LABORATORY ASSESSMENT REPORT

KAZAKHSTAN

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List of abbreviations

BPPS	Best Practice Performance Site
CAR	Central Asian Republics
CDC	Centres for Disease Control and Prevention
CFU	Colony Forming Units
DOTS	Directly Observed Treatment Short course
DST	Drug Susceptibility Testing
DRS	Drug Resistance Surveillance
EQA	External Quality Assessment
GP	General Practitioner
IUATLD	International Union against Tuberculosis and Lung Diseases
LJ	Löwenstein-Jensen
MDRTB	Multi Drug Resistant Tuberculosis
MGIT	Mycobacterium tuberculosis Growth Indicator Tube
MMR	Mass Miniature Radiography
MOH	Ministry of Health
NRL	National Reference Laboratory
NTP	National Tuberculosis Programme
NTBC	National Tuberculosis Centre
OTBD	Oblast TB Dispensary
PHC	Primary Health Care
QA	Quality Assurance
SES	Sanitary Epidemiological Surveillance
SRL	Supranational Reference Laboratory
SVA	Selskaya Vrachebnaya Ambulatoria
SVP	Selskiyi Vrachebnyi Punkt
TB	Tuberculosis
TBD	TB Dispensary
TOR	Terms of Reference
WB	World Bank
WHO	World Health Organization

Executive summary

The Laboratory assessment mission to Kazakhstan took place from November 22-December 3 and was carried out by Marija Joncevska, Project HOPE Regional Lab Specialist and Bekzat Toksanbayeva , Project HOPE Laboratory Specialist for Kazakhstan . The assessment team visited a total number of 11 laboratories, five of them working within Karaganda Penitentiary System, The National Reference laboratory, Almaty Oblast TB laboratory, one lab at City TB Dispensary, one Raion TB laboratory, two smear microscopy labs at PHC facilities and one smear preparation point.

Kazakhstan adopted the WHO DOTS strategy in 1988. It was introduced through the Presidential Decree # 3956, declaring TB to be a national emergency. In 1999 DOTS strategy was introduced in the penitentiary system , where TB case notification and mortality rates were 20-30 times higher.

TB laboratories in Kazakhstan are organised in a network, which consists of three levels. The first level laboratories, smear microscopy centres are situated in Rayon TB dispensaries and in Primary Health Care facilities (330 at PHC and the rest at TB facilities: dispensaries, TB cabinets, TB hospitals) . The number of smear laboratories was significantly reduced after adoption of DOTS strategy, from more than 700 to 489, but is still is too large to be regularly monitored and supervised.

Smear microscopy is officially recommended as a basic method for TB diagnosis (technical Prikaz #323/471), but is still not used as a method for passive case finding. A large network of smear microscopy labs was designed in order to make smear microscopy accessible for entire population, but the quality of the services has not yet achieved the satisfactory level. About 50% of smear laboratories use microscopes with poor quality. The existing system for EQA (rechecking of all positive slides and 10% negative) did not identify weaknesses and does not contribute to quality improvement of smear microscopy.

Culture examination is adopted as a “gold” standard for laboratory diagnosis and is done for all TB cases. Senior staff from the NRL prepared technical guidelines for culture and DST with detailed instructions for technical procedures, but did not include procedures for quality assurance and instructions for interpretation of DST results. Tests for identification of Mycobacterium tuberculosis are done only at NRL. Oblast laboratories perform DST for all positive cultures without identification of Mycobacterium tuberculosis. Drug resistance survey has not been conducted yet and the real magnitude of MDR problem is still not known. It is estimated that MDR rate among new TB cases is about 15%

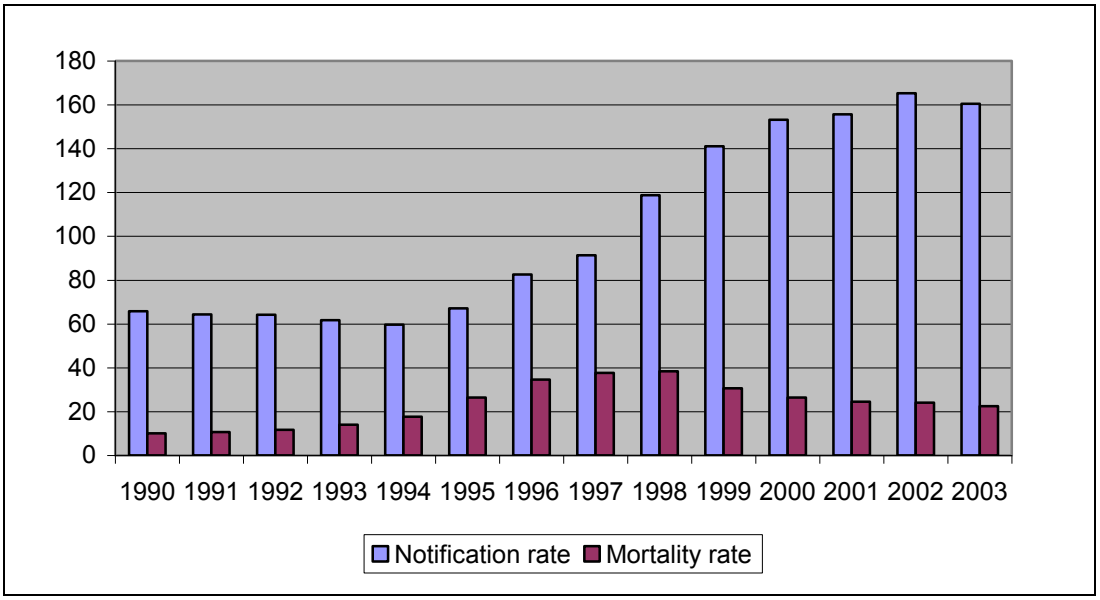
The most serious threat for the Program is introducing of second line DST countrywide for the purpose of implementation of DOTS Plus Program. The methodology for testing has not been yet standardized on international level and second line drug DST is still not considered as a reliable information which can be used for tailoring individual treatment regiment for MDR TB patients.

Laboratory service in penitentiary system in Karaganda has achieved remarkable results in terms of organization and quality of lab examination, monitoring and proper recording and reporting. Adoption and implementation of blinded rechecking program for EQA would contribute to further improvement and achieving the level required to serve as a model and training centre for other oblasts.

