Manage TB
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Lecture – 59
Airborne Infection Control in Tuberculosis Session 02

Welcome to session 2; in this session I will be talking about infection control in high risk settings, household contacts and TB patients.

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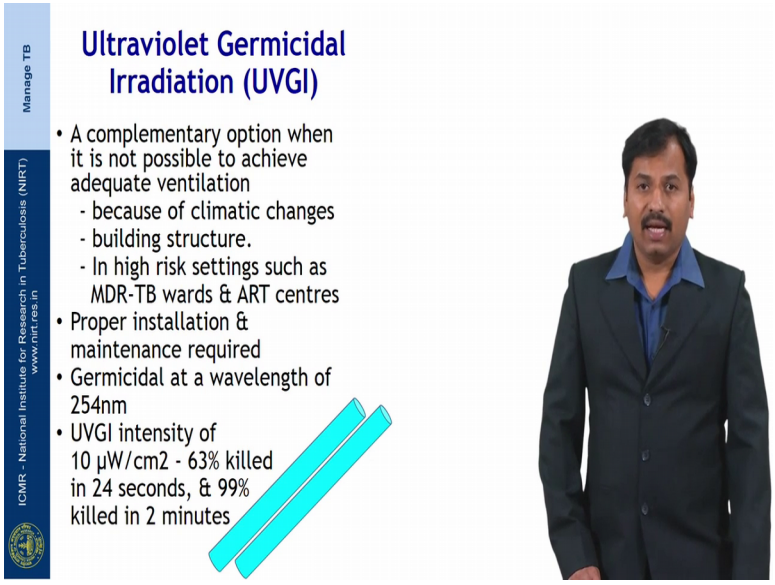

Ultraviolet Germicidal Irradiation it is one of the effective equipment which is available to control a infections in high risk settings like MDR-TB ward. It is a complementary option when it is not possible to achieve adequate ventilation because of climatic changes, including building structures, in high risk setting such as MDR-TB wards and ART centres.

Proper installation and maintenance is required if we install this UVGI germicidal at a wavelength of 254 nanometres and the UVGI intensity of 10 microwatt per square centimetres for first 24 seconds kills 63 percent of bacilli and if it is continue for next 2 minutes 99 percent of the infectious bacilli are killed. So, it is a very effective that can be implemented in high risk settings.

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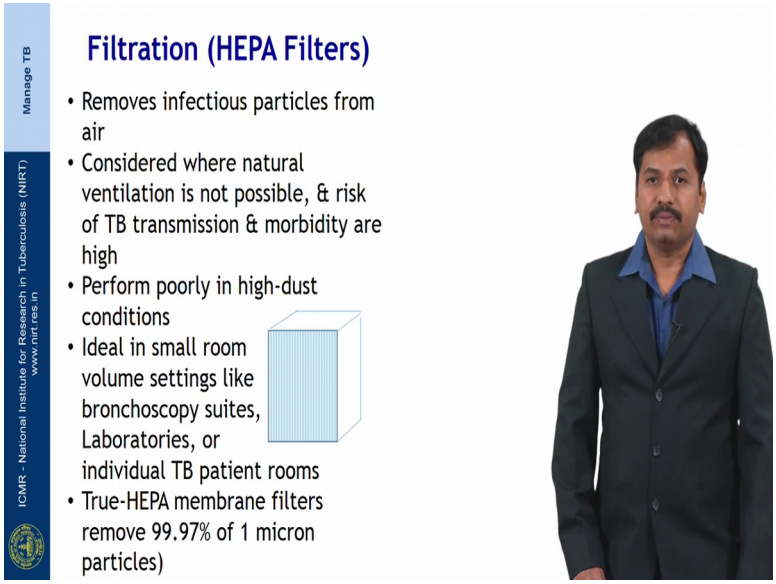

HEPA filter; HEPA filter is a kind of high efficiency particulate air filter; it removes infectious particles from air and it is considered where natural ventilation is not possible and risk of TB transmission and morbidity are high.

