

PART A

Awareness, Knowledge, Attitude & Practices Regarding Telemedicine Among Indian Population

PART B

Lean & Six Sigma Green Belt. Application of DMAIC Methodology

Awareness, Knowledge, Attitude & Practices

Regarding Telemedicine

Among Indian Population



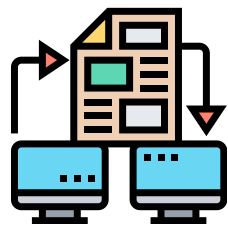
TELEMEDICINE



Telemedicine involves using modern technology and telecommunications for doctors to visit their patients virtually. It can be in the form of live video or through still images captured and saved for their reference on a computer.



Interactive Medicine – which allows patients and physicians to communicate in real-time while maintaining HIPAA compliance.



Store and Forward – which permits providers to share patient information with a practitioner in another location.



Remote Patient Monitoring – which allows remote caregivers to monitor patients that reside at home by using mobile medical devices to collect data (e.g. blood sugar or blood pressure).

WHY TELEMEDICINE IN INDIA

TM has potential to strengthen Indian healthcare system and can increase the reach of remote places to healthcare facilities, so they can avail healthcare services more effectively and conveniently



India's doctor to population ratio is 0.7:1000 which is below the recommendation of world health organization. It should be 1: 1000



74% of specialists are in urban zones that serve the other 28% of the population



Telemedicine is the need of the hour. As the world was grappling with the Pandemic It observed the restricted access of non-COVID-19 patients to specialists and medical clinics



On 25th March 2020 Ministry of Health and Family Welfare, Government of India paired up with NITI Aayog and issued Telemedicine Practice Guidelines, 2020

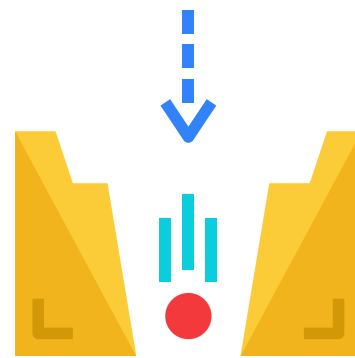


By 2020, telemedicine is expected to be a \$35 billion industry

FACTS

PURPOSE

To find the papers & form basis for KAP questionnaire formulation
To find & review the exploratory studies done on Telemedicine.



GAP IN LITERATURE

No study has been found which was done among general public and taken awareness knowledge attitude & practices regarding Telemedicine together into account. That is why this study was conducted to assess the awareness, knowledge, attitude and practices regarding Telemedicine among population of India.



REVIEW FINDINGS

- Attitude is Majorly Positive
- Awareness and Practices are poor

RESEARCH QUESTION

To asses Awareness, Knowledge, Attitude & Practices regarding
Telemedicine among Indian population

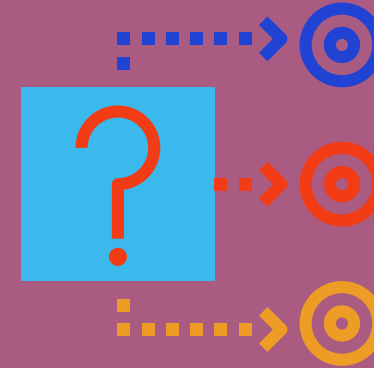
OBJECTIVES

Objective-1



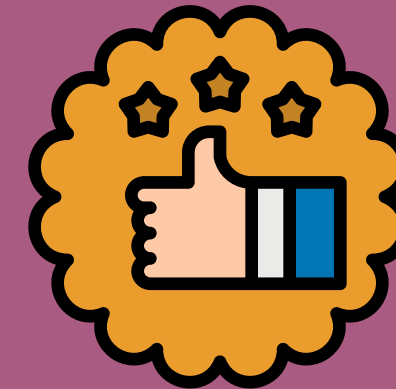
To assess the awareness, attitude, knowledge, and practices regarding TM among population of India

Objective-2



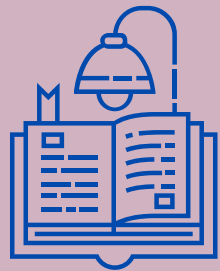
Explore a relationship between Demographic variables and AKAP regarding Telemedicine

Objective-3



To find out the reasons for the poor penetration of TM services in India and provide recommendations for the improvement

METHODOLOGY



01

STUDY DESIGN

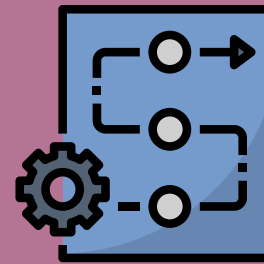
Descriptive cross-sectional study was conducted between May to July 2020



