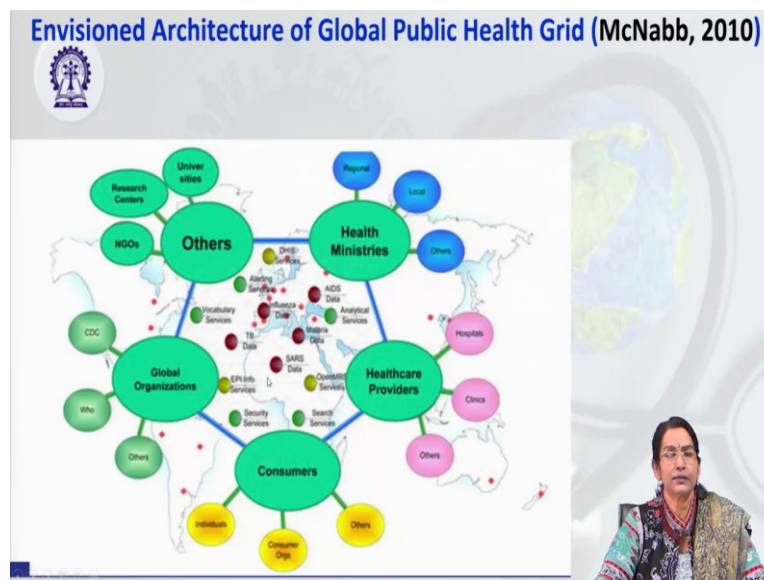


Education for Sustainable Development
Prof. Atasi Mohanty
Department of Humanities and Social Sciences
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Lecture - 22
ESD for Sustainable Healthcare (Contd.)

Hello friends, welcome back to this NPTEL course on Education for Sustainable Development. So, in the last class we are discussing about education ESD for Sustainable Healthcare and we have already discussed up to how to build an health grid, how to build the health grid and what is the health grid that is. So, we will continue with that concept.

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So, this is the; this is the formal architecture of an health grid global public health grid. So, as we have already discussed health grid means it is that it is a kind of network system which not only coordinates with all kinds of the providers, consumers, organizations and ministry etcetera. But also it delivers the services delivers the different kinds of services.

So; that means, its a kind of holistic approach to develop the network model like to coordinate collaborate and provide the services to all the consumers. So, here we can say that how this the network between global organizations those who are already working on health, that is WHO, UNESCO and other kind of things. Then other agencies like the universities resource organizations all the other NGO's also working on this.

Then health ministry of the countries that they both at the central level, local, regional level etcetera. Then health providers those are the private organizations, private hospitals the clinics and other kinds of consultancy services that health care providers and at the end the consumers.

So, consumers like the individual consumers then the consumer organizations and others like corporate other group or team stakeholders all kinds of. So, this is the network between these you can say this say these five domains the network has been built and in between in and within that this network model, then all kinds of services and database are being provided.

So, all kinds of services as well as the database network system has been provided in this where not only you can get the all kinds of the medical data information, but also all information regarding the doctor services available all kinds of analysis of the past viewers data case studies. And you can find out you can explore anything to search the any kind of data and services.

So, this is the kind of model that is called the public global public health grid. So, for our country also this kind of; this kind of grid must be there in our ministry of health etcetera ah, ministry of health both in the central government as well in the state government. So, this actually helps in coordinating and collaborating and taking the quick action when any kind of emergency takes place.

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National Digital Health Mission (NHP 2020)

- **National Digital Health Mission** will help create an **integrated nationwide database of health service providers**, patient records over care continuum and patient consent management using **open API framework**.
- Technology thus aims to ensure proper **integration of available data** from all sources and make it available for **analytics**, and these dramatic changes in **healthcare data processing**, supported by **cloud-based technology ecosystems** and **healthcare innovations**, will provide newer understanding for **health care strategies in near future** and overall well being for entire India in times to come.
- **MISSION:** aims to create a **management mechanism to process digital health data and facilitate its seamless exchange**; develop registries of public and private facilities, health service providers, laboratories and pharmacies; and to support **clinical decision-making** as well as offer services like **telemedicine**.
- **Evidence based, transparent and efficient.**



So, (Refer Time: 02:57). So, National Digital Health Mission that NHP 2020, we have already discussed about this. So, it is again it is the same kind it is also based in that same similar pattern of national health grid kind of. So, its integrated nationwide database of health service providers.