1 Background

Kazakhstan is one of the largest, but at the same time one of the least populated countries in the world. A total population is estimated to 14.9 million and a territory of more than 2.7 million square km (6.2 inhabitants per square km). Tuberculosis is one of the major health problems in Kazakhstan. From 1994 to 1998 TB incidence doubled from 59.7 to 118.8 per 100 000 and then steadily increased to 152.6 until 2000 and 165.2 per 100,000 in 2002. Slight decrease was noticed in 2003, but it is still the highest of all Central Asian Republics

Fig. 1. Case notification and mortality rates in Kazakhstan 1990 – 2003



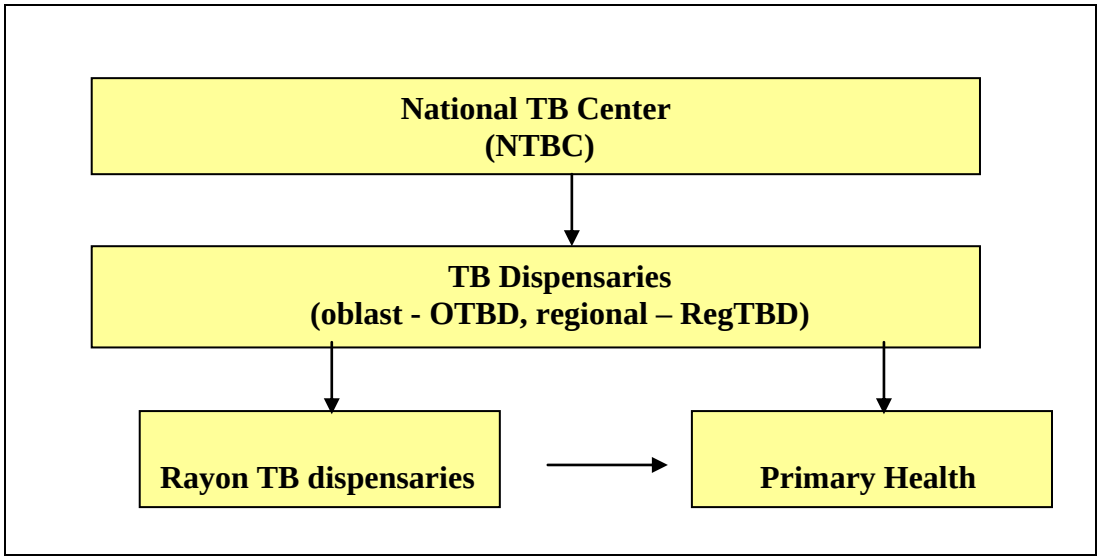
In order to control TB situation, Kazakhstan adopted the WHO DOTS strategy in 1988. It was introduced through the Presidential Decree # 3956 "Priorities for Improvement of the Health Status of Kazakhstan's People" and declared TB as a national emergency.

DOTS strategy was also introduced in the penitentiary system in 1999 where TB incidence and mortality are 20-30 times higher. In May 2001, the technical Prikaz #323/471 "On measures for improvement of TB service of the population of the Republic of Kazakhstan" was issued. This document includes the National guidelines for laboratory diagnosis, which are strictly followed by all laboratories in the country.

Tab.1 Case notification in the Republic of Kazakhstan 2003

Cases	Pulmonary TB			Extrapulm TB	Total
	Smear +	Smear –	Subtotal		
New cases	8662	14305	22967	976	**23943**
Relapses	3065		3065		**3065**
Total	11727	14305	26032	976	**27008**

Fig. 2. Organizational structure of the TB Control service of the Republic of Kazakhstan.



2 Laboratory assessment visit

The Laboratory assessment mission to Kazakhstan took place from November 22-December 3 and was carried out by Marija Joncevska, Project HOPE Regional Lab Specialist and Bekzat Toksanbayeva , Project HOPE Laboratory Specialist for Kazakhstan . The assessment team visited a total number of 11 laboratories, five of them working within Karaganda Penitentiary system; The National Reference laboratory; Almaty Oblast TB; one lab at City TB Dispensary; one Raion TB laboratory; two smear microscopy labs at PHC facilities and one smear preparation point.

2.1 TOR for the assessment visit

1. To assess the current structure and functioning of the TB laboratory service in Kazakhstan
2. To identify problems and needs of the laboratory service in order to improve the laboratory performance and support the implementation of internationally accepted standards for laboratory diagnosis
3. To assess the functioning of the TB laboratory service in penitentiary system and the level of collaboration with the National TB laboratory network.
4. To evaluate the quality of TB laboratory service in Almaty Oblast and give recommendations for upgrading the level of the service to the level required for BPPS (Best Practice Performance Site)

2.2 Findings

2.2.1 Organizational Structure of TB laboratory service

TB laboratories in Kazakhstan are organised in a network, which consists of three levels. The first level laboratories, smear microscopy centres are situated in Rayon TB dispensaries and in Primary Health Care facilities (330 at PHC and the rest at TB facilities: dispensaries, cabinets, TB hospitals) . The number of these laboratories was significantly reduced after the adoption of DOTS strategy, from more than 700 to 489, but is still is too large to be regularly monitored by 20 intermediate level laboratories. The intermediate (Oblast) level perform the same diagnostic procedures as the NRL, including: smear, culture and DST. Oblast Reference laboratories are also involved in quality control and monitoring. The third level laboratory, National Reference Laboratory (NRL) is situated at the National TB Centre (NTBC). This laboratory had a leading role is establishing the laboratory network in the country and upgrading the level of TB laboratory service. On the request of NTP, this laboratory recently started DST for second line drugs. Although the methodology for testing has not been yet standardized on international level, the NTP plans expansion of second line testing to Oblast laboratories. The results from the testing will be used for countrywide implementation of DOTS Plus program.

Tab.2. Organizational structure of TB laboratory service in Kazakhstan

Technical functions	Number of TB laboratories at different administrative levels					
	National		Oblast		Rayon	
	TB facilities	PHC	TB facilities	PHC	TB facilities	PHC
Smear	1	-	20	-	159	330
Culture	1	-	20	-	39	-
DST	1	-	20	-	-	-

In addition to this three level TB laboratory structure, the NTP established a network of smear preparation points in SVA and SVP for preparing and sending smears to PHC laboratories. The total number of smear preparation points countrywide is not known, but due to the poor results in case finding, their role in the network should be reconsidered.