Especially it is not advisable in high dist high dust conditions, but it is ideal in small room settings like the bronchoscopy suites, the laboratories and individual TB patient rooms. True-HEPA filters or true-HEPA membrane filters remove 99.97 percent of particles less than 1 micron in size

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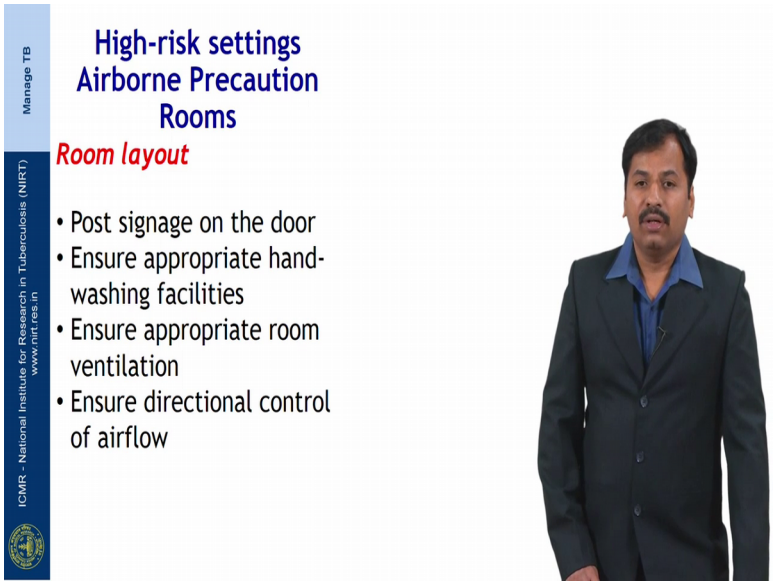

High risk settings; for any high risk settings they should be air airborne precaution rooms and the room layout should include signage's on the doors; ensuring appropriate hand washing facilities at that places, ensuring appropriate room ventilation and ensuring directional control of airflow.

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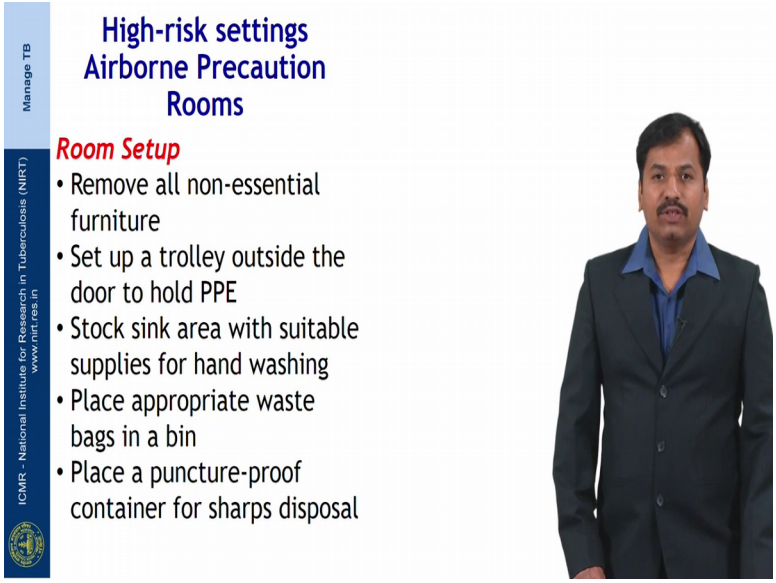

And in the room try to remove all non-essential furnitures; set up a trolley outside the door to hold personal protective equipment, stock sink areas with suitable supply of hand washing bags or hand washing materials and place appropriate waste bags in a bin, place a puncture proof container for sharp disposal.

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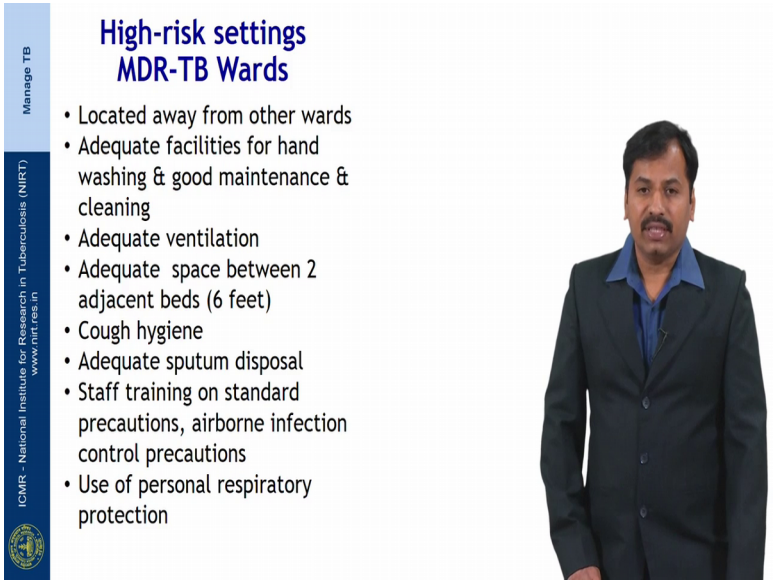

In high risk settings like MDR wards try to have this ward located away from other wards preferably adequate facilities for hand washing and good maintenance and cleaning has to be emphasized at this places. They should be adequate ventilation and adequate space between 2 adjacent beds which is at least 6 feet.