So, this digital health mission is actually it is actually national nationwide database for the health service providers and not for not only it includes the care and patient consent management etcetera, but it is an it has an open application framework API framework. So, here all the integration of the available data are available regarding the health care data processing. And it primarily it is that it has been done through the digital platform that is cloud based technology, IOT internet of things for medical data healthcare. And then all kinds of healthcare innovations healthcare strategies.

So, it is based on primarily on AI cloud based technology ecosystem and IOT. So, all these in data has been integrated and available made available to all kinds of stakeholders in the health platform. So, here the mission is to the mission is to create a management mechanism to process the digital health data and facilities in its and its seamless exchange.

So, that the all the developable data will be there in the digital platform. So, the mechanism can be a management mechanism will be it has been adopted there. So, that is that it is not the seamless processing of all kinds of digital data, health data etcetera. But seamless service also, promptly like promptly whichever whoever wants to know everything and or have the data or search for any kind of things.

So, for consultancy, for clinical decision making, for any kind of medicine especially telemedicine. So, that can be promptly; that can be promptly procured from the database. So, that is why it has its a kind of digital platform for digital platform consisting of all kinds of health data digital health data including all kinds of services, medicines, agencies, doctors, nursing, staff every kind all details a to z.

So, it is we can say again, but again this National Health Mission or the health grid, it should be evidence based. Means case study some of the case studies are there, some of the operation cases are also there, some of the. So it must be very transparent, it must be very efficient and it must be based on evidence; so evidence based so it.

So, all the data are based on evidences and cases and its very transparent, it can be given provided on demand with a seamless service and its very efficient for all future transactions all future activities for the health ministry as well as the private hospitals.

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CURRENT SCENARIO

- India witnessed a **shortage of hospital beds** and **oxygen supplies** in both urban and rural settings during the **COVID 19 pandemic**.
- In a **study by Gautam et al (2021)** which focused to critically examine the existing healthcare facilities and the GOI's response to combat the COVID-19 apropos the NHP 2017 suggests policy options that can be adopted to prevent the further expansion of the pandemic and prepare the country for future health emergency-like situations. The results of this study showed that notwithstanding the several combatting steps on a war-footing level, **COVID-19 has placed an extra burden over the already overstretched healthcare infrastructure.**

The collage at the bottom includes: a bar chart with '11/03 Total: 67', a sign that reads 'The one race, you don't want to win' and 'covid19 infected patients count - India', a photo of healthcare workers in full PPE, a photo of a crowded hospital ward, and a portrait of a woman.

So now, this COVID scenario this COVID scenario actually it has given us its a kind of emerging challenge, it has made us to, but it is it rather it has compelled us to face a kind of disaster. Because it is a in that chaotic situation not only we are falling short of the hospital beds, oxygen supply and the special beds for the COVID 19 patients.

So, its actually created a kind of chaos. So, not only it has created the chaos, but it has also taught us the lessons. So, on the basis of this case study that is the quote by done by Gautam et al in 2021, it is found that the COVID 19 has placed an extra burden. So, extra burden over already overstressed health care system, a health care infrastructure.

Whatever existing health care health care infrastructure we are having, now it actually not only in terms of staff in terms of doctors, in terms of hospital beds, in terms of facilities, in terms of equipments, oxygen supply, medicine all kinds of things. It has created havoc, it has created actually havoc and overstays the this healthcare infrastructure in our country.

So, at the same time data also taught us a lesson. So, now, here you can see this is the you can say this is the data about the COVID 19 patients. And thus this kind of all kinds of sanitization; that means, health workers they have been exhausted over exhausted like anything. And these

are the you know scenario we can say though in the migrant workers, they were leaving the places from the Gujarat and some other places where they used to work. And they are moving towards and that and for them that communication services transport services were not sufficient.

So, how they were traveling by the by walking simply walking? And how many deaths have been done? And how to put them in the quarantine? It was a very difficult phase in that India has already faced, from since 2 2020 to 2021 mid 2021. So, these kind of things actually it gives us a clear picture of how important is the health infrastructure? How important is the health system? So, how we can be we with the digital platform? How we can update our self? So, that we can be better prepared for our future.