Tab. 3. Organizational structure of lab service in Almaty Oblast

Technical functions	Oblast		Rayon	
	TB facilities	PHC	TB facilities	PHC
Smear	2	2	7	20
Culture	2	-	-	-
DST	2	-	-	-
Smear preparation points				114

Tab. 4. Microscopy laboratories in PHC per Oblast in Kazakhstan:

Oblasts	Number of laboratories	Population size in thousands (2003)
Akmola	19	748.7
Aktobe	20	672.4
Almaty	17	1573.1
Atyrau	14	457.1
East-Kazakhstan	31	1455.6
Zhambul	49	985.9
West-Kazakhstan	29	604.0
Karaganda	15	1331.0
Kostanay	30	913.3
Kyzylorda	20	607.7
Mangistau	5	349.5
Pavlodar	13	745.4
North-Kazakhstan	24	674.7
South-Kazakhstan	15	2150.4
Almaty city	26	1174.8
Astana city	3	510.3
Total	330	14953.9

2.2.1.1 Organizational structure of TB laboratory service in Penitentiary system in Karaganda

The laboratory service at the Penitentiary system in Karaganda consists of 8 smear microscopy labs and two culture and DST labs (AK159/11 and AK159/17) working together at the same facility. Although they belong to the same sector, each laboratory has own budget and procures all lab materials separately. That is the main reason why the number of laboratories could not be rationalized according to the real workload and the transport of sputum samples could not be considered as a solution. The annual workload per microscopy lab varies from 15 – 35 smears per week. The smear positivity rate is the lowest in laboratories performing less than 20 smears per week (2,2%), which might be result of a too low workload, insufficient to maintain the quality of microscopy. Due to the fact that centralization is not seen as a solution, a special attention should be paid to these laboratories in terms of regular implementation of internal and external quality control measures.

2.3 Accessibility and availability of lab services

With a total number of 549 laboratories for smear microscopy, TB laboratory service in Kazakhstan has average population coverage per laboratory of 27000, which is 2-5 times higher then WHO recommended standards. However this general recommendation could not be applied in Kazakhstan due to the very low population density, big distances between diagnostic centres and difficulties in transportation during the winter months. According to the NTP, the further rationalization of the network would seriously affect the accessibility of smear microscopy and decrease the number of smear positive cases detected. The high number of laboratories however does not ensure the accessibility of services. It

happens very often that two or three laboratories are located in the same place and the workload is not distributed equally. Usually the laboratories at TB Dispensaries are overloaded not only with diagnostic and follow up examination, but also with rechecking slides for quality assurance, while PHC laboratories perform only a few examinations and their contribution in case finding is not satisfactory. It is a common practice to refer smear positive cases diagnosed at PHC laboratories to TB laboratory for confirmation of diagnosis. Double checking increases the number of smear examination and gives a wrong impression about wide use of smear microscopy in case detection. The number of smear examinations done in 2003 shows that for one smear positive case registered (tab1 and tab.6) the laboratory service examined 18 suspects. According to the laboratory reports, one smear positive case is found among 12 suspects examined. In 2003 the laboratory service reported 6425 more smear positive suspects than the NTP reported. This clearly shows the need of improvement of laboratory data management and reporting system.

In order to ensure good accessibility of smear microscopy for rural population, the NTP established a wide network of smear preparation points. The total number of these points countrywide is not known. This information was available only for Almaty Oblast where a total number of 114 points, in 2004 examined 164 suspects and found 11 positive cases. Positive cases were found only in 8 smear preparation points.

Smear microscopy is available for all suspects and TB patients free of charge and according to the Prikaz is used as a basic method for laboratory diagnosis.

Culture examination is available in 20 oblast and 39 Rayon laboratories, which is in average one lab per 250 000 population. The large number of culture laboratories ensures availability of culture examination countrywide, but concerning the quality of the examinations and maintenance of laboratories, it would be very difficult for the NTP to ensure the level of services according to the internationally accepted standards. Culture examination would not contribute much to timely diagnosis of TB, due to the long duration of the examination procedure. If DST is needed for smear positive patient, instead of sending positive cultures, Rayon laboratories could send sputum samples to Oblast laboratory.

Tab. 5. Use of smear microscopy for case finding in 2003

Case finding activities	Kazakhstan	Almaty Oblast	Karaganda Penitentiary
Suspects examined	213 147	13071	2469
Smears examined	607 081	385 40	7388
Positive smears found	48 400	2538	-
Smear positive cases found	18 152	876	255

2.4 Policies and methods for laboratory diagnosis of TB

2.4.1 Smear microscopy:

Although smear microscopy is recommended by the Prikaz as a basic method for laboratory diagnosis, the majority of suspect TB cases are referred to laboratory after they have been detected by x-ray or through MMR screening. A large number of laboratories is still using monocular microscope, or binocular microscopes with poor quality. Although laboratory technicians have good microscopy skills, using microscopes with poor quality, they are able to detect only high positive smears (2+ and 3+).

The quality of smear microscopy, as observed in Almaty Oblast was not satisfactory. Smears were ether too tick or too thin and not smeared equally. Staining instructions were present in all laboratories and the quality of stains and staining procedure was good. Shortage of stains and other regents was not reported, except for Xylene. According to the official regulations this substance belongs to a group of precursors for production of narcotics and could be ordered only by certified pharmacies.

The quality of smears, observed during the visit to prison laboratories was satisfactory. However it was not possible to get reliable information about the quality of smear microscopy, due to the weaknesses of the method used for quality assessment (rechecking of 100% of positive slides and 10% of negative)

Laboratories AK159/11 and AK159/17 use luminescent microscopy. The quality of smears and the microscopy was very good. The use of luminescent microscopy, although expensive, could be considered as a good solution for those two laboratories, since the daily workload is sometimes over 80 slides per day.

2.4.2 Culture:

Culture examination is recommended by the Prikaz # 323 as a more sensitive method for diagnosis, which could increase the number of diagnosed cases by 30-50% and detect the disease at earlier stage. It is recommended for: smear positive cases; smear negative cases; extra pulmonary; risk groups; for follow up of patients who are smear positive at the end of the intensive phase of treatment and cases with poor treatment outcome. Technical guidelines for culture and DST examination “Culture methods for detection of M tuberculosis and drug susceptibility testing of first line drugs” were officially approved by the MOH and published in 2004. Methodology for culture examination recommended is based on WHO and IUATLD guidelines and the quality of cultures as observed at NRL at Oblast TB laboratory was satisfactory. However, internal quality control activities are not implemented and they are not included in the Technical Guidelines.

NRL in Almaty use MGIT automatic system for detection of mycobacterial growth, which was provided through the World Bank Project in 2002. The use of this system did not contribute much to upgrading the level of laboratory service, since there were many problems with expensive maintenance and high running cost. Currently it is used only for isolation of mycobacteria from selected extrapulmonary specimens.

Karaganda prison laboratory follows the same culture methodology as recommended in technical guidelines and good quality of cultures was observed in AK159/11 and AK159/17 as well.

Biochemical tests for identification of M tuberculosis are done only at NRL. Other culture and DST laboratories report M. tuberculosis and DST results without confirmation of M tuberculosis group.