All the patients in the ward should be thought about cough hygiene and they should maintain and practice cough hygiene. There should be facility for adequate sputum disposal all the staff should be trained on standard precautions, airborne infection control precautions and all the staff should be using some kind of personal respiratory protection materials.

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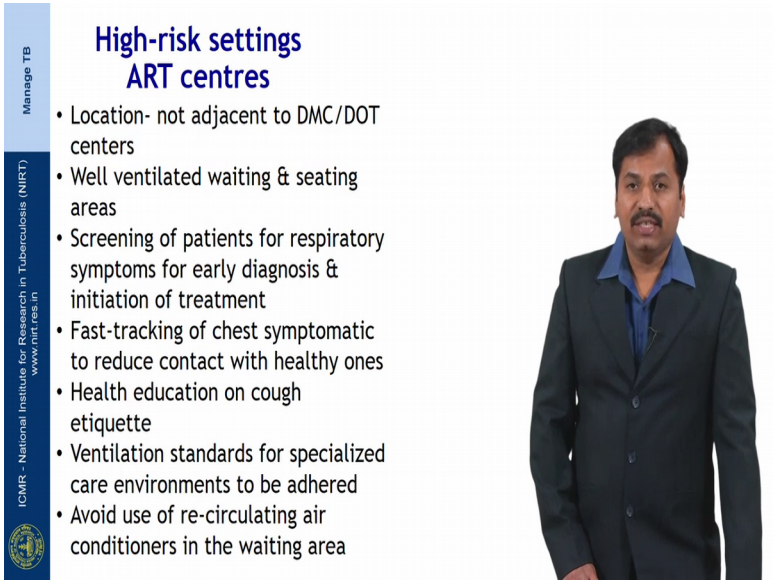

Similarly, in high risk settings like ART centres; they should also be located away from DMC and DOT centre that is the Designated Microscopy Centre or a Directly Observed Treatment. Patient treatment centres where TB patients frequently come to give the sputum or take the tablets and it should be placed at a place where there is well ventilation or well ventilated area for sitting and waiting.

Screening of patients for respiratory symptoms for early diagnosis and initiation of treatment has to be done as I mandate for administrate to control. And all this patients who have symptoms should be fast tracked to reduce the contact with the healthy people.

Health education of cough etiquette has to be given to all the patients in the waiting area; ventilation standards for specialized care environment has to be other to and try to avoid the usage of re-circulating air conditioners in these waiting areas. The chances of the same bacilli circulating through and through in the room and that may lead to more infections.

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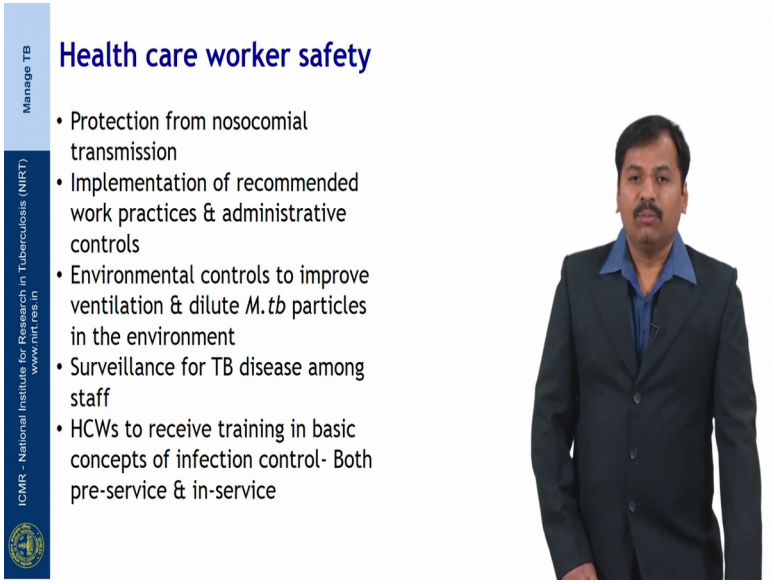

Health care worker safety; protecting the health care worker is of paramount importance. Protection from nosocomial transmission, implementation of recommended work practices and administrative controls, environmental controls to improve ventilation and dilute mycobacterium tuberculosis particles in the environment, surveillance for TB disease among staff and health care workers to receive training in both basic concepts of infection control both pre service and in service.