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IMPLICATIONS

- Government has implemented **Anganwadi Services, Pradhan Mantri Matru Vandana Yojana** and Scheme for Adolescent Girls under the Umbrella
- **Integrated Child Development Services Scheme (ICDS)** as targeted interventions to address the problem of malnutrition in the country.
- The **POSHAN Abhiyan**, launched in 2018, is India's flagship programme to **improve nutritional outcomes for children, pregnant women and lactating mothers.**
- A better and effectively **planned coordination among ministries and organizations** involved in the area is significantly very important.
- **Realistic database** of population suffering from **nutritional deficiency**, lacking in access to **health infrastructure** and other **health related services** need to be formulated, taking into consideration all segments of society and country.

The slide includes a video inset of a man speaking, and several smaller images: a poster about leveraging technology to strengthen India's fight against COVID-19, a group of people in a meeting, and a poster about COVID-19 vaccine side effects.

So, thus here the implications like all these COVID 19 cases has the implications like all the Anganwadi's government has already implemented the Anganwadi's Pradhan Mantri, Matru Vandana, that is mother maternal care Yojana. Then integrated ICDS schemes, then POSHAN that is food security or POSHAN Abhiyan etcetera plan coordination.

But again a better and effective coordination plan coordination among the all the ministries, state, center and different organizations working on this. It would be very very important for us to move forward. So, realistic database also; that means, the realistic database not the fake, but the realistic database of the population those who are already suffering from the nutritional deficiency or health. That means, our related and the health infrastructure available in the rural

areas, health related services the exact picture of health related services, the shortcomings, the gaps.

So, this should be taking into consideration in all segments of the society in all corners of our country. So, these are some of the clips how; that means, then again from time to time we have to educate our rural people. So, therefore, education and awareness program is very very important. Not only the situations like in the situations like COVID 19, but also in general.

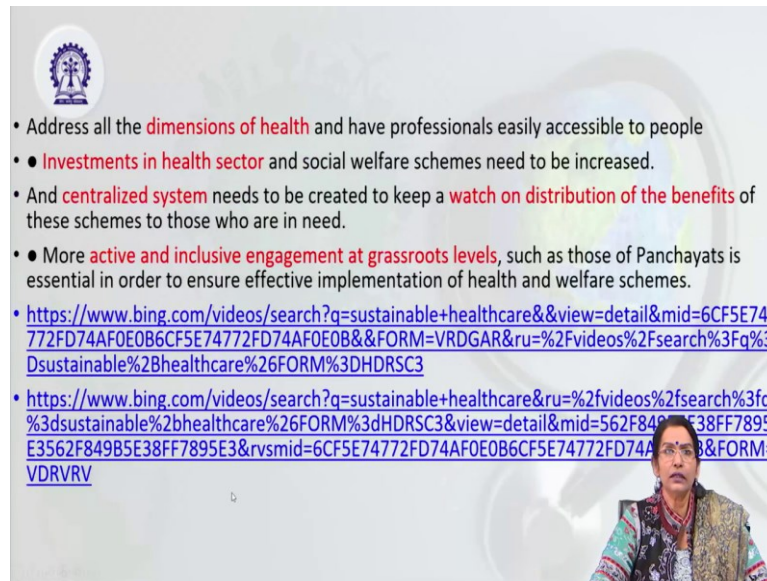
So, the people must be our citizen must be made aware of all how to take care of their own health? How to take the responsibility of our own health? What are the basic health care amenities available service and available and the food habits and the balanced diet and the cleanliness safe drinking water, food security, water security. And all kinds of thing hygienic things hygienic thing all these things should be educated from time to time.

So, education and training and awareness program again that also its again another domain important domain of healthcare system. Not just service providing the services and infrastructure, but communication information and education through different kinds of workshops awareness program is a very very important factor domain.

So, from time to time the not only the medical staff, but others should also be trained from time to time and through. That means, it is a kind should be a kind way like; that means, supply chain kind of the. From the center to the; center to the state, state to the regional, regional to the block level Panchayat level all kinds of.

So, this is the kind of you know from; that means, from center to grass root level, center to grass root level kind of things. So, it should be at every step at every step it should be; that means, that at every step there the vertical should include all the stakeholders at every level starting from the center to the grass root of the village level.

