

### 3.3 Contact surveillance

Contact with a person affected by contagious TB poses a high risk for infection and tuberculosis. This risk depends on some "key factors" among which are mainly distinguished by:

- the degree of infectivity of the patient;
- the characteristics of the person who has been in contact with the patient;
- the environment in which the contact occurred.

Inter-human TB transmission is airborne. For these reasons, **as soon as a TB case is suspected**, both through laboratory and clinical surveillance, **contact search must be activated immediately**. This search involves a close co-operation between the diagnostic and treatment centres and the territorial prevention units in order to guarantee timely information regarding the clinical as well as epidemiological aspect of the case (identification of clusters, involvement of communities at risk). In this sense, it is important to note that the interviews for the contact search must be started regardless of the result of culture laboratory tests if the medical history and other findings are compatible with the definition of a suspected case of contagious TB.

The M.D. on the "Management of contacts and TB in the care sector" (2009) specifies that, for each patient diagnosed with a form of respiratory TB, the **degree of contagiousness** of the disease must be determined on the basis of the anatomical site (lung, larynx), the microbiological (positivity of sputum for acid- alcohol -resistant bacilli -AARB- to microscopic examination) as well as radiological (presence of cavitations) findings and other elements that favour contagiousness (frequent cough, singing, frequent social contact in confined spaces).

Furthermore, it specifies that, in compliance with LG CDC 2005 (LIV 2), the **period of contagiousness** recommended for contact search must be related to the characteristics of the tubercular disease:

- If the patient has symptoms, positivity of sputum and right chest X-ray cavitations, contacts should be sought up to 3 months before the onset of symptoms or the first TB-compatible disease. This does not exclude, however, that in special circumstances a longer period of contagiousness should be considered.
- If there are no symptoms, positivity of sputum or radiological cavitations, contacts should be sought up to 4 weeks prior to suspected diagnosis.

**Transmission by children** aged <10 years is uncommon; contact search in paediatric cases fundamentally aims to trace the sick adult who has infected the child. The search for persons infected by children should only be undertaken under special circumstances, because children and young adults with primary TB are rarely contagious; they will be considered as such if they show "adult" disease characteristics (e.g. productive cough and cavity lesions or extended lesions of the upper lobe on the right side of the chest).

In general, the active contact search tends to detect, in a few stages, subjects with disease and those with infection; moreover, in view of the rapid disease progression in HIV-positive contacts, the knowledge of this co-infection means an immediate change in the management of the investigation and in the administration of a chemoprophylaxis.

The transmission of tubercle bacilli occurs mainly through the **volume of air** shared between patient and contact; if this volume is reduced (e.g. small rooms) the transmission is high. Similarly, the degree of renewal or recirculation of air shared between patient and contact influences the transmission and, therefore, the probability of contact infection.

In general, all persons who have shared volumes of air with a contagious TB subject must be considered potentially infected contacts. However, the characteristics of the contact modify the chances of infection both increasing and decreasing them.

Close cohabitation generally increases the chances of transmitting the tubercle bacillus, but a previous tuberculosis infection (showed by previous positivity to TST) reduces the risk of infection.

**Host factors**, such as the degree of susceptibility of the subject determined by plausibly genetic or immunological causes such as: race, advanced age and immunological status, can instead increase the probability of infection.

The **period of contagiousness of the index case** can be considered concluded when the following criteria are met:

- administration of an effective treatment for a period equal to or greater than two weeks (whose efficacy is confirmed by means of drug sensitivity tests on M. Tuberculosis);
- reduction of symptoms;
- microbiological response (reduction of the bacillary number on the direct sputum).

The actions for the identification of the infection cases and their treatment are coordinated by the ATS.

It is important to note that, since these are interventions concerning the protection of the health of the community, they must be provided free of charge; when they are not provided directly by the ATS, their prescription will be performed by physicians of specialised structures, having an agreement with the DIPS.

For that purpose, the ATS identify the healthcare structures with which they stipulate special agreements for the provision of services, which will be reported in Circular 28 / SAN, only for the purposes of quantifying benefits but not their remuneration.

The organisation (prescription and booking-access, performance of the examination, delivery of the report) and the reporting will be defined in a protocol drawn up by the DIPS in agreement with the providing structures and will take into account the dual need to favour the user's compliance and guarantee the timeliness of the response.