

# Virtually Integrated Care



Dr. Anoop K.R  
Principal

Bishop Benziger College of Nursing, Kollam





# Youth Icon Award Winner - krishnakumar





# വൈദ്യശാസ്ത്രം



മോളാർ ന്യൂറോൺ ഡിസീസ് ബാധിച്ചതിനുള്ളതും കൈഎസ്. വിക്രമൻ | മോളാർ ബിജു വർഗീസ്

ചികിത്സയിലിരുന്ന് ഈ പ്രപഞ്ചത്തിന്റെ മഹാമഹത്വങ്ങളുടെ ചുരുളഴിച്ച ശാസ്ത്രജ്ഞൻ സ്പീഷൽ ഫോക്കിങ്ങിനെ ലോകം ഇപ്പോഴും ആദരവോടെയും അർപ്പണത്തോടെയും ഓർക്കുന്നു. ഇവിടെയിതാ ഒരു മലയാളി, ഫോക്കിങ്ങിനെ ചികിത്സയിലൊതുക്കിയ മോളാർ ന്യൂറോൺ ഡിസീസ് നേറ്റാർ പെട്ടാതി തന്റെ മേഖലയ്ക്കായ ബിസിനസിൽ അർപ്പിക്കപ്പെടുന്ന വിജയങ്ങൾ കൈവരിക്കുന്നു. തന്റെ കണ്ണുകളുടെ ചലനംമാത്രം ഉപയോഗിച്ച് പ്രതിവർഷം

08/04/2021

DM WIMS Nursing college, national conference



പരമേശ്വരൻ പ്രസിദ്ധീകരിച്ചിട്ടുള്ള 'മാനസയുടെ ഏതും ആയി. ഓർബിറ്റർ ക്യാമറ പകർത്തിയ ചിത്രങ്ങൾ ചെറിയൊരു ഫൈലിൽ അടയ്ക്കി എൽജിനിയറായ ഷൺമുഖ സത്യപ്രഭുവാണ് വിശദീകരണം ചെയ്തത്. സെപ്റ്റംബറിലെ ചിത്രത്തിൽ ദൃശ്യം അപൂർവ്വമായിരുന്നുവെന്നാൽ ഒക്ടോബർ 14, 15, തീക്കുളിൽ പറ്റിഞ്ഞ ചിത്രങ്ങൾക്കുപിന്നെ പരിശോധിച്ച ശാസ്ത്രജ്ഞർ 'ലാൻഡർ' കണ്ടെത്തിയത് ചന്ദ്രോദ്യമോം വേഗം കൂറയ്ക്കാനാകാതെ ലാൻഡർ ഉറപ്പുനേടുന്ന ക്രേസർക്കോർ കഴിഞ്ഞുവീശും. ഓരോ തീക്കുളിയിലും, എന്നാൽ, നാസയുടെ കണ്ടെത്തൽ ആർ.പി. പ്രസിദ്ധീകരിച്ചിട്ടില്ല.

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സെപ്റ്റംബറിലെ ചിത്രത്തിൽ ദൃശ്യം അപൂർവ്വമായിരുന്നുവെന്നാൽ ഒക്ടോബർ 14, 15, തീക്കുളിൽ പറ്റിഞ്ഞ ചിത്രങ്ങൾക്കുപിന്നെ പരിശോധിച്ച ശാസ്ത്രജ്ഞർ 'ലാൻഡർ' കണ്ടെത്തിയത് ചന്ദ്രോദ്യമോം വേഗം കൂറയ്ക്കാനാകാതെ ലാൻഡർ ഉറപ്പുനേടുന്ന ക്രേസർക്കോർ കഴിഞ്ഞുവീശും. ഓരോ തീക്കുളിയിലും, എന്നാൽ, നാസയുടെ കണ്ടെത്തൽ ആർ.പി. പ്രസിദ്ധീകരിച്ചിട്ടില്ല.