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- Address all the **dimensions of health** and have professionals easily accessible to people
- **Investments in health sector** and social welfare schemes need to be increased.
- And **centralized system** needs to be created to keep a **watch on distribution of the benefits** of these schemes to those who are in need.
- More **active and inclusive engagement at grassroots levels**, such as those of Panchayats is essential in order to ensure effective implementation of health and welfare schemes.

• <https://www.bing.com/videos/search?q=sustainable+healthcare&&view=detail&mid=6CF5E74772FD74AF0E0B6CF5E74772FD74AF0E0B&&FORM=VRD GAR&ru=%2Fvideos%2Fsearch%3Fq%3D sustainable%2Bhealthcare%26FORM%3D HDRSC3>

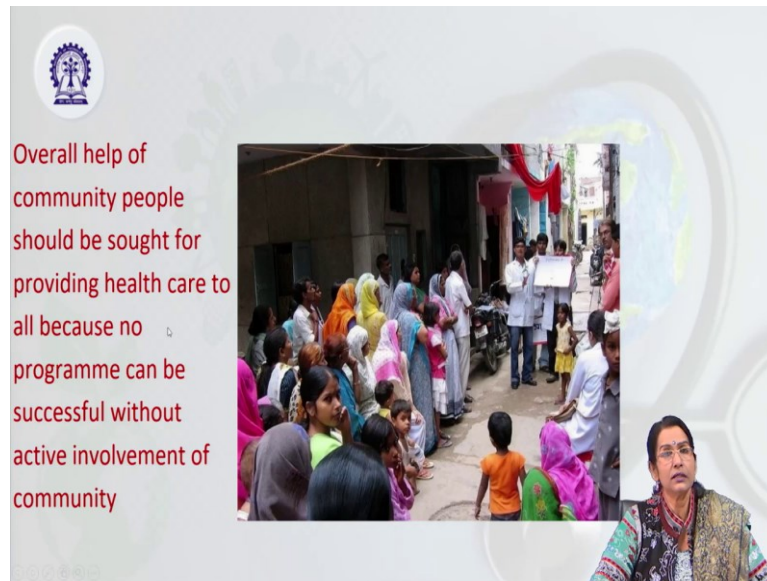
• <https://www.bing.com/videos/search?q=sustainable+healthcare&ru=%2Fvideos%2Fsearch%3Fq%3D sustainable%2Bhealthcare%26FORM%3D HDRSC3&view=detail&mid=562F849E38FF7895E3562F849B5E38FF7895E3&rvsmid=6CF5E74772FD74AF0E0B6CF5E74772FD74AF0E0B&FORM=VDRVRV>

So, all these things; that means, how to address the dimensions of health especially the physical health, mental health, social health, community health. So, and how to in that is? What should be the you know percentage of the investment in the health sector? How to that means, and monitoring and evaluation of our the works being done?

So, distribution of the benefits services resources. So, (Refer Time: 11:22) against active and inclusive engagement of the grassroot level workers grassroot level people. At the Panchayat level that is it is very very important to involve there engage them in the health services being provided at different level.

Even though the education, communication and information comes from the central base from the center. The while it is being disseminated while it is being circulated communicated, then at every step that the trainers should be there the leaders the Panchayat leaders should be there to take care of this or to take forward or to follow up or to monitor these kind of processes. So, these are the some of the we do YouTube links that you can go through for the detail discussion detail analysis.

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So, now let us look at the Indian picture like this is the typical rural picture in our country. So, here overall help of the community people should be sought for providing health care to all. Because the programme can be successful without programmer can, because the no programme can be successful without active involvement of the community.

So, how to engage these stakeholders, villagers and the Panchayat level all the people because through this organizing this kind of workshops, this kind of awareness camp, this kind of community level you know health programmes. Like not only it is not just about the blood donation camp or the eye checkup or the general health check up, but also awareness and (Refer Time: 12:54).

So, continuously this awareness continuous awareness information dissemination, then media use of the media; that means, through multiple through multiple media channels channels circulating the information engaging. So, then just to my first thing is that through in education information communication, we have to remind them. This that how crucial how important this is and to remind them and to; that means, that again and again. So, that they will be alert, so to create that alertness.

Then after creating that alertness how to again actually clarify their doubts and how to educate them through these kind of rigorous workshop and etcetera. So, for this another; that means, for education and ESD and all kind of things another set of that is another setup of a people are

there who are who are publicity, who are for advocacy, who are for counseling, who are for communication, who are for all kinds of.

