in addition <u>bs://www.dica</u> <u>ce-cardiovasc</u> CT" Defibrill ations (eg. CC Corona victi ble. it saves them to Rs 35,000 US patent, 1 l batents in the SO13485 certi ternational IE and approve for 16,000 chang-life world- ucts deployed il Nadu, Rajas eployed across nd ambulance	talized COVIE hythmia and 7. to other COVI urdiology.com/ ular-care-team ator is particul OVID 19). Seq ms need lots of the cost of batt per year). (Indian design r pipeline). (Indian design r pipel	<ul> <li>p-19 patients shows.</li> <li>2% experienced</li> <li>D-19 related</li> <li>article/acc-covid-</li> <li>arly useful for</li> <li>uestration areas</li> <li>f defibrillators.</li> </ul> tery replacement <ul> <li>egistration, 1 Indian</li> </ul> r medical devices <ul> <li>L accredited lab.</li> <li>cycles thereby</li> </ul> ra, Gujarat, <ul> <li>ataka.</li> <li>nt PHC, CHC,</li> <li>stically save lives</li> </ul>	Sold: 64 defibrillators till March 19th, 2020. 50+ enquiries from various hospitals. Cost: INR 89,000 + GST 12%= Rs 99,680	50 units per month per shift basis	Seeking support for scaling up and looks forward to government entities, CSR donors and potential investors to help scale this mission urgently.



Hand Cranked Defibrillator for Sudden Cardiac Arrest

(Jeevtronics Pvt. Ltd.)



Janitri Innovations	Arun Agarwal	Assistive (Monitoring	JANITRI	Market Status	Production Capacity	Support Needed
		Medical Device)		otatas		needed
<ul> <li>DAKSH is an ad automated partog</li> <li>DAKSH allows the pregnant woman. Ivitals, as per the generates alerts in algorithm. The door labor progress and</li> <li>DAKSH's role in</li> <li>During the labor plat least 48 hours. Doctors visit them (Skilled Birth Attriconstant contact. Ir work burden has in</li> <li>Because of COVI Medical profession management of su load, physical doct taken care of:</li> <li>1. Remote monitoovisiting them. The remotely.</li> <li>2. Patient Manag screen, audio and complications and</li> <li>3. Digital Documpartographs are g digitally. This mean unlimited cloud stored.</li> </ul>	Ivance intra- graph generate e staff nurse to It reminds the standard Wh a case of cor- ctor at a remo- guide the staff <b>COVID-19</b> hase, women to They are <u>ex</u> a frequently we endants) are a this unforture creased, and r D the hospit boals and pa- ispected patie uments. With oring: The door e progress of gement: Mult I critical aler reminders for hents: This i enerated and ns less contac- orage.	partum monitoring tion. o register and enter vie e staff nurse to moni HO intrapartum prot inplications, based of the location can also f nurse. visit hospitals and get <u>posed to the risk of</u> thich increases conta assigned to labor re- tate situation of Coron nanagement of patien als are facing varior atient's safety is c ents by doctors, mul- DAKSH, these prot ctors can guide the mi- labor can be seen b iple patients will be the measurement of s a paperless system case sheets will be t and less exposure. T	tool for an ital signs of a itor the labor cocol. It also n an in-built view the live t admitted for <u>COVID-19</u> . ct and SBAs coms also in na spread, the ts is required. us problems, ompromised, tiple patients olems can be urses without by the doctor seen on one pased on the vitals. n, automated his also gives	Monitored 29,270 deliveries 115+ hospitals Rajasthan, Karnataka, Delhi, Arunachal Pradesh, Meghalaya, Chhattisgarh, Maharashtra, and West Bengal. Cost: Available on request Units Sold: Daksh:115 KEYAR with DAKSH:15 In the present situation, we will be providing DAKSH free for next 3 months, so the relevant stakeholders may use it to minimize the risk.	400 hospitals/ month can be monitored through DAKSH intrapartum remote monitoring mobile application.	Outreach to maximum private and government hospitals. We have the capacity to enroll the hospital remotely and we can provide training remotely. We need help in awareness, so hospitals and relevant stakeholders can get to know about this.



JANITRI

(Janitri Innovations)



Predible	Suthirth	Assistive	LunglQ:	Market Status	Production	Support	
Health Pvt.	Vaidya	(IVIonitoring	Precision		Capacity	Needed	
LLO.			Insignts from				
LungIO: Ann	lied AL on	Badiology Imaging	Lung Crs	The product is	Data Not	Outreach to	
Severity of CC	VID-19 Patie	nts	ion wontoning	being tested on	provided	hospitals	
Sevency of ee				COVID with sites	provided	for	
Proposed solut	tion is a two-st	ep product with foll	owing steps:	in Philippines &		deployment	
• Artific	ial Intelligen	ce powered solution	on that quantifies	with individual			
patterr	ns in lung com	puted tomographic i	maging, providing	hospitals in India.			
quanti	tative metrics	on the % of lungs a	ffects with texture				
change	es across a bri idation)	road spectrum (from	n ground glass to				
Centra	lized reposite	ory which collects	clinical features				
radiolo	ogy imaging a	nd patient outcome	data to help public				
health	authorities and	d hospitals with a da	ata-driven analysis				
of pati	ent prognostic	ation					
Readiness of T	echnology:						
LungIQ has be	en developed	using over 10,000 G	CTs over the last 1				
year with use-	case of pulmor	nary fibrotic disease	es. The findings of				
COVID19 are	e very simila	ar to that of othe	er infectious and				
inflammatory	diseases and h	ence we are in a un					
a ready-to-use	product in the	fight against COVI					
For radiologists, LungIQ can help detect and quantify findings							
better in rout	ine practice.	LungIQ is also av	ailable as a joint				
solution with t	eleradiology for	or end to end reading	g				



LungIQ: Precision Insights from Lung CTs

Windmill	Dr. Avijit	Assistive	NeoBreathe Easy	Market	Production	Support
Health	Bansal	(Medical	to Use Pedal	Status	Capacity	Needed
Technologies		Device)	Operated Infant			
Pvt. Ltd.			Resuscitator			
NeoBreathe Peda It delivers artifici It reduces leakag For COVID it off A) Reduced Infec • Increases operator	l Operated Int al breaths to n e by half and i fers following ction Risk the physica (for BMV, op	fant Resuscit ewborn babio improves ven features: 1 distance b erator must b	NeoBreathe can be deployed as it is wherever infant patients are expected to be treated.	150 units/month (Can be increased up to 500 units /month as per the need arises)	For modified form (proposed model): Funding requested for upgradation/ development of ventilator	
• Exhaled infected surround	air can be rou exhaled air ings)	uted through is release	a filter (with BMV, ad freely into the	Available on request		
B) Superior Vent	ilation					
<ul> <li>Shows P and lung</li> <li>Stronger (Pressure</li> <li>Settable Pressure</li> </ul>	IP in real time condition in-built prote -safety) PIP. Doctors of to be delivere	e giving feed ction against can preset th d with each b	Units sold: 200+ in India and Africa			
C) Greater Comf	ort					
• By freeir foot peo operation hunched- failure.	ng both hands dal, NeoBrea while BMV over position	and employi the increase requires a pat a - causing	ng highly ergonomic es the comfort of ently uncomfortable, fatigue and risk of			



NeoBreathe: Pedal Operated Infant Resusciator

(Windmill Health Technologies Pvt. Ltd.)