2.4.3 DST:

DST for first line drugs is performed by absolute concentration method. The original methodology, including the preparation of inoculum, preparation of drug containing media and interpretation of result is described in Prikaz #323, but it has been changed and partly adapted to Proportional method in newly published guidelines. Critical concentrations for resistance are adjusted according to Proportional method, but the inoculation size was not adjusted and is higher than recommended, which might result in over reporting of drug resistance.

Second line drugs have been procured by the MOH and are available for treatment of MDR TB cases. Therefore DST results are used for patient management and individualised treatment regimes for MDR TB cases. NTP plans to standardize the methodology for second line drugs and then to use in all culture and DST labs countrywide.

Currently second line drug testing for MDR patients in performed at City TB Dispensary within Gorgas MDR TB Project. A total number of 23 MDR strains have been tested so far and 17 found resistant at least to one second line drug.

Each Oblast laboratory prepares annual report on drug resistance and data for all Oblasts are collected at the NRL, where the country report on drug resistance is prepared and published. Very high rates of primary resistance were found in the annual report on drug resistance in Almaty Oblast TB laboratory. After rechecking of data it became clear that laboratory staff is not familiar with definitions of drug resistance and the results could not be considered as reliable. Over reporting of primary drug resistance is result of including follow up examinations of new cases with positive cultures, isolated during the course of treatment (more than one month) in primary resistance.

Oblast Reference laboratories beside TB culture perform other bacteriological examinations for isolation of common respiratory pathogens. The laboratory in Taldy Kurgan always includes Rifampicin in antibiogram for other bacteria isolated from respiratory specimens, in that way suggesting the use of Rifampicin as antibiotic for treatment of other respiratory infections. Most likely Rifampicin is tested as antibiotic in other general microbiology laboratories.

DST results in Prison sector are not used for case management, since only first line drugs are available. MDR TB cases are treated with category II and the results are as expected very poor. Prison medical authorities are not in favour of introducing DOTS Plus program, as long as the continuation of treatment after release of prisoners is civil society is not ensured. The quality of DST is checked regularly by the NTBC lab. The last results showed very high concordance of results for Isoniazid and Rifampicin resistance (100%). There was problem with Ethambutol, which showed discordant results of 55%.

All laboratories prepare media for culture and DST and use pure substances of drugs.

2.5 Quality Assurance

Quality control of smear microscopy is executed in accordance with the Order №323/471: all smear- positive slides and 10% of smear-negative slides detected in rayon laboratories are re-checked on the oblast level; 5% of smear- positive slides and 3% of smear-negative slides detected in oblast laboratories are re-checked on the national level. Implementation of this rechecking method resulted in extremely increased workload for Oblast laboratories, which in addition to everyday routine work collect thousands of slides for rechecking. It is understandable that the laboratory staff in charge of quality control is not in a position to pay much attention to rechecking and since the rechecking is not blinded, almost 100% of rechecked slides are without disagreement. Beside that, rechecking of positive slides does not contribute much to improvement of microscopy skills
NRL has been certified for DST by the SRL in Borstel and successfully passed one round of proficiency testing in 2001. Due to the lack of official regulations for transport of contaminated materials, the exchange of strains did not take place again. All other Oblast laboratories are tested twice a year by the NRL and majority of them showed satisfactory performance. Training and refresher training in DST is provided for oblast staff if needed, base on the results from the proficiency testing

2.6 Laboratory workload and staffing

Tab. 6. Annual workload in TB laboratories

Level of laboratory	Annual workload*						
	Smears			Cultures			DST
	Diagnosis	Follow-up	Total	Diagnosis	Follow-up	Total	
National	8241	66121	14853	n/a	n/a	6688	1213
Oblast	535857	334380	830237	71238	82111	153349	15478
Rayon	n/a	n/a	n/a	n/a	n/a	n/a	-

* Data for Rayons are included in Oblast

Tab. 7. Laboratory staffing at different levels

Qualification	Laboratory staff					
	National		Oblast		Rayon	
	Trained	Not trained	Trained	Not trained	Trained	Not trained
MD	6		24		n/a	
Lab technician	8		80		489	
Other workers	3		40		n/a	
Total	17		144			

The average workload of smear microscopy per lab technician is not more than 25 slides per week which is very close to the minimum required to maintain the proficiency..
Among the laboratories visited in Almaty Oblast, smear microscopy workload per lab technician in TB Dispensary was much higher than in PHC . City Policlinic in Taldy Kurgan, which covers population of 90 000, in 2003 examined 376 suspects and detected only 18 positive cases. (Case notification rate in Taldy Kurgan in 2003 was 175,9 per 100 000). The number of suspects referred by GPs is too low and the diagnosis in most of the cases is based on X ray. Additional factor is the lack of trust in qualification of lab technicians at PHC, not only among the patients, but also among health workers who prefer to confirm smear microscopy results at TB laboratory. Implementation of reliable system of quality assurance will contribute to change of this attitude and at the same will reduce the workload at Oblast level, by reducing the number of slides for rechecking.

2.7 Training

Basic training in smear microscopy was organized by Project HOPE and NTP in 1998/99 for all lab specialist. Refresher training has not been organized so far and due to the high turnover of trained staff it is difficult to estimate what are the real training needs at Rayon level. Most of the laboratory technicians from Rayons were trained in smear microscopy at Oblast laboratories
CDC organised training courses for the staff from NRL, Oblast laboratories and prison laboratory. Laboratory staff from Kazakhstan also participated in the training courses organised in other CAR. Two day training in Quality assurance for national and oblast staff was organized in 2001.
Senior staff from the NRL was involved in all training activities, organised by CDC and all Oblast laboratory co-ordinators were trained in laboratory techniques, laboratory safety and proficiency testing. NRL has a separate room, equipped wit 5 microscopes for training in smear microscopy.

2.8 Recording and reporting

WHO registers and forms for smear microscopy are in use in all laboratories and are filled in properly. There is no delay in reporting microscopy results.
Grading scale for reporting smear positive results is slightly different, but it would not affect the accuracy in reporting.
Culture results are reported according to the WHO recommended grading scale.
There is a lack of knowledge on DST reporting and wrong understanding of definitions of resistance in “never treated case” and “previously treated” These mistakes in recording of DST resulted in over reporting of drug resistance, presenting unreliable data about extremely high rates of primary resistance.
Each laboratory produce quarterly and annual reports on the number of examinations done, type of examination and the number of smear positive suspects found. The reports are regularly sent to TB managers, but are not analyzed, nor used to improve the laboratory performance.