That means, you can say queries all kinds of analysis of the first FAQs or analyzing the questions queries doubts and all kinds of the you know information; that means, they are seeking the patients they are seeking for different kinds of disease services doctor etcetera all kinds a to z.

So, that is and again that is that information education and ESD cell that is an very very important, it is a big its a most important dimension its most important component of the our health grid. Because only through sharing the information disseminating the information we can energize we can engage our citizens. Because as you know most of our; most of our people they are staying in the rural areas remote areas.

So, and how to bring them to the mainstream how to how; that means, how to provide them the access to have the access to good quality health services gold good quality health cared services and with the affordable cost that is the biggest challenge for the National Health Mission.

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Sustainable Quality Improvement (Sus-QI)

- Quality improvement (QI) is the **ongoing, systematic effort to improve patient outcomes and system performance.**
- Sustainable Quality Improvement (Sus-QI) is a **practical framework** that extends the scope of QI to include:
 - **Ecological sustainability**
 - **Adding social value**
 - **A long-term perspective**
- **Sus-QI has a 4 stages approach** that can be added to any /existing healthcare framework.
 - 1• Set goals** (e.g. minimizing waste in operating theatres, instituting waste segregation streams and recycling)
 - 2• Study the system**
 - 3• Design the improvement effort**
 - 4• Measure impacts**

So, again here we can say along with this health grid we can also introduce a sustainable quality improvement, this is again another strategy. That is sustainable quality improvement that is this it is an again continuous ongoing systematic effort to improve the patient care outcomes.

So, and the systems performance even though we have developed this health grid and the important domains under it, including the information and communication media etcetera. But at the same time our quality improvement in every organization when we talk about the quality check quality improvements similarly the sustainable quality improvements should also be should also be an important part.

So, here the that is; that means, it is based primarily on the practical framework where again we provide the important aspects like ecological sustainability, that is the primary thing that we have already discussed.

Adding social value, how it has the positive impact on the society, that is adding social value. How with increasing time with increasing experience with increasing days? How it adds value social value? And its long term perspective that is for the future. For the future it is perspective the sustainable for the sustainable applications implication in future.

So, this sustainable QI quality improvement program it has primarily 4 stages, it is based on the four stages. That is; that means, taking into three dimension taking into account ecological sustainability, then the your social impact adding a social values and the long term perspective in terms of cost effectiveness and technology and services everything.

So, here we have to go through in the four stages first thing is to setting the goals. Setting the goals primarily you know it includes minimizing the waste management minimizing the waste in thing, how to collect the waste?

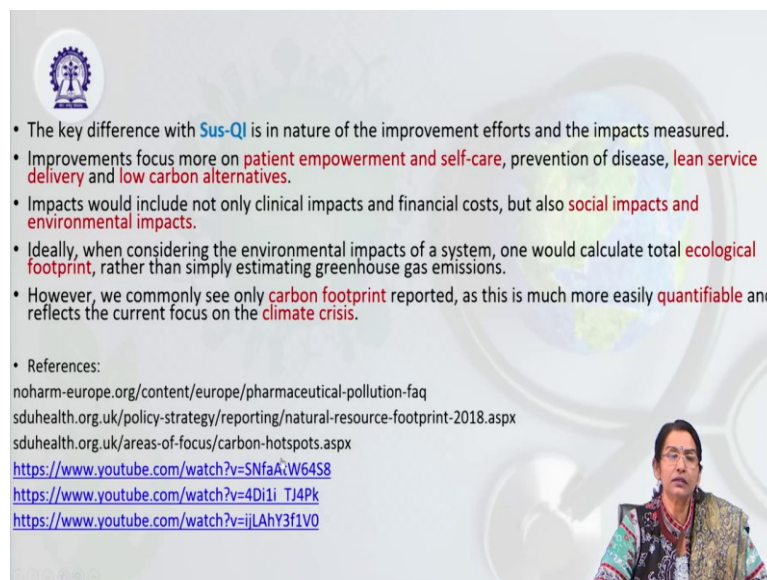
And how to process that waste? So, that it is does not affect the ecosystem that is that is again waste management recycling of the this waste products from the hospital from the healthcare institutes, this is the biggest challenge. And the complete process of recycling should is should be a very important factor.

