The only constant feature in this world is change. While all the change may not lead to progress, there can be no progress without change. This is true for any individual, institution, organization or the country. The success or even survival of an institution or organization depends on making necessary changes.

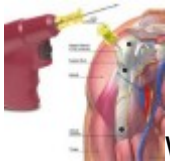
If we need to define innovation it can be stated as*"the generation of **new ideas** or application of **existing ideas** to a new situation resulting in improvement"*. Every innovation begins with harvesting of an idea which fulfills a desired goal. It has to be remembered that innovation is not synonymous with invention.

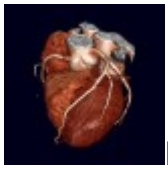
The triad of survivability of an innovation depends upon:

- A strong execution plan.
- Widely and readily acceptable.
- Commercial viability.

With the increasing demand in healthcare sector and concomitant decline in workforce, it is mandatory for any hospital particularly the emergency department to make necessary changes so that quality care can be given to all the patients within shortest time.

You will not disagree to the fact that the most widely used procedure in ED is gaining a vascular access. Many a times a seemingly easy IV cannulation becomes difficult either due to increase in subcutaneous fat; collapsed veins in cases of shock or non-visibility of veins particularly in infant and children.Such a situation will either demand a ultrasound guided access or need expert hand or multiple attempts all of which not only delays in initiating treatment but also put brakes on a smooth running department. A newer handheld device "AccuVeinsAV300" has developed using laser technology which visualizes veins based on absorption of light by hemoglobin and helps in easy cannulation. This makes IV access less cumbersome with minimum attempts.

 While intra-osseous (IO) access is not new entity but its use in adults is still not widely utilized. Newer needles are available with a plunger which drives the needle into the marrow cavity and gives a vascular access within a few seconds. This is particularly useful when patient brought to ER in a collapsed state or in cardiac arrest. Conventional sites such as greater tuberosity of humerus, tibial malleolus or sternum can be used.

 In a resource limited setup where there is paucity of interventional cardiologist or cath lab it is difficult to diagnose a case of acute coronary syndrome particularly if ECG and cardiac markers are not altered. In such situations it becomes mandatory to do either thrombolysisor refer to other center which goes against the campaign “Time is muscle”. Coronary CT using a 64 slice machine can provide an alternative to extensive chest pain work-up in the ED and serves as an alternative diagnostic tool.CorE-64 study says that coronary CT is almost as accurate as cardiac catheterization in the diagnosis of cardiovascular disease. As it is non-invasive withrapid results the patient compliance rate is also good moreover there is no physiologic stress to the patient, so that patient need not wait to stabilize to undergo the diagnostic test.

 In cases of head trauma we have to rely upon CT scan to know if there is a hematoma intracranially. Don’t you ever wonder if there would have been a smaller brain injury diagnostic device? *“InfraScanner”* is the answer to this. It is the only portable handheld design so far to detect brain hematoma and is being in use by US Marine Corps to triage subdural, epidural, and intra-cerebral hematomas. Even it has FDA clearance. It is based on use of near Infrared Spectroscopy (NIRS) by detecting hemoglobin in the brain using its light absorbing properties. This device is simply a screening tool, not a CT replacement.

 Encountering a foreign body either in the external auditary canal or nostril is not uncommon particularly in the younger age group. Blindly curetting in the ear canal or nasal passage can result in pushing the object deeper, which can cause damage and swelling making removal difficult, especially with an uncooperative child.*"Bionix Lighted Forceps"* combine illumination and magnification to help healthcare providers take less time to see and safely remove ear canal and nasal passage obstructions.

 Patient arriving in ER with jerks body movements or non-convulsion seizures often require an EEG to establish a diagnosis. Traditional EEG study needs trained personal to conduct the test and interpret the results.Handheld EEG monitoring device *"Brainscope"* which acquires data from 5 frontal head leads instead of the usual 21 electrodes of the Standard International system is a simple and easy devise as the machine analyses and intrepret the results and gives simple results like – "normal/abnormal and global/lateralized.

There are innumerable such new technologies and diagnostic equipment that are being discovered or modified to make our life simpler and to provide quality health care.But every ER is unique and has its own limitations. ED physicians should analyse their own resources and try to modify the existing system.These are some of the causes for not attempting innovation

- Afraid of failures; of opposition; of the unknown.
- Lacking adequate and correct information.
- Reluctant to experiment.
- Bound by custom & tradition.
- Unaware of their own strengths for achievement.

Innovation is the name of the game in medicine, but for every groundbreaking change there are a hundred that don't see the light of day and dozens that don't survive the shake-out of practicality. Of those that find their way into regular use only a select few can really be called "practice changing."

Author:

Dr. Soumar Dutta, (Consultant, Critical Care & Emergency Medicine, Narayana Superspeciality Hospital, Guwahati)

Author

- CCEM Journal

View all posts