2.9 Infection control and bio – safety

Sputum is collected in special sputum collection rooms, well ventilated or outdoors if there is no appropriate room. Nurses, responsible for sputum collection are well trained and pay attention to the quality of sputum specimens. Each sputum sample and the quality of the sample is recorded in sputum collection register.
Almost all smear microscopy laboratories are equipped with ventilated hoods. Most of them are produced locally and not all are functioning properly.
Culture laboratories are equipped with laminar flow cabinets.
Decontamination of contaminated materials is done according to the recommendations in Prikaz # 332. Sputum samples are immersed in disinfectant of chlorine group and kept at least 4 hours before boiling or autoclaving. Decontamination of cultures is done by autoclaving.
Written protocols for disinfection of sputum containers, laboratory benches and other contaminated materials are present in all laboratories.
Culture laboratory at Karaganda Prison is equipped with biosafety cabinet, but it is used only for smear preparation. High risk procedures for culture and DST are done in the other laboratory section which does not have bio safety cabinet.

2.10 Monitoring and supervision

Monitoring visits are conducted from national level to oblasts by NRL team and from oblast level to Rayon. During the previous Project HOPE project, monitoring visits were performed jointly with National team to each Oblast at lest once a year. Feedback is provided during the monitoring visit and recommendations are recorded in monitoring register. Checklists developed by Project HOPE, in collaboration with NRL staff are used only for monitoring Oblast TB Laboratories. Checklists are not used for monitoring smear microscopy labs at Rayon level.

Monitoring in Prison laboratory network in Karaganda is functioning very well and is done on regular monthly basis. TB laboratory coordinator visits all smear laboratories and collects slides for rechecking. If needed lab technicians are offered refresher training at laboratory AK159/11.

2.11 Equipment and supplies

The main issue concerning the equipment are microscopes used at peripheral labs. Currently, out of 31 lab in Almaty Oblast 12 have binocular microscopes with good quality.11 labs still use monocular microscopes or binocular with poor quality (MIKMED 1 LOMO, and A- Kruss). Smear laboratories in Karaganda Prisons also use old binocular microscopes.

Laboratory equipment for culture laboratories is functioning well. It was procured at central level in 2001 through WB loan.

Stains for Ziehl Neelsen were procured at Central level and distributed to Oblasts and Rayons. However the calculation of the amounts needed was not done properly and in many laboratories have a big stock of stains close to expiry date.

Sputum containers remain permanent problem for many laboratories. The use of disposable containers is considered as a temporary solution due to the high cost and problem with waste disposal. Laboratories prefer reusable glass containers but did not manage to find a source of supply. Containers are problem for microscopy labs in

Karaganda. They are still using old containers, made of amber glass and in addition all kind of household glassware.

Reagents for culture are procured by Oblast Laboratories. No shortage, or problem with procurement was reported, except for Xylene.

Kazakhstan TB Program has achieved sustainability in funding procurement of laboratory supplies, satisfying growing needs of national TB control program. MoH has already purchased a five year stock of supplies for smear microscopy. However, the funds for provision of new microscopes for smear microscopy centres have not been allocated yet.

3. Conclusions and recommendations

Organization and coverage	1. The existing network of smear microscopy laboratories is sufficient to cover the needs of the program, but the distribution of the workload is not planed properly. PHC laboratories are underutilized and many of them have workload that is under the required level to maintain proficiency. 2. Sputum preparation points in Almaty oblast did not show the expected result in terms of case finding and the quality of the smears prepared at this points is very poor. 3. The network of culture laboratories is too large to be maintained by the Program and it would be very difficult to provide the good quality of culture examinations at Rayon level. 4. TB laboratory network in Penitentiary system in Karaganda is well organized and established good collaboration with National laboratory network Recommendations: • Review the number, distribution and utilization of smear microscopy centres per Oblast in order to consider further rationalization of laboratory network. • Support smear microscopy laboratories at PHC and their contribution in case finding activities • Analyze the effectiveness of smear preparation points in Almaty Oblast and reconsider their role in case finding • Reduce culture and DST laboratories to one per Oblast. Transport of sputum samples for culture and DST could be more cost-effective alternative. • The laboratory service in Karaganda Prison could be used as an example of

	well functioning network within the penitentiary system and serve as a training base for other Oblast.
Accessibility and availability	1. The number of smear examinations done countrywide shows good availability for entire population. However there is a possibility that the cases detected by PHC laboratories are examined again by TB laboratories and this number does not represent the real effectiveness of smear microscopy. Recommendations: • Collect information on the number of examinations in PHC laboratories and evaluate their effectiveness in detection of smear positive cases • Assess the needs for training of GPs in order to improve the selection of suspect TB cases and increase the number of TB suspects examined within the available laboratory network at PHC.
Policies and technical methods	1. The use of smear microscopy is recommended as a diagnostic method by the Prikaz, but in order to ensure satisfactory level of quality, the NTP should put additional efforts to support the network of smear microscopy labs. The use of culture method as a "gold standard" for diagnosis may result in further decline in quality of smear microscopy 2. National guidelines for culture and DST do not provide precise information on criteria for resistance, in relation to inoculation size (CFU) and critical colony growth. 3. Tests for identification of M tuberculosis are not performed in all DST laboratories and there is possibility of reporting resistance of mycobacteria other than M tuberculosis. 4. Implementation of second line testing in Oblast TB laboratories, may cause serious problem in future, by creating super resistant strains as a result of limitations of the methodology and wrong interpretation of laboratory results Recommendations: • The priority for the National TB program should be strengthening of smear microscopy services through provision of binocular microscopes of good quality, refresher trainings for laboratory

	technicians and implementation of blinded rechecking method for External Quality Assessment (EQA). • Support the intermediate level (Oblast) laboratories in introducing tests for identification of M tuberculosis (niacin and nitrate reduction), and better understanding of basic DOTS definitions • Limit DST for second line drugs to one laboratory in the country (NRL) and start using the results for case management only after certification by SRL
Laboratory workload and staffing	1.The laboratory workload in smear microscopy is not distributed equally and the majority of examinations are done in specialized TB laboratories 2. Laboratories at PHC are underutilized. Low workload, and small number of positive smears will have impact on the lab technicians proficiency in smear microscopy Recommendations: • The workload in Oblast TB laboratories should be reduced by: reducing the number of examinations for the patients already diagnosed at PHC; changing the system for quality assurance and recheck only a sample of slides as recommended by "Blinded Rechecking Program" • Collect the information about the contribution of PHC laboratories in case finding activities and analyze the reasons for low performance
Quality Control	1.Implementation of quality assurance measures is officially recommended by Prikaz and implemented in smear microscopy labs. However the recommended method does not give any results and does not detect the problems in peripheral laboratories nor contribute to quality improvement 2. The large number of slides rechecked by Oblast TB laboratories unnecessarily increase the workload and interfere with regular diagnostic examinations. 3. External quality control for DST is provided by SRL in Borstel for NRL and by NRL for Oblast TB laboratories. Regular exchange of strains with SRL is hindered by absence of regulation for international shipment of infectious materials