Then institution waste segregations stream, recycling everything that is the setting that is the major first thing. Then comes to the then we have to study the system and every node even every joint every point there should be a feedback mechanism, there should be monitoring and evaluation thing and the feedback mechanism. Feedback mechanism from the feedbacks from the from all kinds of the stakeholders.

Then we have to focus on design and improvement effort that, after getting the feedback after evaluating the you know the effectiveness and efficiency then we have to improve at every point, we have to improve it improve and make effort to improve it in terms of quality, in terms of service, in terms of financial costs also.

So, then thereafter again from time to time its like just mapping, mapping our health services from time to time. So, there after and from time to time maybe quarterly maybe half yearly, so we have to measure its impact also. Suppose we have adopted a new strategy and we have introduced some kind of new measures for the quality improvement in sustainability sustainable health care. So, then we have to again measure it, map it from time to time.

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- The key difference with **Sus-QI** is in nature of the improvement efforts and the impacts measured.
- Improvements focus more on **patient empowerment and self-care**, prevention of disease, **lean service delivery** and **low carbon alternatives**.
- Impacts would include not only clinical impacts and financial costs, but also **social impacts and environmental impacts**.
- Ideally, when considering the environmental impacts of a system, one would calculate total **ecological footprint**, rather than simply estimating greenhouse gas emissions.
- However, we commonly see only **carbon footprint** reported, as this is much more easily **quantifiable** and reflects the current focus on the **climate crisis**.

• References:

noharm-europe.org/content/europe/pharmaceutical-pollution-faq
sduhealth.org.uk/policy-strategy/reporting/natural-resource-footprint-2018.aspx
sduhealth.org.uk/areas-of-focus/carbon-hotspots.aspx
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<https://www.youtube.com/watch?v=iJLahY3f1V0>

So, here again therefore, the key difference key difference here is that the patient empowerment, self care, lean services and low carbon alternatives; all these are the crucial issues. Now recently I can give one example of that is in Bhuvneshwar that is some hospital was there some hospital was there.

But you know after the another CEO has taken up Doctor S.Das not Das mistress some lady, has taken over the charge of this hospital. And she is from the psychological background psychology background and she did her research only patient care system. And she has completely renovated the whole system health system of that hospital and it has been named as the, it has been renamed rather it has been renamed as ultimate care ultimate care something like that with a new phase with the new phase new look and new system.

So this kind of, so it primarily also depends on the leadership the leadership. So, we mostly the professionals actually hospital management they give focus more on medicine, more on doctor, more on staffs etcetera kind of thing. But they; that means, they miss the misses miss of often; so many critical and crucial things like the patient care system.

Patient care not only the not only the OT facilities and etcetera etcetera patient care; that means, especially in the interpersonal that interpersonal communication, care service care and service providing to. Not only the patient, but to their caretakers as well. So, they because they you know they from time to time they need to be communicated updated regarding the updated about their patients health etcetera. So, that communication rapport building that concern that empathy that social; that means, social you can say social relationship that is also very important factor.

Because it is a major factor is an if emotional factors it is a emotional tributes. So, these so, along with our all kinds of professional things as well as the facilities like infrastructure and all kinds of thing even then. So, this emotional component this service that is service which is primarily based on emotional bonding interpersonal relations is very very important.

So, along with we have along with this concepts like minimizing the carbon footprint then; that means, all kinds of the; that means, recycling process, ecological thing, measuring all kinds of impact environmental impact social values, social impact and economical impact also economical financial cost effectiveness everything.

But at the same time this is the emotional aspect of this health care service is very very important. And the hospitals those who actually the doctors they care nurses they take care and they establish they are very much concerned about the social relation relationship interpersonal relationship and being empathetic and give that kind of emotional support not only to the patient, but to the caretakers of the patients.

So, these kind of hospitals are you know these can they are there they become gradually very much top rated and the preferred and become popular by the; popular by the stakeholders and the patients. So, here we should not ignore that emotional aspect behavioral aspect, effective aspect, care patient care aspect and this communication and from time to time they should be updated comes.

And for this especially for the service orientation, communication, care and this kind of emotional bonding. All the staff starting from the doctors and to the nurses, they should be updated they should be trained, they should be trained for that the all kind this kind of skilled skill soft skills, soft skills and the leadership qualities and the soft.