Periwinkle Technologies Pvt. Ltd.	Veena Motkali	Assistive (Monitoring solution)	Net4Medix: Telemedicine Platform	Market Status	Production Capacity	Support Needed
A cloud-based s for patients and specialty system receive diagnost consultation eve Primary Goal management of of COVID-19 Provide a pre-d COVID-19 patie Intended Users: • Auxilian resource status • Leaders control) • Patients • Service readines	ystem with I their heal intended to ic data from n remotely. Pandemic positive pa etermined I ents who ne eters, register hip Viewir Self-report Providers V (s)	apps on Andro thcare provider be used by doct the patients and Monitoring: E tients / suspect evel of remote ed medical assis dical Staff Vi ing patients, re ag dashboards ( ing, viewing aut Viewing dashboard	id, iOS and web s. It is a multi- ors/caregivers to d provide related inable effective positive patients support to non- tance iewing training eporting patient (for planning & hentic resources ards (for logistic	Cost: INR 13,000/ 500 patients (Annual Subscription) Units Sold: 50+	Data Not provided	Seeks deployment facilitation in Public Health System State/ Centre level
Easy-to-Use Fur • Monitoring Di- by health facility measures) • Monitoring Q Facility, Reporti • Staff Trainin Resources • Self-reporting: as well Secondary goal Self-reporting a patients who nee –NCD patients cancer, thyroid/ operative, Geria Strengths: Supported more • Machine learnif for diagnostic as Real-life exampl test • Connects oth collection	nctions sease Contr y, Area-wis puarantine 1 ng, and Daa ng: Repost Direct Stat nd remote ed medical a (diabetic, endocrine f tric, Pediatr than 10,000 ng (Artifici sistance an le of prior u	ol Status: Repor e Dashboards (n Facility: Patient shboards itory of Video us of Home Qua consultation to assistance e.g., cardiovascular issues), Pregnan ic, Blood disord 0 patients so far al Intelligence) n d insights se: Smart Scoped stic devices fo	ting of Infection numbers, counter Registration at o, Audio, Web rantined Patients non-COVID-19 r, hypertension, at women, Post- ers, etc. models available ® CX automated or remote data			

• Easy to add any specialty for faster go-live with minimal		
change		
• Collaborative work with partner labs and other healthcare		
service providers		
• Excellent experience working with public healthcare setups		
with more than 70 installations - have service partners in all		
regions in India		



### Net4Medix: Telemedicine Platform

(Periwinkle Technologies Pvt. Ltd.)



Accuster Technologies Pvt. Ltd.	Amit Bhatnagar	Preventive (Diagnostic solutions)	Portable Compact Mobile Lab (PCML) and La-bike	Market Status	Production Capacity	Support Needed
<ul> <li>Since day of first have been oper pathological test panic due to the MOBILE LAB open system in extendable to 24 villages and rem</li> <li>Distinctive feat</li> <li>This lab is v the Lab have at any temper</li> <li>Less power</li> <li>Blood collect</li> <li>Requires a s</li> <li>Satellite comeven switch</li> <li>Bluetooth an and transfer computers</li> <li>Instant report</li> <li>Instant report</li> <li>Instant report</li> <li>Instant report</li> <li>Instant report</li> <li>This will aid in during treatment &amp; recorded befor This Mobile Lab &amp; disaster Relier</li> <li>If the lab is a wailable and w without treatment LaBikes may transfer to the second se</li></ul>	t Corona report rating in differ ts to provide cor- spread of this di- is a Compact P a suitcase hai hours. This Lab ote locations too ures of Portable ery rugged and r e their proper an- erature from 0 de consumption etion cost reduce mall space to set trol to provide in on/off from a re- nd GPRS trackin r of data can b eting at the testin of Quality Cont be conducted: he, BP, ECG etc. validation ar or the mobile lab. a providing treat by basic parameter re taking up any o will be very use f set ups prepared validable with the vould save many at just because of heat facilities are r	ed patient in Ind ent locations i officience in people sease. Portable Clinical ving Power Ba o can work not on o. e Mobile Lab. naintenance free d predefined pla ogrees C -50 deg d, as tests perfor to up nformation about mote location g: Locations of the be done from g site. trol to the tech such as Hemato ad certification cment to the CO rs of vital organs new treatments eful in the emerged to deal with CO e doctors, time y lives. No pat f the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of its of gency center to of the lack of	dia, their mobile labs in Delhi conducting le who are in state of l Laboratory with an ack- Up of 4 hours nly in the cities but in e as all components of ce. It can easily work grees C. rmed on the spot at tests conducted and the lab can be known Analyzer to Laptop micians so as to be ology, Biochemistry, s from recognized DVID 19 Patients as eneed to be diagnosed /surgeries/medicines. gency hospital set ups DVID 19 Emergency. ly treatment will be ient will be left out diagnostics report.	Mobile Lab: Full Capex cost including GST: INR 4.36 lakh La-bike with bike: Full Capex cost including GST: INR 6.95 lakhs, For both revenue sharing model (Less capex and opex combination are available) Units Sold: 1500+ Minister of State for Health & Family Welfare - Shri Ahwini Kumar Chaubey also launched La Bikes - 16 qty for Buxar district of Bihar	Data Not provided	Deployment and scale up



Portable Compact Mobile Lab (PCML) and La-bike



(Accuster Technologies Pvt. Ltd.)

Neurosynaptic	Sameer	Preventive	ReMeDi	Market	Production	Support
Communications	Sawarkar	(Diagnostic	NOVA™	Status	Capacity	Needed
Pvt. Ltd.		solution)	Digital	Status		Necded
			Health			
			Solutions			
ReMeDi <sup>®</sup> SCAN-CO	JRONA, joint	ly developed by	e-Zest Solutions	Cost:	500  kits/	Rolling out on
of set of medical devi	ices and softw	ations PVI. Ltd. 1 are applications	is a combination	INR 2 5-3	month (Can	including the
of set of medical devi	lees and softwa	applications.		Lakhs	increased as	Screening App.
1ReMeDi <sup>®</sup> CORO	NA Screening	g Application f	or Self-Use by	(The cost is	per the	Screening Kit
Individuals:			·	(The cost is divided in the	need)	and
This Application can	be downloade	d by any individ	dual, and a Risk	following		Telemedicine
Assessment for infec	tion can be ob	stained by filling	g up details like	parts:		Direct-to-Home
can be taken by an in	dividual often	to check the up	lates in the Risk	1) Sale (and		from nospitals.
Assessment. High ris	k would prom	pt the individual	to immediately	AMC) for the		Funds to
visit a hospital. The	location of ind	ividual is also t	agged with his /	meaicai devices		immediately
her consent.				2) Pav-per-use		start
		17.4 6 11		for the		manufacturing
2. Remedie CORU	JNA Screenii	ag Kit for Hea	alth workers /	software		indigenous kits
This Screening Appli	cation is simila	ar to the above. ł	out to be used by	(SaaS) in		and supplying
Health Workers or N	urses for mass	screening. The	Health Worker /	usage slabs		on the large
Nurse fill up the deta	ils for the pati	ients. This Kit in	ncludes a Tablet	3)		scale.
and IR Thermometer,	, as well as a R	apid Test Kit (la	teral flow assay)	Consumables		
for the Corona Suspec	ots, and BP, SP	O2 for other path ata. This is ideal	for Hospitals or	for various		Software can
NGOs to carry out s	screenings at a	a large scale. Th	here is a bridge	diagnostic		almost
available for Telecon	nsultation for	non-Corona Pat	tients who have	tests on a need		immediately.
been indicated as med	lium or low ris	k, as they may no	eed consultation.	Dasis 1) There are		Funds would be
				<i>other</i>		required for
3. ReMeDi <sup>®</sup> CORO	NA Consult: ]	Direct-to-Home	or Clinic Tele-	components		providing these
Consultation: This is an Application	n which can pr	ovide Tele-cons	ultation to either	like training,		to as many
the person assisted	by a Health	Worker at the	mass screening	installation,		country as
location, or Directly	to the masses,	from their resp	ective locations,	etc. that are		possible.
either through a W	Veb Based ap	oplication on a	Laptop, or a	charged for on		
Downloadable App	on the And	roid Smartphon	e. The nearest	a need basis)		
hospital, which has se	t up a l'elecon	sultation Hub wi	th Doctors. This			
number of patients, w	ho do not wish	to visit the hosp	itals due to scare	Units Sold:		
of infection, and for th	ne hospitals as t	they may be too l	oaded to receive	100+		
the patients.						
- 42. 🛸	8.				Remeter Nota 1	
	-					
	-					