	Internal quality control of culture and DST is not practiced Recommendation: • New protocol for quality assurance for smear microscopy, based blinded rechecking of representative sample of slides should be developed and officially introduced by Prikaz • Approach the Ministry of Transportation, Customs and other institutions in charge in order to find solution for the problem with transportation of cultures and provide all necessary documents for international shipment. • Guidelines for quality assurance of culture and DST should be prepared and distributed to Oblast laboratories • Results from quality assurance program should be collected at National level, analyzed and used for planning activities for quality improvement
Training	1. There was not any training in smear microscopy, organized since 1999. The high turnover of trained staff resulted in lack of knowledge for good smear preparation, especially in PHC laboratories. 2. The current system of quality assurance of smear microscopy does not give any result in terms of quality improvement and there is a need for training in new methods for EQA. 3. Training is also need for improvement of quality of culture and DST at Oblast laboratories. Recommendations: • Organize basic training in smear microscopy in Almaty oblast • In order to implement the new method for EQA, advanced training in smear microscopy for Oblast laboratory staff and Karaganda prison should be organized in collaboration with CDC laboratory specialists. • Discuss with NRL staff and CDC specialists the possibility of organizing training in culture and DST, including technical methods, recording, reporting and basic principles of DRS.
Recording and reporting	1. WHO recommended forms and registers

	are in use and are filled in properly 2. Quarterly reports on laboratory performance are submitted to TB managers and higher level laboratories, but are not analyzed together with cohort results and used for planning remedial actions 3. Reports on DST, prepared by Almaty Oblast laboratory are not reliable due to the wrong understanding of definitions for primary and acquired resistance Recommendation: • Use quarterly reports on laboratory performance to improve management of laboratory network • Improve reporting of DST results
Infection control	1. Infection control measure in all laboratories are implemented according to the Prikaz 2. Nurses responsible for sputum collection are well trained in procedures for sputum collection but the quality of sputum samples in PHC laboratories is not always satisfactory. It is uncertain whether theoretical knowledge is really implemented in practice 3. Culture and DST laboratories in Karaganda TB colonies do not perform high risk procedures according to the regulation, although are equipped with bio-safety cabinet class 2. Recommendations: • Observe sputum collection during the monitoring visit to PHC laboratories • Reorganize the work of culture and DST section at and use biosafety cabinet for culture and DST instead for smear microscopy in AK159/11 and AK159/17
Monitoring and supervision	1. Regular monitoring of entire laboratory network in Kazakhstan, including all diagnostic levels is to big workload for the senior laboratory staff at NRL and Oblast TB laboratories. Quarterly monitoring visits could be conducted by well trained non laboratory staff, using standardised monitoring checklist. 3. Monitoring reports should be collected and analyzed at Oblast and National level in order to identify problems and assess training needs. Recommendations: • Include laboratory component in the

	training program for TB managers at Oblast and Rayon Level • Develop standardized monitoring checklist • Organize annual meetings of Oblast laboratory coordinators to discuss the laboratory performance and strengthen laboratory networking
Equipment and supplies	1. Smear laboratories network is not equipped with good microscopes. A large number of laboratories countrywide still use microscopes with poor quality (MIKMED 1 LOMO, and A-Kruss). 2. The same type of binocular microscopes with poor quality is used for smear microscopy in Karaganda Prison laboratories. 3. Laboratory reagents and supplies have been procured for all labs, but the calculation of needs was not done properly and many laboratories have big sock of stains close to expiry date 4. Sputum containers in Karaganda prison laboratories are present in sufficient number only at culture laboratories. Smear laboratories use all kinds of improvised containers. 5. Small laboratory equipment (loops, staining bottles, slide boxes) are missing in many laboratories. 6. Culture and DST laboratories have been equipped with necessary equipment in 2001, by WB Project Recommendations: • Equip all smear laboratories with binocular microscopes of good quality • Train laboratory staff in proper calculation of needs for reagents and supplies • Prepare a list of small laboratory equipment and glassware for microscopy labs and provide all laboratories with all required items.

Annex I
List of persons met:

1. Rakishev G.B., Director of NTBC and National TB Coordinator
2. Agzamova R.A. Head of National Reference Laboratory and National Laboratory Coordinator
3. Adilbekova R., Gorgas Project Coordinator, Almaty City TB Dispensary
4. Pak S., TB Project Coordinator PRI/KNCV Office in Central Asia
5. Kalmuratov Zh. A. Deputy Chief of Karaganda Oblast Committee of Criminal Executive System (CCES)
6. Kartashova L.V Deputy Chief of Prevention and Ttreatment Work of Karaganda Oblast CCES
7. Shahzadin M.A. Deputy Chief of Facility АК 159/1
8. Ptashinsky S.V. . Deputy Chief of Facility АК 159/7
9. Radzhapov F. . Deputy Chief of Facility АК 159/6
10. Kistafin S. B. Chief of Facility АК 159/11
11. Sydykov SH. Deputy Chief of Almaty Oblast Public Health Department
12. Zhansengirov T.M. Head Doctor of Oblast Multifield Hospital in Taldykorgan City
13. Zhapparkulova B.M. Deputy Head Doctor of City Polyclinic of Taldykorgan City
14. Sarsyembayev S.S. Head Doctor of Oblast TB Dispensary in Taldykorgan City
15. Ziyadanova G.T TB Department Doctor of Karatalsk Rayon

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Annex II Data Collection forms

Data collection form **Culture lab**	
Present: Marija Joncevska; Begzat Toksanbayeva; Rima Agzamova	
Date 22.11.2004	
Site Name: Laboratory at the NCP – National Reference Laboratory	
Names of the staff and position: A total number of 17 ; 5 doctors	
Population Served	Nationwide
Condition of building	Very poor, the plan for the new three store building was finalised and the budget approved by the Ministry of Health
Condition of Laboratory	Very poor
Separate sections for: specimen reception; microscopy; media preparation; culture; decontamination; storage; administrative section	yes
Reliable electrical supply	yes
Reliable water supply	yes
Organization of workflow	Appropriate as much as current set up allows
Workload (diagnostic and follow up)	Smear: 16 389 total in 2003 Culture: 6688
Number of lab doctors	Three doctors, two scientific workers
Number of Lab Technicians	Six
Number of other staff	Three cleaners
Total staff trained (where and when)	All on basic training and laboratory course in Almaty
Sputum collection procedure (containers, instructions, safety)	Sputum is collected at Hospital facility, delivered to the laboratory through hatch. Entrance to the laboratory restricted only for lab staff

Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Sufficient. MOH procured a huge amount of reagents for all oblast laboratories which will be enough for five years.
Reagents and supplies for fluorescent microscopy (quality, quantity and source)	Sufficient
Reagents and supplies for culture	Regular supply. The problem is only with pure substances for DST
Laboratory equipment	The laboratory is fully equipped
Media prepared in laboratory , how often?	LJ prepared in the laboratory, once a week
Quality of media	Good
Laboratory glassware	In place
Quality of smears	Good
Slide storage	Yes, according to the Prikaz
Participates in Proficiency Testing? (WHO recommended)	No, according to the Prikaz, 10% of negative slides and all positive slides are rechecked.
Decontamination procedure	Autoclaving
Media used for culture	LJ, MGIT
Quality of culture	Good
Frequency of culture examinations	Diagnosis of all cases, follow up by request
Use of standard reporting scale	Smear: adapted according to Prikaz Culture: yes
Request for Sputum Exam used and filled in properly	Smear: yes Culture yes
Laboratory Register used and fill in properly	Smear: yes Culture: yes
Bio-safety measures in place?	Yes, All high risk procedures conducted in bio safety cabinets. Laboratory equipped wit one class I and one class II biosafety cabinet
Disinfectants used	yes
Contaminated waste disposal	After decontamination
Number of monitoring visits last 12 months	At least annual visits from NRL to Oblasts and from Oblasts to Rayons
Feedback provided	yes
Laboratory guidelines and manuals	Smear: included in Prikaz Culture: Culture and DST national guidelines published recently
Preparation and distribution of reagents and supplies	No central distribution, only for supplies received from grants
Training activities carried out by lab	Only on job training. Annual workshops for TB laboratory doctors from Oblasts have not been organized for the last three years.
Research activities	Yes, two doctors are working on their doctoral thesis
Reporting (to whom and frequency)	To NTP

Remarks	The Head of the laboratory pointed out the need of organized training in culture and DST for Oblast laboratories. There was no any training conducted in last two years.

Additional information for laboratory performing DST

Method for DST used	Absolute concentration
Pure substances available	Yes, in limited quantities
Indication for DST	Patient management
Additional training	In SRL Borstel
Proficiency testing	Not regular
Link with SRL	SRL Borstel
Information on previous treatment	yes
DST Register patient/specimen based	both
Annual reports on DST	Reported to NTP, Euro TB and WHO
Available DST results (period and resistance patterns) Attached Laboratory started DST for second line drugs, 20 strains for retesting are selected to be sent to SRL in Borstel, it is uncertain when will the shipment take place due to the problems with customs and regulations for transportation of infectious materials.	

Форма учета собранных данных	
Микроскопическая лаборатория	
Present: Marija Joncevska ; Bekzat Toksanbayeva; Tatyana Matveeva	
Дата: 24.11.2004	
Site name: **Микроскопическая лаборатория периферической колонии АК 159/1(СИ-16) (Prison laboratory - Karaganda)**	
Laboratory staff: 1 lab technician	
Population Served	Colony
Condition of building	Under reconstruction
Condition of Laboratory	satisfactory
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	smears-1348, положительных-96 patients,
Number of lab doctors	-
Number of Lab Technicians	1
Number of other staff	санитар из числа заключенных
Total staff trained (where and when)	in 2004 smear microscopy training at Oblast TB lab, DOTS training in 2004г (Project HOPE)
Sputum collection procedure (containers, instructions, safety)	Containers not adequate reusable (household glassware) safety measures according to the Prikaz
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Present except Xylene and sulphuric acid
Small laboratory equipment *	+
Laboratory glassware *	+
Number of binocular microscopes (condition and maintenance) *	Leica binocular with good quality
Quality of smears	Satisfactory
Slide storage	+ according to the Prikaz №323
Participates in Proficiency Testing? (WHO recommended)	+ Prikaz №323
Use of standard reporting scale	+ Prikaz №323
Request for Sputum Exam used and filled in	+

properly	
Laboratory Register used and fill in properly	+
Bio-safety measures in place?	+
Disinfectants used	2,5% hypochlorite
Contaminated waste disposal	After 4 houurs of disinfection (Prikaz №323)
Number of monitoring visits last 12 months	quarterly.
Feedback provided	+
Laboratory manual and guidelines present	yes
Remarks	Standard containers are not available

Периферическая колония АК 159/1(СИ-16

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		200,0г			
этанол 95 % - технический сорт		200 мл			
Концентрированная соляная кислота		50 мл			
Хлорид метиленовый голубой		200,0 г			
Фенол		200,0г			
Иммерсионное масло		100,0 мл			
Ксилол	+	-			
Аурамин О		-			
KMnO4		-			
Метиловый спирт		-			
Дезинфектант - гипохлорит натрия		+			
Стеклянная посуда					
Бутылка для красителей 100мл	+	-			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			
оборудование					
Бинокулярный микроскоп		+			
Спиртовка		+			

Ведро для отходов		+			
Контейнер для транспортировки мокроты		+			
Шкаф для хранения слайдов		+			
Часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз	+	-			
Фильтровальная бумага		-			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм		+			
Контейнеры для сбора мокроты		+			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 24.11.2004	
Наименование учреждения: **Микроскопическая лаборатория периферической колонии АК 159/6**	
Имена и должности сотрудников: лаборант- Тривайлова Ляйля	
Population Served	Периферическая колония
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	количество мазков-960, положительных-16, обследовано лиц- 321, положительных- 7.
Number of lab doctors	-
Number of Lab Technicians	1
Number of other staff	санитар из числа заключенных
Total staff trained (where and when)	в 2004г в Карагандинской медицинской академии Продвинутый курс ДОТС в 2004г (Проект ХОУП)
Sputum collection procedure (containers, instructions, safety)	контейнеры- приспособленная посуда, инструкции согласно приказу 323 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Реактивы в достаточном количестве поставка реактивов через фирму «Бион» Россия, проблема с обеспечением ксилола, кислоты(прекурсоры)
Small laboratory equipment *	Имеется
Laboratory glassware *	Имеется
Number of binocular microscopes (condition and maintenance) *	бинокулярный микроскоп «ЛОМО Микмед-1», в оптической части отмечается наличие плесени
Quality of smears	хорошее
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Use of standard reporting scale	+ согласно приказу №323
Request for Sputum Exam used and filled in properly	+
Laboratory Register used and fill in properly	+

