**Additional file 1. Detailed information for the offline test**

1. Which of the following statement about tuberculosis (TB) are true? (Multiple choice allowed)

□ A. TB is a chronic infectious disease caused by Mycobacterium tuberculosis bacteria (MTB)

□ B. MTB generally affects the lungs, but also can affect other parts of the body

□ C. Pulmonary tuberculosis (PTB) is a Class A infectious disease and should be reported within 24 hours after discovery.

□ D. PTB is mainly spread to others through droplets when patients cough, sneezes or speaks loudly

□ E. Don't know

2. What is the main route of transmission of TB? (Single choice)

□ A. Air

□ B. Blood

□ C. Fecal-to-oral

□ D. Mother-to-child

□ E. Don't know

3. Which kind of patients are the main sources of TB transmitted? (Single choice)

□ A. Active TB cases with sputum smear positive result

□ B. Active TB cases with sputum smear negative result

□ C. Tuberculous pleurisy

□ D. Extrapulmonary tuberculosis

□ E. Don't know

4. Which of the following statement are true for TB patients to reduce TB transmission? (Multiple choice allowed)

□ A. Turn your head to avoid facing others when coughing or sneezing

□ B. Cover nose and mouth with hands or tissues when coughing or sneezing

□ C. Spitting the sputum into container with cover

□ D. Wear a face mask when talking to others

□ E. Don't know

5. What are the symptoms of PTB mainly include? (Multiple choice allowed)

□ A. Cough for 1-2 weeks

□ B. Cough ≥2 weeks

□ C. Hemoptysis or blood sputum

□ D. Thick mucoid sputum

□ E. Don't know

6. Which 3 types of sputum samples are used for smear microscopy? (Single choice)

□ A. Spot sputum, morning sputum and night sputum

□ B. Morning sputum, noon sputum and night sputum

□ C. Spot sputum, morning sputum and noon sputum

□ D. Spot sputum, noon sputum and night sputum

□ E. Don't know

7. What types of sputum are the qualified sputum samples generally? (Multiple choice allowed)

□ A. Cheese-like sputum

□ B. Brown blood sputum

□ C. Blood sputum containing a small amount of fresh blood

□ D. Saliva

□ E. Don't know

8. When sputum samples should be sent for sputum smear conversion test after initialing the treatment? (Single choice)

□ A. At the end of the second, fifth and sixth month of treatment

□ B. At the end of the second, third and sixth month of treatment

□ C. At the end of the third, fifth and sixth month of treatment

□ D. At the end of the second, fourth and sixth month of treatment

□ E. Don't know

9. What type of mask should medical staff wear when collecting sputum samples from TB patients? (Single choice)

□ A. No mask

□ B. Gauze mask

□ C. Surgical mask

□ D. Medical Protective Mask (N95)

□ E. Don't know

10. Which of the following are common first line anti-TB drugs? (Multiple choice allowed)

□ A. Rifampin, Rifapentine (R)

□ B. Isoniazid (H)

□ C. Ethambutol (E)

□ D. Streptomycin (S)

□ E. Don't know

11. Which of the following statements are true for TB’s treatment regimens? (Multiple choice allowed)

□ A. 2HRZE/4HR for patients who were newly diagnosed with PTB

□ B. 2HRZES/4HRE for relapse patients

□ C. 2HRZE/6HR for patients who were newly diagnosed with PTB

□ D. 2HRZES/4HRE for relapse patients

□ E. Don't know

12. What principles must be followed in anti-TB treatment? (Single choice)

□ A. Initialing the treatment promptly, using combined regimen

□ B. Initialing the treatment promptly, using combined regimen, right dose and regular treatment

□ C. Prompt, combined regimen, regular treatment and full course

□ D. Prompt, combined regimen, right dose, regular treatment and full course

□ E. Don't know

13. Are the following statement about TB treatment true? (Multiple choice allowed)

□ A. Most patients could be cured if they comply the standardized regimen

□ B. Discontinuation of TB treatment may lead to treatment failure or drug resistance