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**ReMeDi NOVA<sup>™</sup> Digital Health Solutions** 

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(Neurosynaptic Communications Pvt. Ltd.)

-			-			
Coeo Labs	Nitesh Jangir	Assistive (Ventilator aid)	VapCare	Market Status	Production Capacity	Support Needed
An analysis on journal, suggests secondary infectiventilator association in ventilator association are dealing with provide the second for an ICU nurse cavity and the air exposure to oral for	data from that 50% o ons acquire ted pneume ents and is oneumonia. retion to th to manuall way. This p fluids- this p	Wuhan, published f the deaths in COV d in the ICU, with 30 onia (VAP). VAP is highly fatal in COV VAP happens becau e lungs. The current y remove such secre- outs nurses and careg- isk is magnified wit	Cost: Available on request Units sold: 10 and 400 disposables	1000 units/ month ( <i>Can</i> <i>be increased</i> <i>up to</i> 5000/month if the order is received 8 weeks before the production)	Deployment in Private and Public Hospitals Funding for manufacturing and scale up	
VapCare is an au system for ICU provides a comp removal of saliva risk of exposure significantly redu step in the mana critical in the im ICU admissions f	utomated se patients of eletely close and secreti of the nur close the nurs gement of pending sh for COVID.	ecretion managemer on mechanical ven ed system for intell ons in a ventilated p se to these secretion ing burden by auton ventilated patients- ortages of nursing s				
In the context of unique benefits to 1) Provide managen staff- and 2) Prevent of from CO 3) Free up of laborious	Covid-19 crisis, VA systems: ecretion clearance ntilated patients wi P in these patients ion of nurses and ts- thereby increasin ing time by automa					
This 1.5 minute https://www.yout	video prov tube.com/w	ides a brief overvi atch?v=3-dbCB6EE	ew of the product: 1M&t=9s			
This 12 minute v use: https://www.	video goes t .youtube.co	hrough the details o m/watch?v=p4n9uC	of device setup and CjdIpQ&t=499s			
VapCare is a prop by patents grant efficacy data in a secretions collect two-arm trial is Bangalore. Product is US FI has been complet	prietary pro ted globally a 30-patien ed daily, an currently DA registere red.	duct with its core te 7. The device has t, first in man trial d no adverse events underway at Nara ed and European CH	chnology protected shown safety and - with ~250 ml of or cases of VAP. A yana Hrudayalaya, E certification audit			



VapCare: Automated Secretion Management and Oral Hygiene System for Ventilated Patients



Nemocare Wellness Pvt. Ltd.	Manoj Sanker	Assistive (Monitoring device)	Nemocare	Market Status	Production Capacity	Support Needed
Continuous mo monitoring of a ffected and qu their symptom deterioration. We will also b monitoring pos and academic i understand the The details are <u>https://drive.go</u> <u>uvv-5O-xJ/vie</u> Wearable devi- confirmed posi Clinical valida Netralaya with Has been tested It can record so	ponitoring wearal vitals along with uarantined patie s and the doctor e able to unders sitive cases and institutes that ar efficacy and efficacy and efficacy and efficacy w?usp=sharing ce for remote m itive cases. tion for normal good results. d on adults and pund and play it	ble device that w h geolocation and nts. It will also a s will be alerted tand the disease i will help biophate e developing the fectiveness on ca <u>/1xHFvj03bsm0</u> onitoring of heal use ongoing at N children. Data re back for cough a	ill aid in remote d prognosis of id in tracking on detection of itself by rma companies rapies by helping andidates. aulQl2EKkASC th parameters of larayana ad on dashboard. analysis.	All vendors in India, not dependent on import.	1000-10,000 units/month	1-3 months Ready for use. Access required quarantining site to validate for COVID use.



Nemocare Raksha Plus

(Nemocare Wellness Pvt. Ltd.)



Niramai	Geetha Manjunath	Preventive (Monitoring Device)	Niramai		Market Status	Production Capacity	Support Needed
Automated scr COVID19 infe respiratory disc • How is this d Facial Tempera measured removed • NIRAMAI C with suspected • Just a simply the test, thus ref Other details ar https://drive.go OmruYk43pTf The Solution w between 3 start NIRAMAI Hea -http://niramai. -Thermal Scan Vitor Health Ph -Lung Function DITI Medical 7 http://www.the -Hardware for	eening of popula ction by checkin eases one: ature of all peop otely using a the omputer Vision fever skilled health w educing the press re at: bogle.com/file/d/ Zview?usp=shar vill be provided tups alth Analytix Pv com Software rivate Limited n Test Thermography.co.in Live Thermal Ir	ation to look for ng for fever plus le walking into a rmal camera. technique identi vorker is sufficient sure on clinical t (1cL8LNwVdpE) ing by a joint collabor t Ltd Pvt Ltd n/contact.php naging	likely associated a facility is fies people nt to conduct esting DJCo3kqIq1qd oration	•	Stage – Pilot testing of the device (similar technology that the company developed for breast cancer) Large scale production: Each thermal camera cost 8 lakhs and based on the requirement of the number of units Vs cost.	200 units/month (within 4 weeks of delivery time)	1-3 months (for validation and incorporation of other parameters). Budget – 25 lakhs (Company seeking fund for up to 25 lakhs to buy 2 thermal cameras and 2 researchers to develop other parameters like LFT etc.)



Thermal Scanning for COVID-19

(NIRAMAI Health Analytix Pvt. Ltd.)