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**പരമ്പരാഗത പോസ്റ്റ്മോർട്ടം**

- ഫോ. പ്രസന്നൻ  
കോഴിക്കോട് ഓഡിയോ കോളേജ്  
ഓണാൻസിക് വിഭാഗം അദ്ധ്യാപകൻ

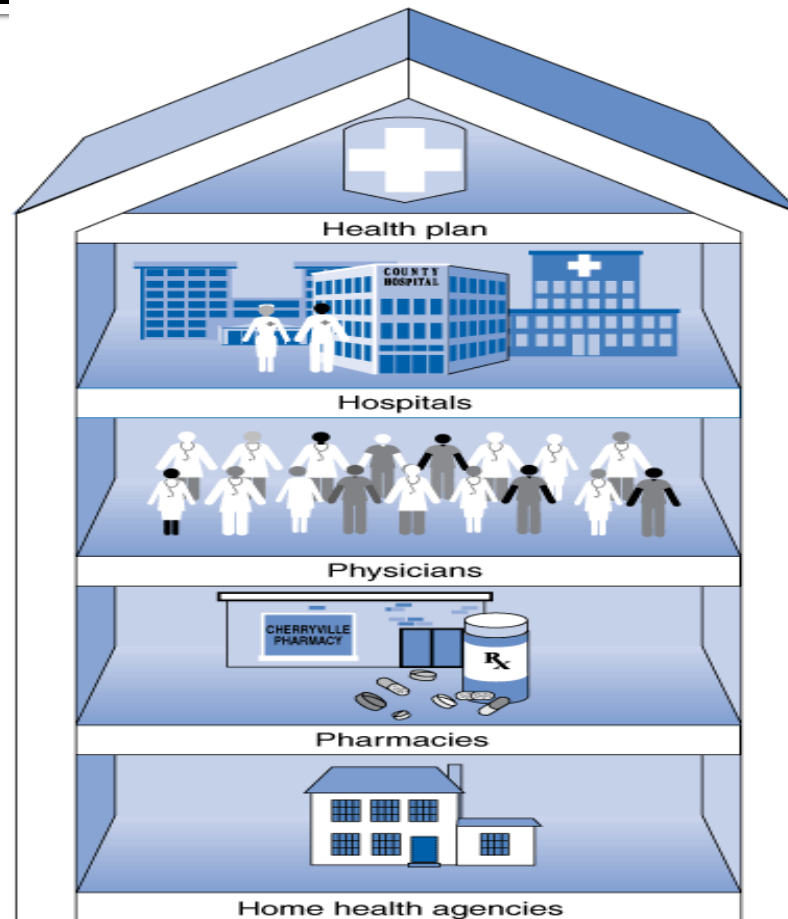
- പുറമേ കാണുന്ന മുറിവുകൾ, മരണാനന്തരം തൃക്കിലൂടെ പേശികളിലും ഉണ്ടാകുന്ന മാറ്റങ്ങൾ എന്നിവ ബാഹ്യ പരിശോധനയിലൂടെ മേഖപ്പെടുത്തുന്നു.
- ശരീരത്തിന്റെ മധ്യ ഭാഗത്തായി കീഴ്ച കിട്ടുന്നത് അടിവുമ്പർവരെ നീളുന്ന മുറിവുണ്ടാക്കി ആന്തരാവയവങ്ങളെല്ലാം പുറത്തെടുക്കുന്നു. ഇതിനോടൊപ്പം തലയേ പുറത്തെടുക്കുന്നു.
- ഹൃദയം, തലച്ചോറ്, ശ്വാസകോശം, ആശയനഗ്രന്ഥി, അഡ്രിനൽ ഗ്രന്ഥങ്ങൾ തുടങ്ങി എല്ലാ ആന്തരാവയവശാസ്ത്രവും വിശദമായി തെളിയിക്കുകയും മേഖപ്പെടുത്തുന്നു.
- ആമാശയവും കുടലും പരിശോധിക്കുന്നതിനുള്ളതാണ് എന്നു മേഖപ്പെടുത്തുന്നതിനായി ഇത്രയും പരിശോധന നടന്നു വന്നിരിക്കുന്നു.
- മരണാനന്തരത്തിലൂടെ എടുത്തുവന്ന കോശങ്ങളിൽ രണ്ടു മണിക്കൂർ

# Are Innovations Being Necessary In Health care???



- Organizational challenges
- Cultural and professional beliefs
- Rising cost
- Increasingly complex care
- Workforce shortage

# Vertically integrated system



Source: Bodenheimer T, Grumbach K: *Understanding Health Policy: A Clinical Approach*, 6th Edition: [www.accessmedicine.com](http://www.accessmedicine.com)

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# Virtual Health Care



- Healthcare delivery relative to the products, services, and processes offered by dot.coms, web-compact disk healthcare content providers, telemedicine, and telecommunications companies.

