REPORT

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad.

1. Name and designation of ICMR- IF

   : **Prof. Sidhartha Satpathy**
   Head, Dept of Hospital Administration
   & Medical Suptd, National Cancer
   Institute, AIIMS New Delhi

2. Address

   :Room no 6, Dept of Hospital Admn
   Ground Floor, Old Pvt Ward Block
   Main Hospital, AIIMS.

3. Frontline area of research in which
   training/research was carried out

   : *Study of existing technology based
   innovations at UAB in the field of
   health-care services for possible
   implementation at AIIMS/India with
   suitable modifications.*

4. Name & address of Professor and host institute

   :**Prof.Rubin Pillay, PhD, MD, MBA**
   Prof of Medicine & Health care Adm
   Asst Dean for Global Health
   Innovation, School of Medicine
   Faculty Office Tower Suite-1203
   510, 20th Street, S Birmingham,
   Alabama 35294. Ph-(205) 934-1997
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5. Duration of fellowship with exact date

   : 3 weeks [13-10-19 to 02-11-19]
   How-ever, due to postponement of
   AI-126 on 13th Oct to 14th Oct, it
   started from 15th Oct 2019.

6. Highlights of work conducted

   : As envisaged in the Fellowship
   proposal, it provided a broad
   exposure to the academic milieu in
   several departments at UAB, along-
   with insight into operational aspects
   Methodology comprised of meetings,
   discussions, observations, site visits
   and seminars for Faculty/residents.

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i) **Technique/expertise acquired** :-

(a) **Digital e-uab system:-** I have developed a thorough understanding of the UAB digital "e-uab" system, which allows for taking medical consultation (s) in virtual mode through digital medium. This also helps in earlier and cheaper consultation for about 20 common medical conditions, decreased logistics, travel time and enables seamless connectivity with medical records. This is operational 24/7, is powered by Zipnosis, a third party software, and has three broad components, viz online health interview (5-15min); clinician reviews within an hour during office hours, and online prescription to the pharmacy of choice (2-5 min). This software is also being used by other Institutions/individuals in other cities, notably Albany, Texas to name a few.

(b) **Simulation Lab:-** I have learnt about the Simulation lab (Sim UAB) which is a virtual "simulation" lab being used extensively for facility planning and system development; during both pre-construction and post-construction phases. Such simulation exercise(s) help in providing accurate assessment of space requirements, work-flow patterns, logistics, and helps in identifying latent threats, which are then "red flagged" to administration. This can be developed in a modular manner with adequate space allocation and requisite equipments, including hardware/software.

(c) **Precision Medicine:-** During my visit to Personalized Medicine Institute at UAB, I became aware of the Alabama Genomic Health Initiative (AGHI), which is truly a gigantic effort to harness the power of "genomic analysis" to help identify those at high risk of genetic disease, and provide basis for translational research. With a liberal NIH grant, it aims to collect samples from 1 million Alabama citizens through the "All of Us" research program, also known as "precision medicine" based on innate biology (genetic); lifestyle (choices we make during life); and environment. This is intended to find best ways to stay healthy, create better tests to see if people are sick/risk of getting sick, and make new discoveries. It is covering a wide spectrum of areas, viz tumor gene sequencing (e.g BRCA 1, 2); Pharmacology (choosing correct anti-depressant, potential candidates for de-addiction etc); Pathology, Bio-informatics Cancer chemotherapy effectiveness research etc.

(d) **Innovation Depot:-** I have gained first-hand experience of Global Health Innovation Depot at UAB which is a large incubator for health-care related start-ups. UAB provides a conducive eco-system with 'hand-holding' and support for Researchers to innovate and find new solutions. During my visit with Prof. Rubin Pillay, I had discussions, and observed demonstrations with several Faculty/Research Scientists, notably Expertdocs [software based algorithm to identify top physicians at UAB]; Helplighting [a device with bi-directional connectivity through which an apprentice can get synchronous advise from expert by videography]; Hospicelinks [a software which links facilities available at various hospices to hospitals & patients]. Unfortunately, none of the start-ups were focused on web-based virtual assessment of hospitals for accreditation. During my interaction with Director, Regulatory Services at Joint Commission for Accreditation of Health Care Organizations, (JCAHO), it was made clear that all hospital assessments were carried out physically on-site. How-ever, a very limited role can be envisaged for Helplighting with adequate precautions, after commercial launch, if any.

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(e) **Hospital Informatics:-** I had the opportunity to visit the Hospital Informatics Division which is part of UAB IT, and is responsible for providing a "robust and secure technology frame-work to advance healthcare, empowers academics and research, and supports operations and administration". This frame-work comprises of multiple stakeholders, and maximizes the utilization and effectiveness of technology, meets UAB's technology needs in a cost-effective, co-ordinated and efficient manner with adequate safety and security of systems and information. Discussions revealed that the HSIS interface engine version 16 is presently in use since Jan'19, with Orion Rhapsody Interoperability Engine established in 2017. It is able to successfully co-ordinate and integrate not only hi-tech equipment systems like Aria, K Pentax, Magview, but also Cerner "Impact" electronic health records, and communication software like Vocera. More specifically, I could obtain first-hand information about "patient flow system" which provides a holistic bird's eye view of all patient admissions, transfers, and discharges on a 'real time' basis. This is extremely useful for taking timely and appropriate decisions for faster turnaround time leading to better utilization. It also provides, hourly and daily volume based information on patient load factors, vacant beds in wards, ICUs, day care etc, besides helping in OT scheduling.

ii) Research results, including any papers, prepared/submitted for publication : Not applicable as not envisaged.

iii) Proposed utilization of the experience in India:-

The following table shows how the expertise/skill gained can be utilized

Sl no	Expertise/area	Place of use	Proposed utilization modalities
(a)	Digital e-uab system	AIIMS, New Delhi	1) Creating a system for obtaining official "second opinions" from Clinicians for those patients who request for such opinion due to "trust" at AIIMS, but are receiving treatment elsewhere due to long waiting time here. 2) Can be modified to start a "digital consultation" for EHS and/or follow-up patients, which can help in reducing crowds, and making more time available for new patients.
(b)	UAB Sim Lab	AIIMS, New Delhi	Setting up such a lab at AIIMS will be very helpful in using "evidence based" decisions based on "simulation", which will reduce potential errors and arbitrary decisions. It can be useful to 'enact' scenarios dealing with newer facilities, projects and process mapping.

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Sl no	Expertise/area	Place of Use	Proposed Utilization modalities
(c)	Personalised Medicine Lab	All reputed medical research Institutes	Collaboration with UAB will enable our Institutes to harness the amazing potential of genomics.
(d)	JCAHO & UAB Innovation Depot	NABH/NHA AIIMS New Delhi	1) No technology based off-site (virtual) assessments are being done by JCAHO, hence should not be carried out in India. 2) In consonance with "Make in India" initiative, it would be worthwhile to explore a collaboration between AIIMS/NCI and UAB to look at mutually beneficial opportunities. Given the volumes at AIIMS, it can lead to quicker adoption of technological innovations.
(e)	Hospital informatics at UAB	AIIMS, New Delhi	There is potential for collaboration with regard to telemedicine applications, research projects on HIS, and adopting "patient flow systems" for real time decision making.

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Signature of ICMR-IF

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