Weinnovate Biosolutions Pvt. Ltd.	Dr. Milind Choudhary	Preventive (Sanitizer, Disinfectant)	Nano AgCide Technology	Market Status	Production Capacity	Support Needed
A non-alcoholic made from its Nate environmental sur Silver nanoparticle HIV, Hepatitis B, reports have sugge nanoclusters) in inhibiting the syr budding. Ag NP-ti infection of health infection. Thus, co 1) Spread by 2) Infectivity	aqueous based C noAgCide <sup>™</sup> tech faces. es have antiviral of Herpes simplex gested the role of inhibiting the p nthesis of viral based materials w n care workers (H blocking the RNA by blocking the s	olloidal Silver so nology for disinfe efficacy against m virus, Influenza w GSH capped-Ag proliferation of negative strand vill be able to pre CWs), besides pr affect COVID -19 A replication surface glycoprote	Cost: Silvoclean: INR 450 for a 500ML bottle Units sold: Preorders available	100000 units per month	Scale up and deployment	
Synthesized from and has no ris disinfectants.	Green technolog k of flammabil	y, free from haza ity compared to	rdous chemicals alcohol-based			
Patent filed for pro	ocess of making o	f colloidal silver.				
Test license for r granted.	naking hand sani	tizers and disinfe	ectants has been			
Manufacturing lice	ense awaited.					
Aims to manufacted day with our ma sanitization and di	ure 200 litres or m nufacturing set u sinfection.	ore of colloidal si up to cater the d	lver solution per lemand of hand			



## Nano AgCide Technology

Weinnovate Biosolutions Pvt. Ltd.



M So	ylab Discovery lutions Pvt. Ltd.	Mr. Hasmukh Rawal	Preventive (Diagnostic solution)	PathoDetect 2019 nCOV R T-PCR kit	Market Status	Production Capacity	Support Needed
Pa •	thoDetect 2019 nCO Kit is commercialize diagnosis kit Manufacturing Licen	V RT-PCR ba	<b>ased diagnostic</b> al of ICMR for <b>O</b> from CDSCO	<b>kit</b> Covid-19	Cost of test: INR 1200/test More than 1 lakh tests have been carried out	500 kits (50k tests) /month	<ul> <li>Funds</li> <li>Support required to import kit's components &amp; liquid handling system for automation of the manufacturin g process</li> </ul>



Huwel Lifesciences Pvt. Ltd.	Dr. Rachana Tripathi	Preventive (Diagnostic solution)	Quantiplus®Co ronavirus (2019-nCoV) Real Time RT- PCR Kit	Market Status	Production Capacity	Support Needed
Quantiplus® (	CORONA VIRI	US (2019nCoV)	In Market	NA	Funding to focus on probe manufacture	
• ICMR	approved Real	time Qualitative	PCR kit			manufacture
• Kit is Contro	based on publish I and Prevention	ed protocol of C (CDC)				
• Kit has molect chrome	s synthetic gene ale within a cell osomal DNA and	cloned in a pla that is physicall d can replicate in	smid (small DNA y separated from a dependently).			
• Offers a one-stop solution, which includes detection kit, extraction kit, molecular transport medium (MTM) and swabs for sample collection.						
• Manuf under	acturing Reagen	ts & Kits follow ronment				
Products in pipeline:						
Huwel     Nuclei	Molecular Trans	sport Medium n Kit				



## Fast Track Review



Aarna Biomedical Products	Dr. Pawan Mehrotra	Management	Suraksha Full Body Coverage Kit	Market Status	Production Capacity	Support Needed
Suraksha Full Bo A holistic solu environments. It • 1 full fac • 1 face ma • 1 whole • 1 disposa • 2 shoe co • 2 nitrile I • An outer after UV	dy Coverage Ki ution for vari- comprises: e shield, ask (as per the re body coverall wi able bag, overs, hand gloves for n polypack harbo sanitization.	t ous personnel in equirement), ith fused head cover medical examinatio oring all the above	n vulnerable rage, n and components	To be available from June 2020 onward, accepting pre- orders from May 2020. <b>Cost: INR</b> <b>476- INR</b> <b>952/kit</b> (Depending on the intended purpose (Biosafety Level)) plus GST and actual shipping charges.	10000 – 25000 kits/ month (as per the demand).	<ul> <li>Connects with the Ministry of Health – HLL and other State Medical Supply Corporation Limited.</li> <li>Connects with DRDO and other relevant bodies for necessary approvals.</li> <li>Assistance with the district administration in Delhi-NCR for logistics and approvals.</li> </ul>





Alpha Corpuscles	Atul Sardana	Assistive/ Management	Face Shield	Market Status	Production Capacity	Support Needed
Face Shield to protect Made up of aerosols.	ct the face from patho clear PET Plastic and	To be deployed in 0-1 month	50,000 Shields/ month	• Funds for manufacturing equipment's		
<ul> <li>For single us</li> <li>Provides Co</li> <li>Tests undert tested</li> <li>Recommend</li> </ul>	Cost: INR 75/ piece		• Connect to partners/ govt. agencies for procurement			





Cistron Systems Private Limited	Mr. Suresh Rajan	Assistive	PSA Medical Oxygen Generators	Market Status	Production Capacity	Support Needed
<ul> <li>PSA oxyge produce me</li> <li>This reduce for a hospit logistics on</li> </ul>	n generator edical oxyg es the deper al from ver the last-mi	s are a separa en on-site. adency of sup adors and con le in times of	nte source to oply of oxygen nplex cylinder f contingency	<ul> <li>They are currently manufacturin g 4 different models of PSA oxygen generators (22, 50, 100 &amp; 200 litres per minute flow rate of medical oxygen)</li> <li>About 25 units are installed in private hospitals, all over India, maintained by them for the past 3 years.</li> </ul>	<ul> <li>All generators are made against order</li> <li>They can currently do 5 units in 4 weeks time</li> </ul>	<ul> <li>Funding support required</li> <li>Govt permissions to supportive vendors, during lock down, allowing them to supply raw material and also allow transportation of vehicles</li> <li>Access to Govt account at the top level &amp; to make this technology available at all levels.</li> </ul>







Ayu Devices Pvt. Ltd.	Adarsha K.	Assistive (Monitoring Medical Device)	AyuSynk: Smart Stethoscope	Market Status	Production Capacity	Support Needed
AyuSynk/Ayu Biocontainmen (listening to the With personal p the coronavirus in the ears for the •Auscultation stethoscope with Solution: AyuSynk's unit to perform ause environment and reduce contamin • AyuSynk can Bluetooth with room or send se <u>Additional Pro COVID-19</u> : 1. Digital stet mobile. Pl support can 2. Analytics to and wheet developme we expedit	Lynk: Digital S t presents a use lung sound) protective equipt s, how does the c istening? at the bedsic th tubing become que stethoscope scultation while ad can be used v nation when pre- be used directly in the isolation r bounds via email ducts in $3 - 6$ of hoscope that car anned to launce a expedite to 3 n o identify abno- ze to monitor nt phase. We wite e. We need addi	Stethoscope for C nique challenge ment (PPE) in trea clinician place ster le using a com es impossible design allows he being protected with protective cov e-screening admiss v using earbuds or room or to a consu or instant Messag development that h in 6 months. main lung sounds COVID-19 pne ill be able to launce tional funding to o	FOVID 19 for auscultation ating patients for thoscope ear tips eventional style althcare workers in an isolation vers in the ED to sions headphones, via altant outside the ging are relevant for ice without using Additional fund o such as crackle umonia. In the ch in 3 months if expedite.	Cost: INR 16000 Units sold: 1000+	In discussion with contract manufacturers to scale the production capacity	<ul> <li>Need Funds for scaleup:</li> <li>a. We have planned for manufacturing 100 units. However, to scaleup, we need funds for procuring the components.</li> <li>b. Logistics support: We are getting orders from all over India; however, we are not able to ship devices due to lockdown. If any priority shipping is provided, we will be able to send devices all over the country.</li> <li>c. Manufacturing scaleup support to cater to a larger need we need to scale up our manufacturing.</li> </ul>



AyuSynk: Smart Stethoscope

(Ayu Devices Pvt. Ltd.)