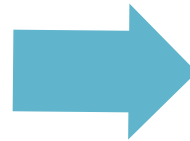


Virtual healthcare delivery is defined by asynchronicity, outsourcing and anonymity. Real or traditional healthcare delivery, by way of contrast, is characterized by the patient and practitioner meeting in real- time, face to face, utilizing a provider organization facility.

# Healthcare Delivery Scenario



Real products/service/processes



Virtual products/service/processes

- These are delivered in real time, face to face and involve provider organization facilities

- These are asynchronous, outsourced and anonymous.



# Model for real- virtual healthcare delivery



	Real patient	Virtual patient
Real provider organization	1. Real patients	2. Virtual patients
	Real provider organization	Real provider organization
Virtual provider organization	3. Real patients	4. Virtual patients
	Virtual provider organization	Virtual provider organization



# Quadrant I

## Real patient: Real provider organization



Patients meet one- on-  
one with real  
practitioners in real  
hospitals or  
practitioner's offices

## Quadrant 2:



# Real provider organization: Virtual patients



Anonymous patients access the provider organization's in house web site for background information on plastic surgery service and rates.



## Quadrant 3:

### Real patient: virtual provider organization



One of the provider organization's young female patients, diagnosed with gestational diabetes, receives online remote monitoring and management of her condition through an outsourced third party company contracted by the provider organization.

# Quadrant 4:

## Virtual patients: Virtual provider organization



The provider organization sponsors an online breast cancer support group offered on a renowned women's health website.



# VIRTUAL NURSING CARE





# Why to adopt virtual Nursing?



- According to a study published in **British Medical Journal**, when nurses' workload exceed “optimal” levels, the chances of a patient safety incident increased by up to roughly 30 percent and the chances of patient mortality spiked by around 40 percent.
- Add that to the human tendency to shirk responsibilities at work when overburdened and the high rate of burnout and that leaves patients in a dangerous circumstance

# Why to adopt virtual Nursing?



- Nurses in hospitals often care for multiple patients at one time amid distractions in the facility. This can take the caregiver's attention away from an individual patient and lead to errors. By using technology and changing the traditional nurse staffing and team model can improve quality and safety in hospitals and other sites of care.(Beckers hospital review Newsletter,May,2019)

# Virtual Nurse: Challenging Roles...







- Registered Nurses are controlling the care delivery virtually



# Examples of providers

- Banner Health
- Mercy Health System
- Mercy's Virtual Care Centre
- Catholic Health Initiatives at St. Elizabeth



- ❖ Banner Health has dramatically reduced ICU mortality, length of stay, and cost through the integration of telehealth technology.
- ❖ Mercy Health System (MHS) has published similar results through the development of its eICU strategy.
- ❖ Mercy's Virtual Care Centre (MVCC) offers a variety of telehealth support to clinicians and patients throughout the system.



# Catholic Health Initiatives

- In 2014, Catholic Health Initiatives launched its trademarked VIC (Virtually Integrated Care) model as a pilot program at Lincoln, Neb.-based CHI Health St. Elizabeth.
- CHI expanded the virtual care program to 20 beds in the adult inpatient unit at St. Elizabeth, and 24 adult inpatient beds at CHI Health Good Samaritan in Kearney, Neb., in 2016.



# How it works?

- The virtual nurse, who coordinates and manages care for up to 12 patients at a time, is the primary caregiver for the patient and has real-time access to patient records.
- He or she is also able to talk to the patient at any time via a two-way camera and virtually makes rounds with physicians on medical-surgical units.
- The virtual nurse is available to help with admissions and discharge planning and has access to lab results, test results and vital signs to closely monitor patient changes.





# How it works?

- Patients can maintain their privacy while having access to a virtual nurse
- The camera is not on the patient all the time. Whenever the nurse is about to "enter the room" there is a doorbell chime a minute before the camera activates.