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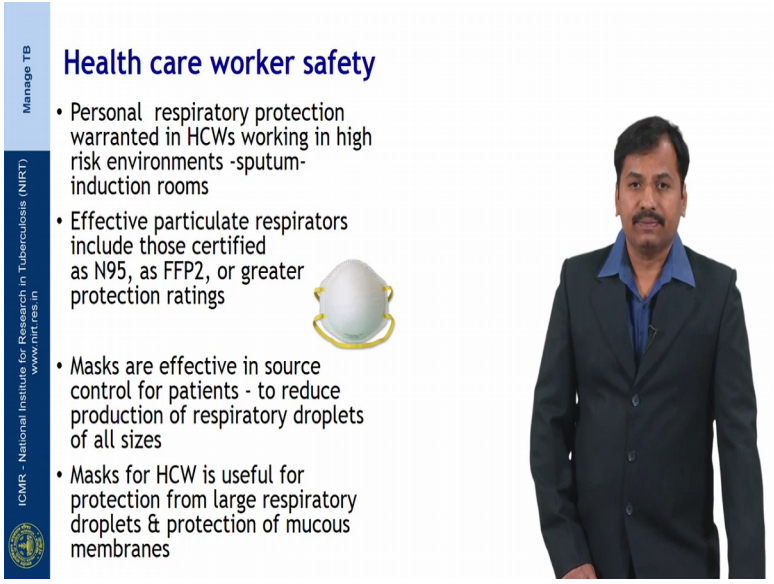

The personal protective equipment warranted in health care workers in high risk environment and like sputum and the induction rooms; they should be using this effective particulate respirators which includes those certified as N 95 mask or as FFP 2 mask or greater protection rating mask.

This is a N 95 mask which is usually used; mask are effective in source control for patients to reduce the production of respiratory droplets of all size whereas, the mask for health care workers is useful for protection from large respiratory droplets and protection of mucous membrane of the health care worker.

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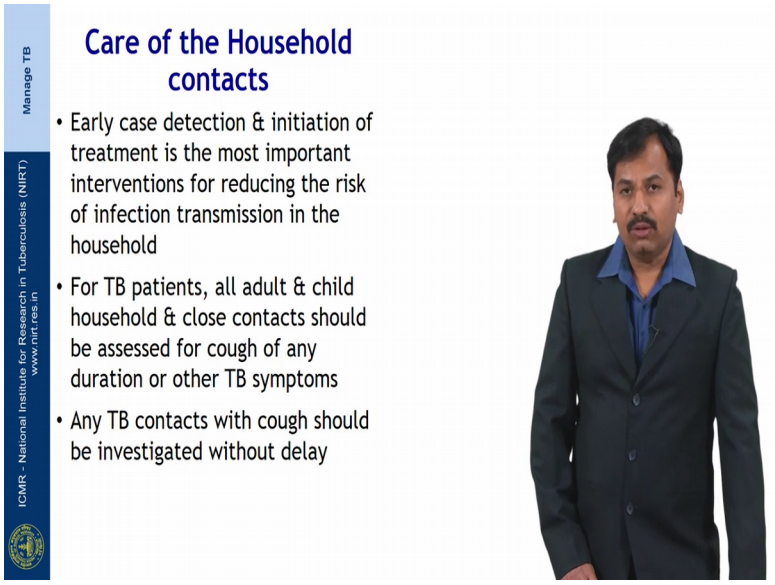

Care of the household contacts; early case detection and initiation of treatment is the most important intervention for reducing the risk of infection transmission in the household.

For TB patients all adult and child households and close contacts should be assessed for cough of any duration or any other TB symptom, any TB contact with cough should be investigated without any delay.