Ubiqare Pras Health Pvt. Lin Ltd.	sanna maye	Assistive (Medical Device)	Specialty Medical Supportive/ Palliative Care to Patients at Home	Market Status	Production Capacity	Support Needed
<ul> <li>Ubiqare enables doctor home, reducing hospital</li> <li>The Ubiqare solution</li> <li>telepresence technology</li> <li>mile clinical network phlebotomists.</li> <li>Covid-19 patients at homogeneous endoced interactive clinical network</li> <li>Extension of a interactive clinical network of a sample collection of a sample collection clinical network.</li> <li>The patients can be care trajectory - from the A to Moderate Symptom infrastructure to be lever Severe Symptoms.</li> <li>In the Asymptomatic patients' health will be to the cloud for analysis reviewed by the care of samples for testing will protocols during quar During this stage monit covered.</li> <li>For patients in Moder shifting to an isolation of Care doctor over the test hospital under specialis</li> </ul>	or-driven al visits a ion sea gy, collal k of doc ome, unde care of H nical telep toring by sed analyt isted Tria or/ Pulmon tion or i rk/ health ed for at H Asympton ms stage veraged f stage an e self-mon is by an a doctor. Ir l be supp rantine w itoring of erate stag ward in p elepresence evere sy Ubiqare v sts' care.	specialty c nd stays. mlessly co boration fra- ctors, nurse er care from Pulmonologio resence IoT enabled tics on EHR ging and Tel nologist/ Phy nterventions care workers nome during natic stage to e. This ena for only tho d Mild Sym nitored, and lgorithm. The nerventions orted. Non-co vill be dete f family mer e, Ubiqare proximity and ce platform. /mptoms of	are to patients at ombines clinical mework, and last s, therapists and Ubiqare, will get: st/ Physician and d medical devices le-Consultation by ysician by the last mile s. most of the illness o Mild Symptoms bles the hospital se in the stage of nptoms stage, the the data uploaded is analysis will be for collecting lab compliance to care cted and alerted. nbers will also be will support with d supported by the r patients with in shifting them to	Cost: Subscription Range from Rs. 15,000 to Rs 20,000 per month Served 110+ patients at home, Delivered 6200 patient-days of supportive medical care, for serious illnesses like cancer, stroke, MS, cerebral palsy, orthopedic and few others. 96% of the clinical episodes were managed at home, avoiding as many readmissions.	Software solution can be scaled up quickly without any capacity limitations	Development Support for implementing the necessary changes within a short time. Clinical alignments: Close collaboration with telehealth- friendly and empowered physicians/ pulmonologists. Logistics of access to the last mile healthcare workers in remote places Development grant: Financial support Rs 15 Lakhs in accelerating the development roadmap. Features needed are: Integrating IoT- capability for clinical monitoring devices •Analytics for first- level triaging and alerts •Community level aggregation of data •Support for Care Compliance (including quarantine protocol)

MVP

Specialty Medical Supportive/Palliative Care to Patients at Home

(Ubiqare Health Pvt. Ltd.)



## GOassure"

MicroGO	Dr. Rachna Dave	Preventive (Sanitizer)	GOassure™	Market Status	Production Capacity	Support Needed
GOassure is IC which digitaliz GOassure ensu- the WHO reco- the variation (co- officer/manage At the time whi virus infection prominent tool importance, M of India, Chem- passengers at thy yiene using immigration cl	OT enabled fully zes the hand hyg ures that the user mmended six st or non-compliant ers. hen entire world , effective hand is we have to co icroGO in colla nai have develop he International GOassure befor heck.	v automated ham giene process. rs perform hand ep of hand hygic (ce) to the author is fighting again hygiene is one of ntrol its spread. boration with A ped an SOP for terminal, to per te entering in to	Deployed the product at several airports. Ready for scaleup. Need funds for scaleup (75 lakhs - 1 Cr). R&D and manufacturing facilities at Chennai.	90-100 units/ month ( <i>Can</i> <i>be increased</i> <i>up to 1000</i> <i>units/month</i> <i>within the time</i> <i>period of 2-3</i> <i>months</i> )	In Market Already deployed the product at 11 airports Requires financial assistance of INR 1 Cr for scaleup	
Based on expe many airports Calicut, Guwa installed GOas	rience gained fr viz., Chennai do hati, Baroda, Pu ssure.	om Chennai Inte omestic airport, ne, Kolkata and	ernational airport, Hyderabad, l Goa have			
We are in proc airport as well.	ess of deployme	ent of GOassure	at various			
Apart from air public and priv kitchens, Farm	ports, GOassure vate spaces like aggregator Wa	e has been instal Taj group of hot ycool, Banks an				
We at MicroG Our motto is " (from pathogen	O believe in the SAFE and SAV nic organisms) v	power of micro E "- Keeping liv while "SAVE" n				
In addition to oproduct line up that we are dep	GOassure, we had so for water and so for water and so boying in the cu	ave multiple pat surface disinfect urrent crisis for j	ents protected ion / sterilization public health.			



GOassure (MicroGO)





In order to identify, empower & fast track innovations for COVID-19 control, **IKP Knowledge Park** has put together the IKP COVID Fund and further proposed to BIRAC for matching the grant support to fast track deployment of solutions for control of COVID-19. The same has been approved for funding 10-15 start-ups.





Parisodhana Technologies Pvt Ltd	Dr. Satyanarayana V N T Kuchibhatla Dr. Ajay S Karakoti	Preventive	Hybrid Multiply Face Mask	Market Status	Production Capacity	Support Needed
A substitute for media offering efficiency (>99% convenience in t cotton contact m * Filtration med evaluation at SIT	• <b>N95 respirator manuf</b> high particulate (>90%) 6) while ensuring high b ropical conditions throug aterials. ia is certified for PPE, fi TRA, Coimbatore, India	<b>Cactured using f</b> and bacterial fil- reathability, con gh pure hand we nal product is ur	<b>iltration</b> tration nfort and eaved nder	• Cost: Rs 50-75 per piece	• Daily 10,000 units per day starting May 15, 2020	• INR 1.5 to 2 crore to set up dedicated facility for scale up with relevant machinery, inventory along with a dedicated full mask testing facility in India.