□ C. Drug-resistant PTB are difficult, time-consuming and expensive to treat

□ D. Patients can stop taking medicine if the symptoms of TB resolve

□ E. Don't know

14. Which of the following adverse effects might be caused by anti-TB drugs? (Multiple choice allowed)

□ A. Chest pain, chest tightness

□ B. Nausea, vomiting and poor appetite

□ C. Elevation in liver transaminase

□ D. Itching of skin

□ E. Don't know

15. According to the existing policy, which of the following TB patients can enjoy free treatment and management? (Multiple choice allowed)

□ A. Newly diagnosis patients with smear-positive results

□ B. Relapse diagnosis patients with smear-positive results

□ C. Newly diagnosis patients with smear-negative results

□ D. Relapse diagnosis patients with smear-negative results

□ E. Don't know

16. Which of the following examination are National free examination for suspected symptoms of PTB? (Multiple choice allowed)

□ A. Sputum smear examination

□ B. Sputum culture examination

□ C. Chest X-ray examination

□ D. Chest CT examination

□ E. Don't know

17. What are the National preferential policies for confirmed TB patients? (Multiple choice allowed)

□ A. Free full course of anti-TB combination drugs

□ B. Free sputum smear for three times

□ C. 25 yuan will be exempted for chest X-ray at the end of the treatment

□ D. 100 yuan will be exempted for thrice liver function, blood routine and urine routine detection

□ E. Don't know

18. Which places patients can enjoy the national free policy? (Single choice)

□ A. TB Prevention and Control Specialized Institutions or Designated Hospitals

□ B. Community health service center

□ C. General hospital

□ D. Specialized hospitals

□ E. Don't know

19. What are the responsibilities of village doctors in the three-level service delivery system? (Multiple choice allowed)

□ A. Publicize TB prevention and control knowledge to villagers and patients

□ B. Transfer PTB suspects to the local CDC for further examination

□ C. Contact and track patients who has not been referred to local CDC

□ D. According to regimens, village doctors should management TB patients including taking medicine regularly and send qualified sputum samples on time

□ E. Don't know

20. Which of the following patents should be referred for further examination (Multiple choice allowed)

□ A. Patients who had chronic cough ≥2 weeks

□ B. Patients who coughing up blood or blood-stained sputum

□ C. Patients who had symptoms of PTB such as fever, night sweat, chest pain or emaciation for unknown reasons

□ D. Patients whose chest X-ray results were consistence with active TB

□ E. Don't know

21. What should the village clinic do after receiving the notice from the superior professional organization to manage TB patients? (Multiple choice allowed)

□ A. Visit patients within 72 hours as first home follow-up

□ B. Village doctors or family members of patients should be identified for supervising TB patients during treatment

□ C. Publicize patients and their families on TB prevention and control knowledge

□ D. Inform patients to see a doctor in time in case of aggravation of illness and serious adverse reactions

□ E. Don't know

22. What are the main methods of treatment and management for TB patients in China? (Single choice)

□ A. Patient should stay in a hospital during treatment

□ B. Patient should stay in a hospital during early stage of treatment

□ C. Patient should be isolated during treatment

□ D. Patient should stay in home and supervised by doctors or family members during treatment

□ E. Don't know

23. What should village doctors do when they monitor TB patients? (Multiple choice allowed)

□ A. Health education

□ B. Check their medication

□ C. Check the color of patient’s urine

□ D. Remind patients to take medicine on time

□ E. Don't know

24. Who can manage TB patient during treatment? (Multiple choice allowed)

□ A. Medical staff

□ B. Family members

□ C. Volunteers

□ D. Patients themselves

□ E. Don't know

25. Which of the following statements are true after infected with MTB? (Multiple choice allowed)

□ A. Infection with MTB will definitely develop into active TB

□ B. Most people do not have any symptoms or will not develop into active TB

□ C. Whether active TB occurs depends on many factors such as the immune state of the body and the virulence of MTB.