# How it works?

- Virtual nurses also help keep patients and their families informed. If a patient's family members miss the physician's rounds, they can contact the virtual nurse (with the patient's permission) when they come to the hospital
- The virtual nurse can explain to the patient or family what the physician said and answer any questions. Since virtual nurses consistently communicate with patients as well as the onsite integrated care team, the nurses can identify care issues that need to be addressed and notify the team about these.



# Who can be a virtual nurse?

- The virtual care nurses must have at least a master's degree in nursing.
- They focus on the science behind the patient's care, while managing and coordinating the hospital stay, and provide guidance and leadership to newer on-site nurses and the care team.



# Advantages of virtual nursing

- Technology utilized for tele-nursing.
- It also changes the roles of various team members and provides nursing leadership for non-licensed unit personnel.
- It is high-tech because, of course, the virtual person isn't there physically but it's still high-touch, because the team on the nursing unit is concentrating on personal patient-centered care."

# Advantages of virtual nursing



- Studies have reported that through continuous monitoring by remote clinicians Length of Stay has decreased
- virtual nurses could provide e-sitting services for patients who need to be observed but do not require physical intervention.
- Enables nurses specialization
- Increasing length of career.



# Virtual World



- “sophisticated pieces of software that enable their users to project an identity into a generated three dimensional reality through the use of advanced computer graphics and through the eyes of this digital persona or avatar –interact with other players and wander through this computer generated reality”.



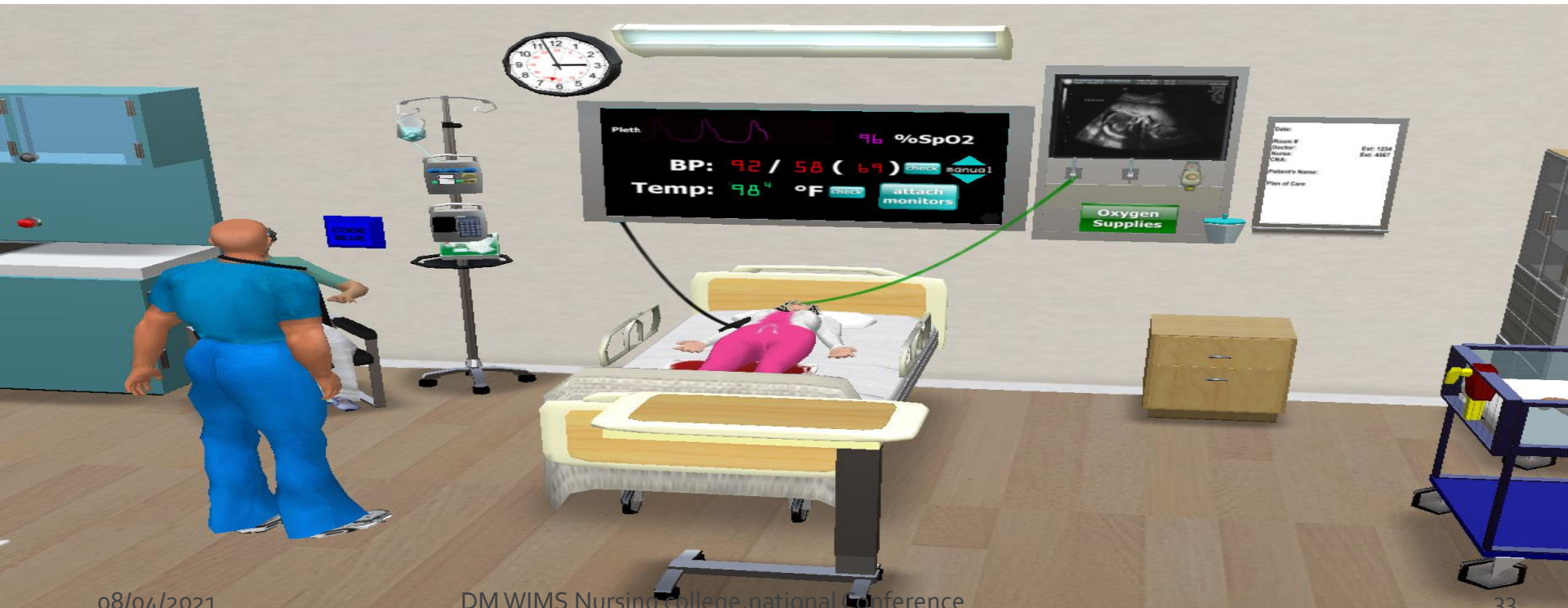
# Virtual Worlds

- This type of care delivery might be especially appropriate to provide education and/or primary care to geographically diverse patient groups.
- VWs point to a new avenue of research to expand the reach of both nursing care and nursing education beyond the physical limits of space and location.