Monitra Healthcare Pvt Ltd	Dr. Ravi Bhogu	Preventive & Management	UpBeat	Market Status	Production Capacity	Support Needed
Solution that al critical parame Rate/Heart Rate, Monitra upBeat @ which makes remo slim profile, discre- upBeat ® App: relays to upBeat ® upBeat ® Cloud: format, used for an upBeat ®.Analyt reports allow onlin Significantly redu could reduce the in Patients with remo	llows remote ters – ECG, SpO2 & Temp ® is the most a ote monitoring c eet and can be ea Logs symptoms © cloud. Holds a vast ar nalysis. ics: Analyses da ne access. ces the risk of ex- ncreasing demar- ote monitoring d ore than 2x great	monitoring of in Respiration Ra- perature advanced bio-sensin omfortable and easy asily worn on the ch s, receive data from nount of raw data i ata, personalizes al exposure to healthcan d of PPE and other evices have a proba- ter than those witho	ndividual's ate. Pulse ng platform y. No wires, nest. n biosensor in its native lerts & re workers, logistics. ability of ut.	<ul> <li>Units sold: 400 units.</li> <li>Total number of hours of continuous monitoring = 30,000+ hours.</li> <li>Average hours of continuous monitoring per unit = 75+ hours</li> </ul>	• Rs. 5,000 /unit / Rs. 1500 for 2 weeks	• Funding support required

## System of Alerts

Indication of when to seek medical help /move to hospital









Turtle Shell	Mudit Dandwate	Assistive (Monitoring	Dozee	Market Status	Production	Support
Pvt 1td	Danawate	Medical			Capacity	Needed
TVI. LIU.		Device)				
Dozee converts any bed into a step-down ICU like continuous health monitor in less than 2 minutes of set-up. It provides the data of the entire ward on a single screen from where patients' health can be easily managed and early distress signs can be caught. All this from a safe-distance without risking the chances of infection for the healthcare staff. Features include: • Contact-free (Placed under the mattress of the user) • Remote Access • Custom distress alerts with SMS & Email Support				Cost: INR 7200 Units sold: 2500+ Dozee in Rajasthan Barah PHC set-up isolation ward with 24x7 monitoring. Aashiyana Living to keep a continuous health check on their 23-high risk in-mates	Data Not provided	Regulatory guidance from CDSCO for Commercializing Dozee.
<ul> <li>As accurate* as ECG, Echo-cardiography &amp; RIP bands</li> <li>Pulse oximeter (<i>optional, requires extra accessory</i>)</li> <li>CE Approved</li> </ul> The algorithms detect the following health parameters from the raw ballisto cardiography (BCG) data captured from under the mattress of a user: <ul> <li>Heart Rate</li> <li>Respiratory Rate</li> <li>Snoring events</li> <li>Body movements and restlessness</li> <li>Sleep stages</li> <li>Sleep Quality</li> <li>Stress, Recovery and Heart rate variability parameters</li> </ul>			Dozee in Bangalore – Free proactive care for the quarantined & vulnerable population. Starting March 15 <sup>th</sup> , we started as campaign utilizing Duroflex's CSR funds to provide our devices to give proactive care to 200 home quarantined and people in vulnerable category (diabetic, elderly, cancer			
RoHS Compliant Ability to flag early signs of respiratory and cardiac distress			patients, COPD patients) at no cost.			



Dozee

(Turtle Shell Technologies Pvt. Ltd.)





**C-CAMP** has also launched an initiative C-CIDA in its efforts to scout for innovations that are ready to be deployed immediately or in the near future to curb the COVID-19 outbreak. BIRAC has approved support to C-CAMP under the Co-funding partnership. Around 10 start-ups shall be supported under this initiative.



# Manufacturing Facility for COVID-19





Andhra Pradesh MedTech Zone (AMTZ)	Dr. Jitendar Sharma	Preventive (Diagnostic solution) and Assistive (Ventilator- aid)	Manufacturing facility for IVD kits and Ventilators	M	arket Status	Production Capacity	Support Needed
Establishment of diagnosis and ve These will be pri	Emanufacturing ntilators for treat marily supplied	facility for IVD atment is propose l to government a	kits for COVID-19 ed. Igencies.	•	Molecular Diagnostic kits are being manufactur ed Ventilator production will begin soon.	5000 ventilators/ month	Funds for purchase of equipment and establishment of manufacturin g setup.





# PRODUCTS TO BE IN MARKET IN 3-6 MONTHS



Diagnostics



Other Interventions

## **PRODUCTS TO BE IN MARKET IN 3-6 MONTHS**

Diagnostics	Other Interventions
<ul> <li>MagGenome Technologies Pvt Ltd</li> </ul>	<ul> <li>Nuverse Health Solutions Pvt</li> </ul>
<ul> <li>Ubio Biotechnology Systems Pvt Ltd</li> </ul>	Ltd
<ul> <li>Dhiti Life Sciences Pvt Ltd</li> </ul>	<ul> <li>IIT Ropar</li> </ul>
<ul> <li>IIT Guwahati</li> </ul>	<ul> <li>EdubioSkills Solutions Pvt Ltd</li> </ul>
<ul> <li>Yaathum Biotech Pvt Ltd</li> </ul>	<ul> <li>Briota Technologies Pvt Ltd</li> </ul>
<ul> <li>SHC Shinebiotech Pvt Ltd</li> </ul>	<ul> <li>Biomoneta Research Pvt Ltd</li> </ul>
<ul> <li>Denovo Biolabs Pvt Ltd</li> </ul>	<ul> <li>Weinnovate Biosolutions Pvt Ltd</li> </ul>
<ul> <li>Guru Gobind Singh Indraprastha University</li> </ul>	<ul> <li>Incredible Devices Pvt Ltd</li> </ul>
<ul> <li>University of Delhi South Campus CIIDRET</li> </ul>	<ul> <li>Reinste Nano Ventures Pvt Ltd</li> </ul>
<ul> <li>SciGenom Labs Pvt Ltd</li> </ul>	<ul> <li>PGIMER Chandigarh</li> </ul>
<ul> <li>Promea Therapeutics Pvt Ltd</li> </ul>	<ul> <li>Dr Amit Singh</li> </ul>
<ul> <li>SCMS Institute of Bioscience and Biotechnology</li> </ul>	<ul> <li>Dr Adil Yusuf Zai</li> </ul>
<b>Research and Development</b>	
IIT Delhi	
<ul> <li>Endimension Technology Pvt Ltd</li> </ul>	For various proposals as "other
<ul> <li>Achira Labs Pvt Ltd</li> </ul>	interventions" for COVID-19
<ul> <li>Prantae Solutions Pvt Ltd</li> </ul>	
<ul> <li>Biosensika Labs LLP</li> </ul>	
<ul> <li>Levram Lifesciences Pvt Ltd</li> </ul>	
<ul> <li>Biyani Biosolutions Pvt Ltd</li> </ul>	
Production of molecular and Rapid diagnostic tests	

### **DIAGNOSTICS**



Development, validation and commercialization of a diagnostic kit comprising a) sample collection buffer and b) RNA extraction kit and 3) real time RT PCR for detection of SARS CoV-2

### MagGenome

**MagGenome Technologies Pvt Ltd** 

Development, validation and commercialization of Lateral flow test for the detection of anti-corona virus SARS-COV-2 IgG & IgM from human sera



Indigenous development of rapid and affordable real-time RT-PCR for COVID-19 SARS Co-V-2 including validation by NIV and immediate deployment of the test kits

Yaathum Biotech <mark>Yaathum Biotech Pvt Ltd</mark> Development of a point of care Lateral Flow Diagnostic Platform for detection of viral antigens and antibodies IgG & IgM of Corona Virus SARS-CoV-2 for validation and deployment

Subio

Ubio Biotechnology Systems Pvt Ltd

CRISPER based diagnosis of COVID-19 using paper microfluidics



IIT-Guwahati in collaboration with IIT Jammu, NICED, Stethox Healthcare

Development of highly sensitive & specific, rapid, point-of-care, low-resourcerequiring, colorimetric and cost-effective test for COVID-19 detection