02

DATA SOURCE

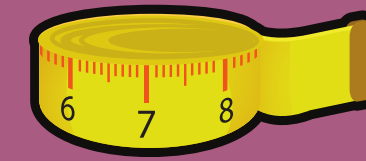
Primary data was collected using self-administered survey questionnaire circulated online as "Google Forms"



03

MATERIAL & METHOD

Questionnaire consisting of 30 question divided into Demographic details and AKAP of TM.
5-Point Likert scale used for responses of AKAP



04

SAMPLE SIZE

221 respondents from different age group, profession and geographic area participated in the survey. 3 did not consented to fill the survey



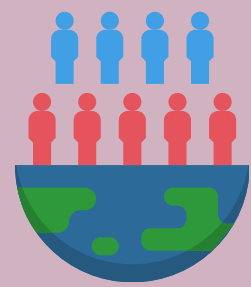
05

ANALYSIS

Descriptive analysis in the form of frequencies and percentage.
CHI-SQUARE test of indendence for finding relationship among Demographic and AKAP using Minitab 17

QUESTIONNAIRE

5-Point Likert Scale



DEMOGRAPHIC

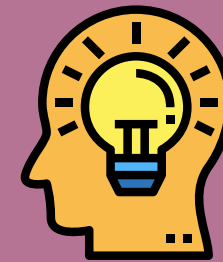
- AGE
- GENDER
- PROFESSION
- RESIDENCE



AWARENESS

INTENSITY

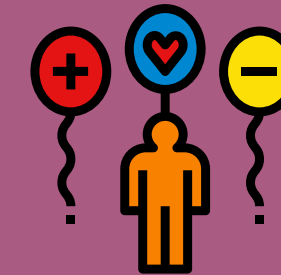
- EXTREMELY
- VERY MUCH
- SOMEWHAT
- NOT REALLY
- NOT AT ALL



KNOWLEDGE

SCALE

- DEFINITELY
- PROBABLY
- POSSIBLY
- PROBABLY NOT
- DEFINITELY NOT



ATTITUDE

LIKELIHOOD

- DEFINITELY
- PROBABLY
- POSSIBLY
- PROBABLY NOT
- DEFINITELY NOT



PRACTICES

FREQUENCY

- ALWAYS
- OFTEN
- SOMETIMES
- RARELY
- NEVER

KEY FINDINGS



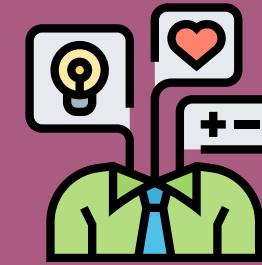
AWARNESS

- More than 50% people were not aware of the term
- 52% people think it takes too much technology to use TM



KNOWLEDGE

- Most of the people(>75%) know that digital consultation saves time, efforts and cost
- 78% knew about availibility in India



ATTITUDE

- >83% people were willing to know more about TM
- 82% were comfortable regarding digital consultation
- 78% think that TM will strengthen Indian Healthcare system



PRACTICES

- Only around 15% people use digital methods to consult doctors
- Even after in person visit only 2.7% people followup digitally
- Only 23% use online medicine delivery

CHI- SQUARE TEST

Hypothesis	Pearson Chi-square vale	P- value	Decision
There is no relationship between the Profession and Knowledge regarding TM	20.541	0.00	REJECT
There is no relationship between the Age and Knowledge regarding TM	21.107	0.00	REJECT
There is no relationship between the Gender and Knowledge regarding TM	6.492	0.011	REJECT

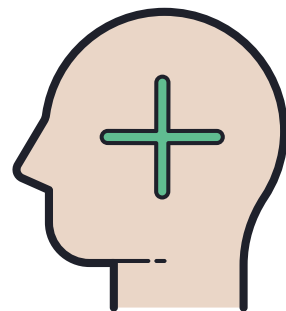
INFERENCES

Knowledge regarding TM is varying according to Profession of people

Person's Age is significantly associated with knowledge regarding TM

Knowledge regarding TM alters with Gender of the person

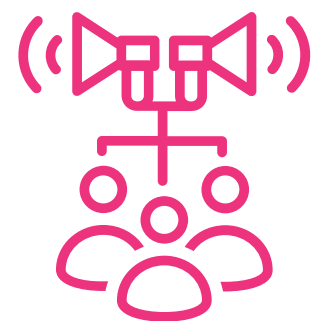
DISCUSSION



Majority of people have good attitude towards Telemedicine, this shows a good sign, as more people want to know about it, so it'll be easy to conduct webinars and sessions of TM