# Second Life: An Example of Virtual World

Second life is used in multiple nursing programs to simulate real encounters real





# Examples of Gadgets to enhance virtually integrated care

# SMART BED





# ALEXA from AMAZON





# Mind-reading exoskeleton

Two surgically-placed implants inside his head were used to read his brain activity and transfer them to a nearby computer, which turned them into instructions for



# Eye-tracking technology



- Eye-tracking technology and “gaze interaction-based” devices have been used to help people with severely limited mobility to control their computer using eye-movement, in the same way able-bodied users navigate with a mouse.
- Quadriplegics can play computer games



# Voice recognition devices – from transcribing speech to controlling a smartphone

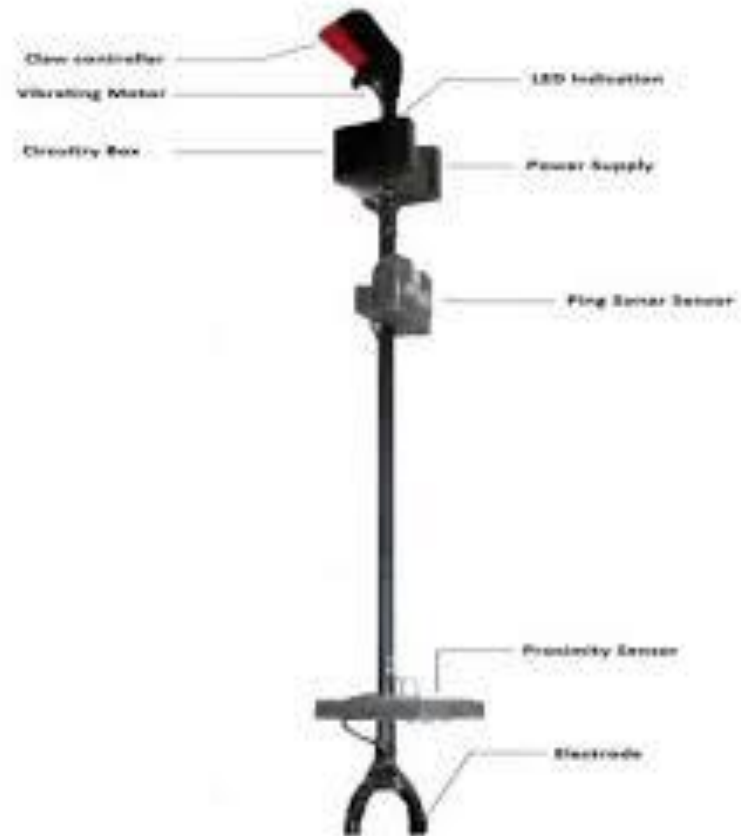


- speech recognition can be used to take almost full control of a computer – including moving a cursor, controlling mouse clicks and even using a printer
- Dragon speech recognition technology
- It commonly takes the form of virtual assistants, with the most well-known versions being Siri, Cortana, Alexa, and Google Assistant.



# Smart Walking stick

- The device will follow a predefined line and will follow wall, will detect obstacle, hole and stair and gives sound notification to the user. The device will act as an assistance of the blind peoples.







# Problems related to VIC

- Hacking
- Phishing
- Data safety issues
- Payment Issues

# Challenging concerns for future....



- What is the core function of the virtual acute care nurses?
- What skill and competencies needed?
- How will the virtual acute care nurses interact with the patient and family, and if so, how?
- With increased consumerism, how will this role and this type of care delivery be received by patients and families?
- Will nurse derive professional fulfillment from a virtual role and therefore remain engaged?
- How will we measure the impact of virtual nursing care?