SHC Shinebiotech Pvt Ltd

Development of necessary reagents and test-devices for:

1. Detection of N protein of SARS-CoV-2 in body fluid in ELISA and colloidal goldbased rapid lateral flow formats (Ag Detection Test)

2. To develop IgM/IgG assay for COVID-19 in rapid format

#### CIIDRET

University of Delhi South Campus CIIDRET A rapid, cost-effective IgM/IgG lateral flow in vitro diagnostic (IVD) strip test for rapid point-of-care screening of COVID-19 cases and population level screening for immunity monitoring



SciGenom Labs Pvt Ltd in collaboration with Anamol Laboratories, Navi Mumbai, Christian Medical College CMC, Vellore

Development of "Nucleic Acid Lateral Flow Immuno Assay" (NALIA) test kit for simultaneous detection of COVID-19 specific nucleic acid and antibody (IgM/IgG)



**Promea Therapeutics Pvt Ltd** 

LAMP based, point of care POC rapid and low-cost diagnostic test for COVID-19



SCMS Institute of Bioscience and Biotechnology Research and Development in collaboration with Malabar Cancer Center

Development and evaluation of aptamer based lateral flow assay kit for detection of SARS-CoV2 detection



IIT Delhi in collaboration with Vanguard Diagnostics Pvt Ltd

Artificial Intelligence algorithm for automatic screening of COVID-19 patients from Chest X-Rays and Chest CT scans



**Endimension Technology Pvt Ltd** 

Development and evaluation of antigens to capture antibodies on Lateral flow immunoassay device for the screening of Covid19 infection



Guru Gobind Singh Indraprastha University Development of triple biomarker based Plasmonic Resonance Linked Immunoassay Kit for detection and surveillance of Coronavirus and SARS- CoV2

## PRANTAE Prantae Solutions Pvt Ltd

Lateral flow-based testing kit for Covid-19: Combined Antigen and Serological CAS detection

Biosensika Labs LLP in collaboration with LabCare Diagnostics Pvt Ltd



Achira Labs Pvt Ltd

**Denovo Biolabs Pvt Ltd** 

#### **OTHER INTERVENTIONS**



Development and deployment of contactless, affordable thermopile-based ultrasonic sensors for screening of COVID-19 suspects Indigenous Production of Novel Personal Protective Equipment for Healthcare Personnel

Dr Adil Yusuf Zai

Design, development and deployment of a digital sanitation assurance system. This system will ensure that users are following basic sanitation protocol and will also maintain the record of adherence



**Dr Amit Singh** 

Nuverse Health Solutions Pvt Ltd in

A Low-cost Ambu-bag Attachment for Rapid Mass Emergency Deployment as a Ventilator - AARMED



IIT Ropar in collaboration with Dayanand Medical College Ludhiana Parmar Hospital, Ropar Development of Screening Technology for Testing Microbial & Viral Burden in the Environment Came in Contact with COVID-19 Positive Cases - Pre/Post Decontamination to Monitor Infection Control

EdubioSkills

EdubioSkills Solutions Pvt Ltd in collaboration with TestRight Nanosystems Pvt Ltd SpiroPRO- Home Monitoring built to monitor daily lung health conditions of high-risk patients for actively verifying fever, other respiratory symptoms and lung capacity which can lead to increase in susceptibility towards COVID 19 virus.



#### Briota Technologies Pvt Ltd

Develope and demonstrate decontamination devices powered by patented ZeBox Technology in eliminating and preventing the transmission of n-cov19 via all three possible routes: Aerosol based, Droplet based, Surface based and continued protection from secondary infections, by operating these devices continuously and safely alongside patients.



#### **Biomoneta Research Pvt Ltd**

Large scale manufacturing of novel colloidal silver-based hand sanitizer to break the chain of COVID19 virus spread



Weinnovate Biosolutions Pvt Ltd

Development of an Automated Reprocessing System (ARS) for hospitals to meet the demand of medical devices such as Ventilator Expiratory Parts, Patient Circuit, Intubation Tubes etc. that are necessary in the treatment of patients affected by COVID-19.



#### **Incredible Devices Pvt Ltd**



**Proposed design of ARS** 

Current tray design which supports only catheter and balloons. The tray design and connecting ports will be optimised to connect ventilator parts.



Early Validation/ Testing and Certification of Long acting Virus Propagation inhibition Coatings for Various Surfaces to allow start of mass production for application in places of mass transit like stations, hospitals, public transport viz trains, buses. These materials Coatings with nano will significantly curb the SARS CoV -2 propagation by surfaces and also significantly reduce the cost of sanitization and downtime of equipment / methods and Modes due to daily and frequent sanitization.



#### Reinste

**Reinste Nano Ventures Pvt Ltd** 

Smart Mechatronic Artificial Respiratory Therapy System (SMARTS) for COVID-19: Design, Development, Testing of prototype





PGIMER Chandigarh in collaboration with UIET, Panjab University Chandigarh; IIT Ropar; SCL, Mohali Punjab



# COVID-19 RESEARCH PIPELINE



Lunt

Vaccines

## **COVID-19 RESEARCH PIPELINE**

Vaccines	Therapeutics	Drugs Repurposing
Serum Institute of India Private	OncoSeek Bio Pvt Ltd	Eyestem Research Pvt Ltd
Limited		
	<i>in vitro</i> Lung Organoid model	Development of strength and
of a rBCG (VPM1002)		alveolar enithelial lung cells on
		air liquid interface (ALI)
Cadila Healthcare Ltd	Virchow Biotech Pvt Ltd	Srikara Biologicals Pvt Ltd in
		collaboration with Consytel
DNA Vaccine candidate	Plasma Therapy	Lifesciences Pvt Ltd
Bharat Blotech International		Polynhenolic fractions from the
Liu	University of Delhi South	rind of <i>Punica granatum</i> for
Inactivated rabies vector	Campus and Gennova	COVID-19
platform	Biopharma Ltd	
Gennova Biopharma Ltd and		
HDT	Production of SARS-CoV-2-	
mRNA Vaccine candidate	specific antibodies and their <i>in</i> - vitro/in-vivo evaluation	
Aurobindo Pharma Ltd		
	Bioklone Biotech Pyt I td	
VesiculoVax <sup>TM</sup> SARS Cov-2	Diokione Dioteen I ve Etu	
IICT Hyderabad	Development of therapeutics	
Intranasal Vaccine candidate	derived from Convalescent B	
Enzene Biosciences Pvt Ltd	- cells	
SARS-CoV2 Spike and Receptor		
Binding domain protein for use		
CMC Vellore		
mRNA Vaccine candidate		
IIT Indore		
Pseudotyped SARS-CoV via		
Pseudotyped SARS-CoV via VSV platform		
Pseudotyped SARS-CoV via VSV platform National Institute of		
PseudotypedSARS-CoVviaVSVplatformNationalInstituteofImmunology		
PseudotypedSARS-CoVviaVSVplatformNationalInstituteImmunology		





PHASE III, double- blind, randomized, placebo-controlled study to evaluate the duration of acute respiratory symptoms among exposed high-risk population during COVID-19 pandemic by enhanced trained immune response through VPM1002 rBCG Vaccine



Serum Institute of India Private Ltd

Development of a safe COVID-19 vaccine based on the inactivated rabies vector platform under GMP facility for human clinical trial



**Bharat Biotech International Ltd** 

Development of DNA Vaccine against novel Coronavirus SARS-CoV-2

Zydus Cadila

Cadila Healthcare Ltd

A novel vaccine evaluation platform to support SARS-CoV-2 vaccine development in resourcelimiting settings



**National Institute of Immunology** 

mRNA Vaccine candidate development



Gennova Biopharma Ltd and HDT

Intranasal vaccine candidate development



Lipid encapsulated mRNA-based Vaccine candidate development



**CMC Vellore** 

VesiculoVax<sup>™</sup> SARS Cov-2



Aurobindo Pharma Ltd

Pseudotyped SARS-CoV using vesicular stomatitis virus VSV platform



Large scale continuous manufacturing of SARS-CoV2 Spike and Receptor Binding domain protein for use of resource

ENZINE

**Enzene Biosciences Pvt Ltd** 

**THERAPEUTICS** 



Immunotherapy of COVID infected patients using therapeutic antibodies from Human or Equine sources.