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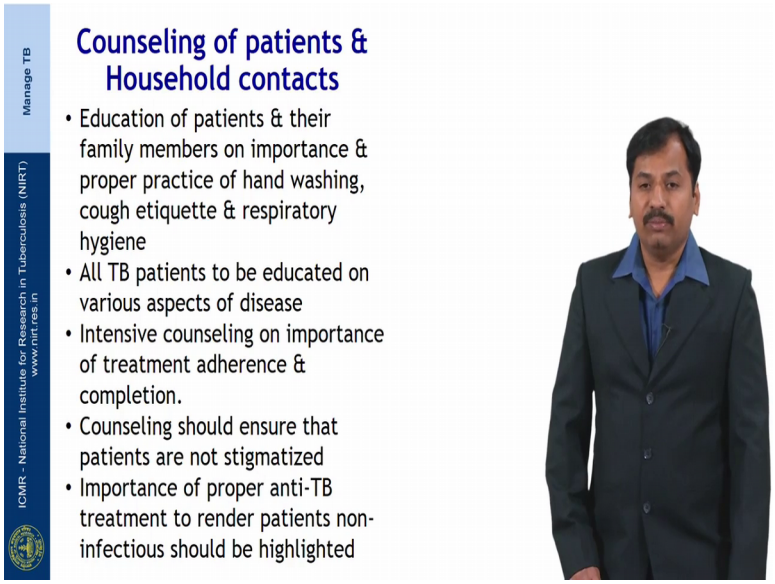

Counselling of patients and household contacts; education of patients and their family members on importance and proper practice of hand washing, cough etiquette and respiratory hygiene is of very much important to the family members that has to be practiced.

All TB patients to be educated on various aspects of disease, intensive counselling has to be given on importance of treatment adherence and completion. Counselling should also ensure that patients are not stigmatized in their society or the community and importance of proper anti-TB treatment to render patients non infectious should be highlighted.

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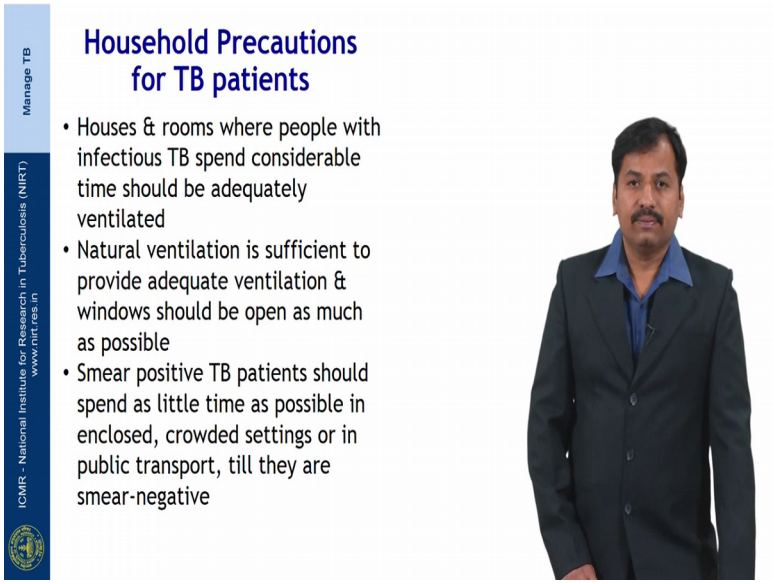

Household precautions for TB patients; houses and rooms where people with infectious TB spend considerable time should be adequately ventilated. Natural ventilation is sufficient to provide adequate ventilation and windows should be open as much as possible. Smear positive TB patient should spend as little time as possible in enclosed in that crowded settings or in public transport till they are smear negative.

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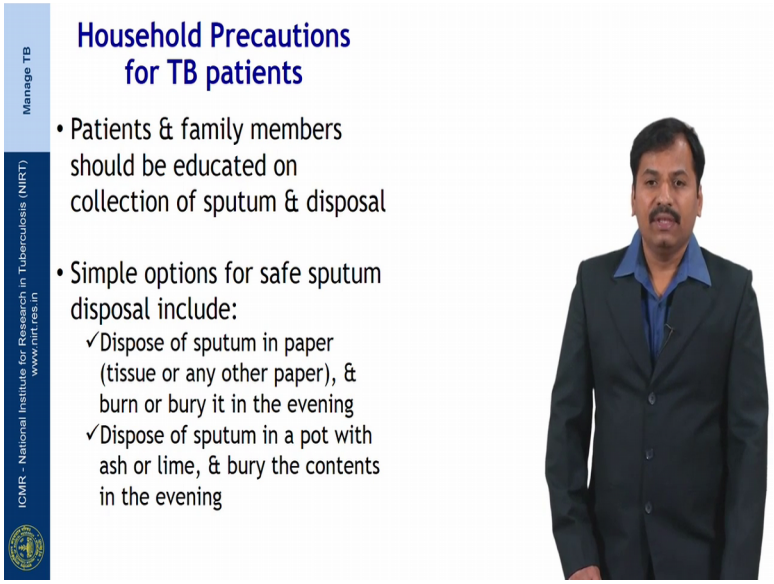

Patients and family members should be educated on collection of sputum and disposal. The simple option for safe sputum disposal includes; disposing the sputum in paper or

tissue paper or any other paper and burn or burry it in the evening or dispose of sputum in a pot with ash or lime and burry the contents in the evening.