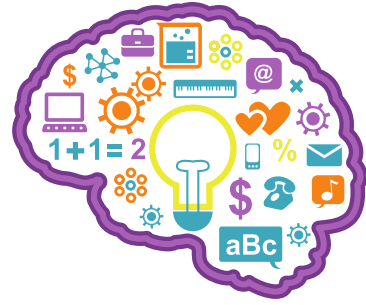


Our study revealed that people are very much willing to learn more about TM
But the awareness is below par & usage of Telemedicine is very low among people.
Most of them had a viewpoint that it requires very sound knowledge of technology to avail the TM services
This could be the probable reason for not practicing TM

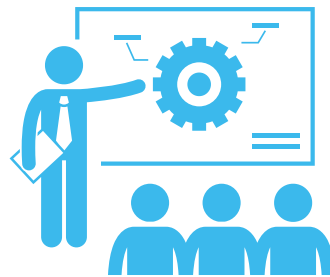


The Gender, Profession & Age were found to be significantly associated with the knowledge regarding TM via Chi-square test of Independence. This suggests that the reach, courses, and other learnings of TM are not available to everyone, or TM is not taught on a wide scale

CONCLUSION & RECOMMENDATIONS



people need to be made aware that it does not take much command on technology to avail the telemedicine services. So, to increase the usage, the entities providing TM services should reach out to more people, make them try the services 2-3 times so that get to know what all services are being provided and they are easy to use.



It is recommended to organize trainings, webinars, courses around TM, as most of the people have very positive attitude to know and learn more about TM



NITI Ayog released the revised guidelines for TM usage in India. These guidelines should be implemented as soon as possible so that the TM practices can increase among Indians



TM knowledge should be provided to everyone and it should be widely accessible by all the demographic profiles, otherwise there will always remain a roadblock in paving the path for TM in India

LEAN & SIX SIGMA

GREEN BELT

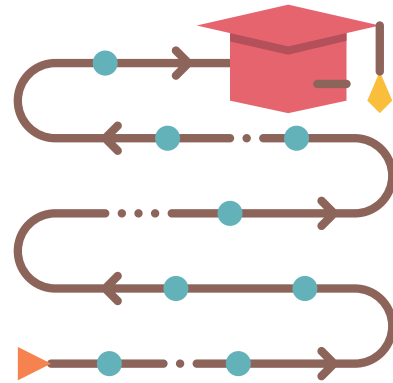
Lean Six Sigma is a blend of two continuous-improvement methodologies that pave the way for operational excellence

OBJECTIVES

- Learn how to understand the current process in statistical forms
- Applying Lean & six sigma method to improve any process and bring more efficiency & effectiveness in the current process



LEAN



- Lean was developed in Toyota as part of the Toyota Production System
- The fundamental driver of Lean is the elimination of waste
- Lean approach uses tools to analyze the business process
- Uses the PDCA—Plan-Do-Check-Act/Adjust—method
- Tools like 8 Wastes and 5S to achieve continuous improvement.

SIX SIGMA

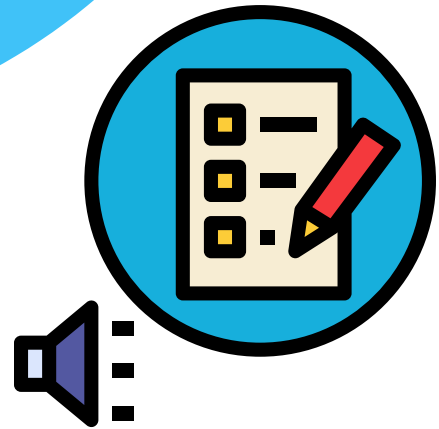


- Six Sigma was first developed at Motorola during the late 1980s
- Approach focused on identifying and eliminating anything that caused variation in the process
- When the variation is gone, the process results can be precisely predicted – every time
- Uses the DMAIC— Define-Measure-Analyze-Improve-Control—method
- Tools like C&E, Pareto & Control charts to achieve continuous improvement

“The Manager's role is to promote process improvement.”