Purification of IgG (convalescent sera from COVID recovered individuals) at commercial scale and conduct clinical trials using these preparations in CoV positive patients. In parallel, cloning, expression and purification of COVID antigens and immunization of horses with CoV antigens and purification of high titers of equine hyper immune globulin against COVID-19 for the treatment of COVID infected patients



Virchow Biotech Pvt Ltd

Creating an in vitro Lung Organoid model for enabling prophylactic, therapeutics and diagnostics research on COVID-19

OncoseeK Bio\*

**Oncoseek Bio Pvt Ltd** 

To use a phage-display based technology to discover SARS-CoV-2-specific antibodies. Aimed at large scale production and purification of selected antibodies and their evaluation for *in vitro/ in vivo* neutralization and animal challenge study will be carried out followed by phase 1 and II neutralizing antibodies



University of Delhi, South Campus and Gennova Biopharma Ltd

To develop an immunotherapeutic for COVID-19 using B cells from convalescent patient blood.

(i) Isolation of B cells from COVID-19
convalescent patient blood and
development of human monoclonal
antibodies (mAb) to SARS-CoV2 proteins
(ii) Identification of clones with virus
neutralizing potential with high avidity



**Bioklone Biotech Pvt Ltd** 

To develop airway and alveolar epithelial lung cells on air liquid interface (ALI) from hiPSCs derived lung epithelium based *invitro* model system for better understanding of the pathophysiology of COVID-19 infection which may be helpful in identification of new therapeutic targets.

👛 Eyestem

**Eyestem Research Pvt Ltd** 

Therapeutic potential of selected polyphenolic fractions from the rind of *Punica granatum* as a standalone drug against COVID-19



Srikara Biologicals Pvt Ltd in collaboration with Consytel Lifesciences Pvt Ltd

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# Additional Facilitations

# **COVID 19 SOLUTIONS**

Startups Submit your Innovations that are ready for Immediate Deployment

## for a

Fast tracked Review and Funding support



Submit Proposals at: sped4.birac@nic.in

# COVID19

## CO-FUND INNOVATIONS THAT ARE READY FOR IMMEDIATE DEPLOYMENT

# PARTNER WITH



FAST TRACK REVIEW AND FUNDING SUPPORT OF PROPOSALS

Write to us at: sped4.birac@nic.in





Diagnostics, Vaccines, Novel Therapeutics, Re-purposing of Drugs or any other intervention for Control of COVID-19

## BIRAC CAN IMPLEMENT CSR FUNDS FOR FINDING COVID-19 SOLUTIONS



## **\*CSR FUNDS FOR COVID-19**

In view of the recent Corona virus outbreak, Ministry of Corporate Affairs, Govt. of India, has clarified that spending of CSR funds for COVID-19 is eligible CSR activity.

Various activities are included under item nos. (i) and (xii) of Schedule VII relating to promotion of healthcare, including preventive healthcare and sanitation, and disaster management.

\*For more details, please visit: http://www.mca.gov.in/Ministry/pdf/Covid\_23032020.pdf Contact Person: Mr. Utkarsh Mathur, Manager-Business Development, BIRAC, Email Id; sped3.birac@nic.in









Evaluate inovo Cinovo Virtual Partnering

BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL

SUPPORTS

# COVID-19 VIRTUAL PARTNERING

Accelerate your partnering activity on COVID-19

FREE VIRTUAL PARTNERING EVENT FROM 20TH APRIL- 6TH MAY



DEPARTMENT OF BIOTECHNOLOGY Ministry of Science and technology



## FIRST HUB Special Session on COVID-19 Every Friday (3:00 to 5:00 pm) starting 3rd April 2020

# FIRST HUB is a facilitation unit set up by BIRAC to address the queries of innovators

Representatives from CDSCO, ICMR, NIB, GeM, KIHT, BIS, DBT and BIRAC will be available to take queries on

- Regulatory Pathways
- Standards and Specifications
- Manufacturing and testing infrastructure support
- Funding Opportunities
- IVD Testing and Validation
- Public Procurement

Queries can be submitted through BIRAC website <u>https://www.birac.nic.in</u> Queries submitted through BIRAC website will only be considered and answered through audio/video mode only For further queries write at **sgandhi.birac@nic.in** 



DEPARTMENT OF BIOTECHNOLOGY Ministry of Science and technology



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# FIRST HUB Webinar on COVID-19

## APRIL 17th, 2020 From 4:15- 5:00pm

## Webinar ID: 666-070-043

For further queries write at sgandhi.birac@nic.in,mii01.birac@nic.in



## COVID19 COLLECTION

**COVID19 Resource Center for Regulations and Test Standards** List of Regulations, Guidance notes and Test Standards relevant to products needed urgently for the national response to the COVID19 crisis.



#### **Government Partner**



### **Host Partner**



Centre for Cellular and Molecular Platforms

## National Biomedical Resource Indigenization Consortium (NBRIC)

**National Biomedical Resource Indigenization Consortium** (NBRIC) is constituted by the Department of Biotechnology, Ministry of Science and Technology, Govt of India, as a Public Private Partnership to foster indigenous innovation focused on developing reagents, diagnostics, vaccines and therapeutics for COVID19.

## Mission

- To be a nation-wide platform for convergence of research and product resources, and technology services towards developing reagents, diagnostics, vaccines, and therapeutics across India for COVID19 response
- ✤ A Make in India initiative for Biomedical research and innovative products, towards import substitution and export.



**Industry Partners** 





## NBRIC Phase I - COVID19 RT-PCR

## **Testing Support**

Considering the dire need for RT-PCR testing across India, including suggestions from NITI Aayog, we propose a pilot for NBRIC with a focus on molecular diagnostics (RT-PCR) reagents, this consortium aims to build 1-1.5 M COVID testing reagents within a month and exponentially scale-up then onwards.

### \* Enzymes

Companies - Richcore, Genei Labs, DSS

### Primers and Probes

Companies - Syngene, Sigma/Merck, Eurofins

### \* RNA extraction

Companies - MDI Membrane technologies,

NCBS, Syngene

### ✤ dNTPs

Companies - Sapala (H'bad), DSS

### \* RT-PCR kits

Companies - Mylab, MolBio, CoSara, Huwel, Trivitron etc.





Moch

Syngene





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