□ D TB caused by initial infection with MTB is called primary TB

□ E. Don't know

26. Which of following statement are true about BCG? (Multiple choice allowed)

□ A BCG vaccine is currently the only vaccine used to prevent TB

□ B. Newborns should be vaccinated BCG within 24 hours of birth

□ C. There are no possible to get TB after BCG vaccination

□ D. There are still possible to get TB even after BCG vaccination.

□ E. Don't know

27. Which of the following population are the high-risk groups for TB? (Multiple choice allowed)

□ A. Close contacts of TB patients

□ B. Diabetic patients

□ C. Patients with coronary heart disease

□ D. Smokers

□ E. Don't know

28. What should family members do when there are TB patients at home? (Multiple choice allowed)

□ A. Care for patients and do not discriminate them

□ B. Urge Patients to Actively Treat

□ C. Give patients enough nutrition and urge them to give up smoking and alcohol.

□ D. Do good job of disinfection and isolation, and timely inspection of close contacts

□ E. Don't know

29. What is the meaning of PPD positive result? (Single choice)

□ A. It means the PPD positives once infected with MTB

□ B. It means the PPD positives have been vaccinated with BCG

□ C. It means the PPD positives are TB patient

□ D. It means the PPD positives need further inspection is required

□ E. Don't know

30. Which statements about latent infection of MTB are true? (Multiple choice allowed)

□ A. Latent infected persons have no suspicious symptoms and signs of PTB

□ B. Chest X-ray film of latent infected persons are normal

□ C. Latent infected persons are not contagious

□ D. Most latent infected persons will not develop active PTB in their lifetime

□ E. Don't know

**Additional file 2. Comparison of demographics between participants who had two tests results and those only have first test result**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Village doctor’s participant two tests** | **Village doctors only participant the first test** | ***p* for χ2 test** | **OR (95%CI)** |
| **Total** | **467** | **127** |  |  |
| **Gender** |  |  |  |  |
| Male | 342 (73.23) | 68 (53.34) | **<0.001** | **Ref.** |
| Female | 125 (26.77) | 59 (46.46) |  | 1.78 (1.15-2.74) |
| **Age** |  |  |  |  |
| ≤40 years | 109 (23.34) | 38 (29.92) | 0.179 |  |
| 41-50 years | 191 (40.90) | 41 (32.28) |  |  |
| 51-60 years | 84 (17.99) | 20 (15.75) |  |  |
| > 60 years | 83 (17.77) | 28 (22.05) |  |  |
| **Years of education** |  |  |  |  |
| ≤ 9 years | 27 (5.78) | 11 (8.66) | 0.222 |  |
| 10-12 years | 340 (72.81) | 83 (65.35) |  |  |
| >12 years | 100 (21.41) | 33 (25.98) |  |  |
| **Income per month** |  |  |  |  |
| ≤2500 RMB | 248 (53.10) | 72 (56.69) | 0.472 |  |
| >2500 RMB | 219 (46.90) | 55 (43.31) |  |  |
| **Working years as village doctor** |  |  |  |  |
| ≤25 years | 237 (50.75) | 71 (55.91) | 0.303 |  |
| >25 years | 230 (49.25) | 56 (11.09) |  |  |
| **With a history of close contact with TB patients** |  |  |  |  |
| Yes | 352 (75.37) | 63 (49.61) | **<0.001** | **Ref.** |
| No | 115 (24.63) | 64 (50.39) |  | 2.56 (1.15-5.72) |
| **Number of TB patients ever managed** |  |  |  |  |
| 0 | 140 (29.98) | 68 (53.54) | **<0.001** | **Ref.** |
| 1-5 | 146 (31.26) | 28 (22.05) |  | 1.03 (0.44-2.41) |
| >6 | 181 (38.76) | 31 (24.41) |  | 0.93 (0.40-2.18) |

Abbreviation: CI, Confidential interval; OR, odds ratio; TB, tuberculosis; WeChat SA: WeChat subscription account

\* Sum might not always equal to total due to missing data