6 Sigma level means max 3.4 DPMO

DMAIC ROADMAP



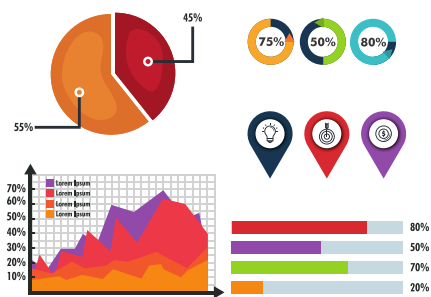
DEFINE

Set direction for improvement



MEASURE

Collect reliable data to understand current process performance



ANALYSE

Identify problem's root causes through process and data analysis



IMPROVE

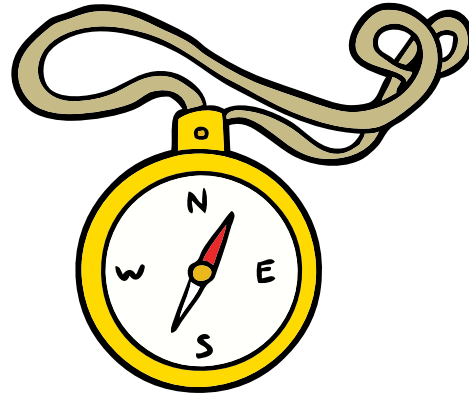
Determine new improved process design



CONTROL

improvement effectiveness over time

DEFINE



Set direction for improvement



Have a high-level view of the process – **SIPOC**

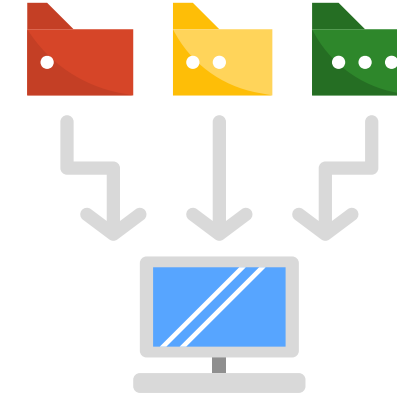


Know the customers' needs and identify their key performance requirements -**CTQs**

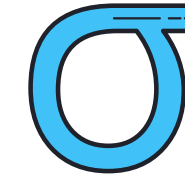


Formalize the charter of the improvement
-Project Charter

MEASURE



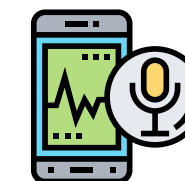
Collect reliable data to understand current process performance



The Sigma of the Process

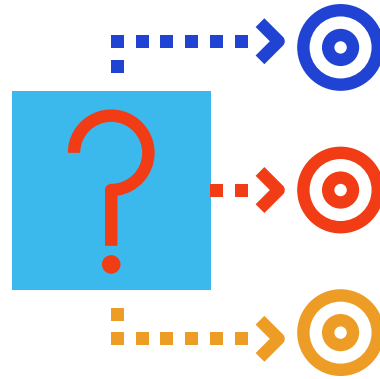


Voice of the customer - **VOC**

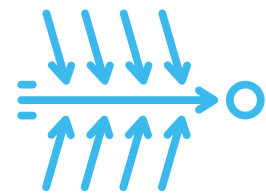


Voice of the process - **VOP**

ANALYSE



Identify problem's root causes through process and data analysis



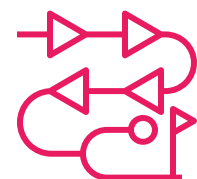
Cause and Effect Diagram



Control Impact matrix

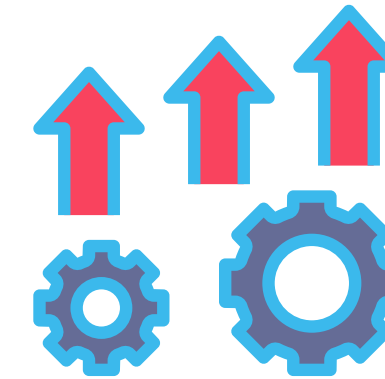


Pareto Chart (80/20 rule)

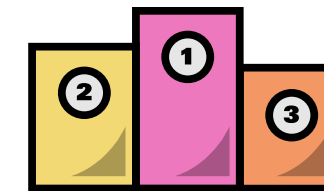


Value analysis using process map

IMPROVE



**Determine new improved process design
Generate solution test & select**



Process benchmarking



Best practices



Brainstorming

CONTROL



Organize process reviews
by Process Owner



Create control tools (documentation
and dashboard)

Ensure improvement over time

Key Learnings



- How to define the current process with upper and lower control limits
- Converting feedback into measurable terms
- Analyzing using statistical tools
- calculating DPMO
- Finding solutions to improve the existing process
- Sustain the gains over the time and keep a check