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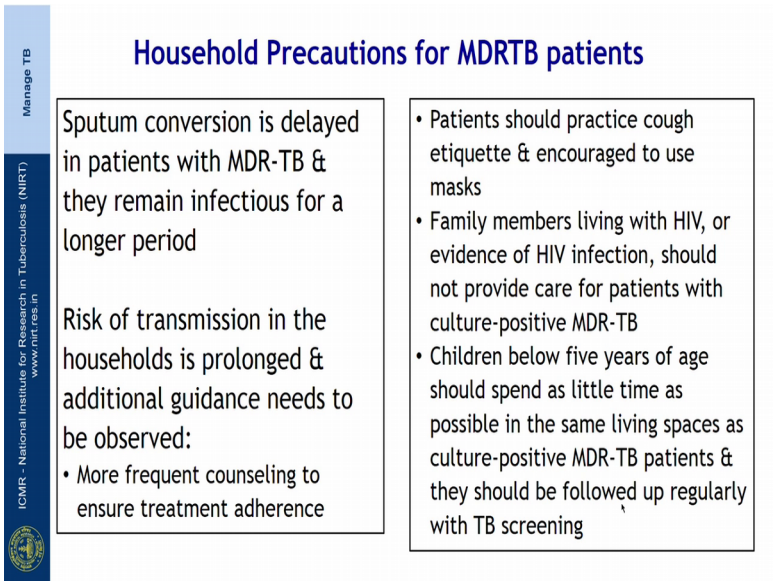

There are some special household precautions for MDR TB patients because sputum conversion is delayed in patients with MDR TB and they remain infectious for a longer period. Risk of transmission in the households is prolonged and additional guidance needs to be observed.

More frequent counselling to ensure treatment adherence because it is a long treatment of 24 months treatment adherence should be emphasized. Patient should practice cough etiquette and encouraged to use the masks.

The family members living with HIV or evidence of HIV infection should not provide care for should provide should not provide care for patients with culture positive MDR TB, because the likelihood of the patients family members contacting the disease is very high in this setting.

Children below 5 years of age should spend as little time as possible in the same living spaces as culture positive MDR TB patients and they should be followed up regularly with TB screening.

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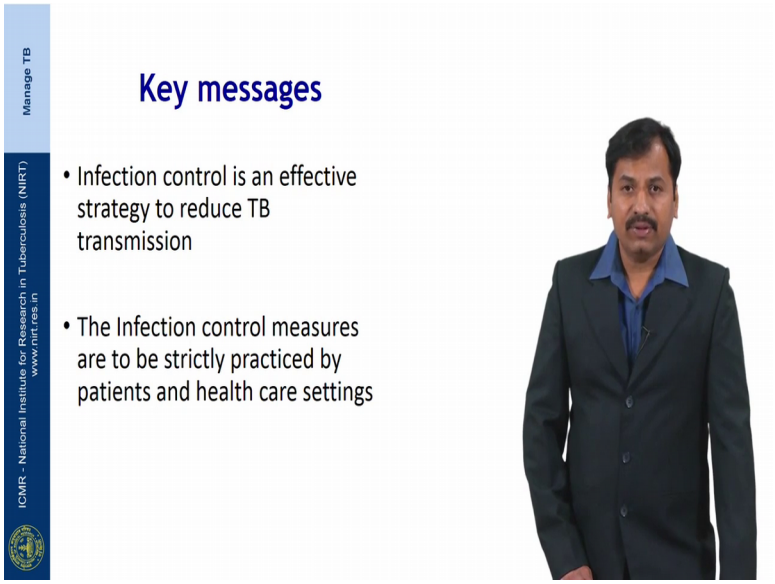

The key messages are infection control is an effective strategy to reduce TB transmission. The infection control measures are to be strictly practiced by patients and health care settings.

So, I have come at the end of the session in this session we have discussed the airborne infection precaution measures in high risk settings and the protection measures for the household contacts, health care workers and TB patients.

Thank you.