Especially soft skills for handling communicating and for appraising them updating them with an empathetic attitude, with an empathetic attitude that is the most important thing. So; however, we also commonly see not only the carbon footprint etcetera is reported; that means, the major factor of this quality.

Index improvement index which is that is much more easier to quantifiable to quantify it and the that and primarily the focus is more on the climate crisis and the pollution and the environmental things, but at the same time at the same time I would prefer that we have to focus more on the social values, social value that is the very biggest thing.

Even though it is does not appear to be you know very important etcetera, but actually we are missing the nuances of this health care system, its primarily based. Now even though we spend lot of money we invest lot of money we procure in the equipments and highly professional doctors etcetera, but the nerve center is the nervous system of this health care system is that effective domain, emotional bonding. That is the social system social system social rapport building all kinds of so.

So, we should take care of this is a very crucial very critical issue. So, you can go through these some of the literatures are available some of the YouTube links are also there you can go through it.

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The slide features a logo in the top left corner and a background image of a globe. The text on the slide is as follows:

- **Efficiency and effectiveness of health and care provision**-Community and home based models of care already exist and can be enhanced with technology, new scientific discovery, and the engagement of patients, families, and communities
- **Availability of well trained health and care workers**-This requires vision, leadership, and a determined programme of training and development
- **Costs and economic benefits**-Recent thinking in health has emphasized the importance of measuring the value of procedures and services and of doing, in effect, cost-benefit analyses that compare outcomes with inputs. This approach needs to be extended to the whole system
- **Health and resilience of the population**-Health status is markedly different around the country, largely related to economic and social factors. Children's health and wellbeing in particular have long term effects on the health and care system and its sustainability.
- **Contribution of private caregivers and informal networks** of NGO-care agencies.

<https://www.bing.com/videos/search?q=sustainable+healthcare&ru=%2fvideos%2fsearch%3fq%3dsustainable%2bhealthcare%26FORM%3dHDRSC3&view=detail&mid=1E9A49917E828981DD771E9A49917E828981DD77&&FORM=VDRVRV>

So, that we have whatever we are discussing about efficiency and effectiveness of health care provisions are also. So, how the how to enhance efficiency and effectiveness healthcare provision through the, you know different we can also adopt some of the community or home based models are already available.

So, and already that already available, but again it can be enhanced with the technology, new scientific discovery engagement etcetera. So, again availability of the well trained health workers care workers and their training and training and development from time to time they have to. And for those especially for the communication education and awareness that is the for the units should be very very strong robust and updated.


So, cost and economic benefits also important and health and resilience of the population. Again besides the treating that diseases communicable and uncommonly diseases, but how to strengthen the health general health system health of the population. Through, how to enhance the resilience? How to strengthen their health conditions? That also that can also be the especially the children's health and the maternal health.

So, ministers would also provide some kinds of you know medicines as supply nutritional, you know supplements you know these Anganwadi's these midday meal schemes and the ICTS schemes they used to do it even initial council is doing it. But during this lockdown period it has been affected like anything.

So, that is that it has to how to recover it how to. So, we must have an another opening another platform or avenue so; that means, even in the situation of the disaster such pandemics or kind of any natural disaster. How to then? What are the alternate solutions? What are the; what are the alternate channels through which these health supplements can be provided to them?

So, even the even for the private care givers are also the informal like those nurses; that means, the private nurses and the NGO's those who are having the informal networks who actually they are not even though they are not certified. But all the time the workers are not certified, but they also informally they also provide this kind of private care givers for the senior citizens especially in the cities and the towns. So, all these are the different different aspects of this quality improvement quality sustainable quality improvement parameters.

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- **Integration of policy and practice with other sectors** and building healthy and health creating communities-Employers, educators, designers, planners, and others also determine health status and have responsibilities for protecting and promoting health.
- **Public and political acceptability and support**-the economic benefits derived from the health and care system and the potential for multi-sectoral partnerships to provide the environment to improve health and health services.
- **ESD to develop a Balanced Lifestyle-**
 - A balanced lifestyle means being in control of all aspects of our life, such as:
 - 1. Physical
 - 2. Mental
 - 3. Spiritual
 - 4. Family
 - 5. Financial
 - 6. Work and Career
 - 7. Social

So, now I want to stop it here I want to stop it here. Now in the next class that then we will continue with other kind of aspects of the quality improvement sustainable quality improvement.

Thank you.