Bio-safety measures in place?	+
Disinfectants used	2,5% гипохлорид кальция
Contaminated waste disposal	После замачивания в дезинфектанте в течение 4 часов (приказ №323)
Number of monitoring visits last 12 months	1 раз в квартал обл.координатором Ложкиным В. 1 раз координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Б.
Feedback provided	+
Laboratory manual and guidelines present	приказ №323 РК, руководство по микроскопии (WHO)
	-проблема с обеспечением прекурсоров - необходим микроскоп хорошего качества - необходимы стандартные контейнеры для сбора мокроты

Периферическая колония АК 159/6

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		300,0г			
Этанол 95 % - технический сорт		200 мл			
Концентрированная соляная кислота		50 мл			
Хлорид метиленовый голубой		50,0 г			
Фенол		200,0г			
Иммерсионное масло		100 мл			
Ксилол	+	100 мл			
Аурамин О		-			
KMnO4		-			
Метиловый спирт		-			
Дезинфектант - гипохлорит натрия **2,5%**		+			
Стеклянная посуда					
Бутылка для красителей 100мл	+	+-			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			
оборудование					

Бинокулярный микроскоп	+	+			
Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		+			
Шкаф для хранения слайдов		+			
Часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз	+	-			
Фильтровальная бумага		-			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм		+			
Контейнеры для сбора мокроты		приспособленная посуда			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Форма учета собранных данных	
Микроскопическая лаборатория	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 24.11.2004	
Наименование учреждения: **Микроскопическая лаборатория периферической колонии АК 159/7**	
Имена и должности сотрудников: лаборант- Батырева Людмила Геннадьевна	
Population Served	Периферическая колония
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	количество мазков-986, положительных-57, обследовано лиц- 329, положительных- 29.
Number of lab doctors	-
Number of Lab Technicians	1
Number of other staff	санитар из числа заключенных
Total staff trained (where and when)	в 2000г по микроскопии мазка мокроты (НЦПТ/Проект ХОУП) Продвинутый курс ДОТС в 2004г (Проект ХОУП)
Sputum collection procedure (containers, instructions, safety)	контейнеры- используется приспособленная посуда, инструкции согласно приказу 323 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Реагенты в достаточном количестве поставка реактивов через фирму «Бион» Россия, проблема с обеспечением ксилола, кислоты(прекурсоры)
Small laboratory equipment *	Имеется
Laboratory glassware *	Имеется
Number of binocular microscopes (condition and maintenance) *	бинокулярный микроскоп «ЛОМО Микмед-1»
Quality of smears	хорошее
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323

Use of standard reporting scale	+ согласно приказу №323
Request for Sputum Exam used and filled in properly	+
Laboratory Register used and fill in properly	+
Bio-safety measures in place?	+
Disinfectants used	2,5% гипохлорит кальция
Contaminated waste disposal	После замачивания в дезинфектанте в течение 4 часов (приказ №323)
Number of monitoring visits last 12 months	1 раз в квартал обл.координатором Ложкиным В. 1 раз координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Б.
Feedback provided	+
Laboratory manual and guidelines present	приказ №323 РК, руководства по микроскопии (WHO)
	-Нет стандартных контейнеров по сбору мокроты, -проблема с обеспечением прекурсоров - необходим микроскоп хорошего качества

Периферическая колония АК 159/7

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		200,0г			
Этанол 95 % - технический сорт		200 мл			
Концентрированная соляная кислота		100 мл			
Хлорид метиленовый голубой		200,0 г			
Фенол		200,0г			
Иммерсионное масло		100 мл			
Ксилол	+	-			
Аурамин О		-			
KMnO4		-			
Метиловый спирт		-			
Дезинфектант - гипохлорит натрия		+			
Стеклянная посуда					
Бутылка для красителей 100мл	+	-			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			
оборудование					

Бинокулярный микроскоп		+			
Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		+			
Шкаф для хранения слайдов		+			
Часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз	+	-			
Фильтровальная бумага		-			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм		+			
Контейнеры для сбора мокроты		приспособленная посуда			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Форма учета собранных данных **Культуральная лаборатория**	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 25.11.04	
Наименование учреждения: **Бактериологическая лаборатория периферической колонии АК 159/11**	
Имена и должности сотрудников: Заведующий лабораторией, областной координатор по лаборатории- Ложкин Виктор Иванович Врач-лаборант Левина Любовь Ивановна Врач-лаборант Гардех Евгения Николаевна Лаборант Кулакова Светлана Ильинична Лаборант Ложкина Елена Викторовна	
Population Served	Пенитенциарная система Карагандинской области
Condition of building	Состояние здания - удовлетворительное
Condition of Laboratory	Состояние лаборатории - удовлетворительное
Separate sections for: specimen reception; microscopy; media preparation; culture; decontamination; storage; administrative section	+
Reliable electrical supply	+
Reliable water supply	+
Organization of workflow	+
Workload (diagnostic and follow up)	Мазок: обследовано лиц- 396, из них положительных- 87, количество мазков-1218, из них положительных- 196 мазок: обследовано лиц- 3008, из них положительных- 720, количество мазков-6016, из них положительных- 1249 **культура:** проведено посевов- 688, из них положительных- 424
Number of lab doctors	физических лиц-3, ставки-3
Number of Lab Technicians	физических лиц-3, ставки-3
Number of other staff	физических лиц-1, ставки-1
Total staff trained (where and when)	2 врача, 2 лаборанта обучены на базе НЦПТ в 2003г, 1 врач и 1 лаборант на рабочем месте в туб.лаборатории периферической колонии
Sputum collection procedure (containers,	Сбор мокроты проводится в отделениях,

instructions, safety)	контейнеры – стандартные, инструкции согласно приказу 323/471, прием патологического материала проводится через специальное окно, доступ в лабораторию имеет только персонал лаборатории
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Реактивы в достаточном количестве, поставка через фирму «Бион»
Reagents and supplies for fluorescent microscopy (quality, quantity and source)	Реактивы в достаточном количестве, поставка через фирму «Бион»
Reagents and supplies for culture	Имеются
Laboratory equipment	+
Media prepared in laboratory , how often?	еженедельно
Quality of media	хорошее
Laboratory glassware	+
Quality of smears	хорошее
Slide storage	(+)-6месяцев, (-) 1 неделя (приказ №323)
Participates in Proficiency Testing? (WHO recommended)	Мазки 5% положительных, 3% отрицательных на базе НЦПТ(приказ №323),
Decontamination procedure	автоклавирование
Media used for culture	Левенштейна-Йенсена
Quality of culture	хорошее
Frequency of culture examinations	ежедневно
Use of standard reporting scale	Мазок: приказ 323 Культура: методические рекомендации НЦПТ
Request for Sputum Exam used and filled in properly	Мазок: + Культура: +
Laboratory Register used and fill in properly	Мазок: + Культура: +
Bio-safety measures in place?	Микроскопия и посев проводятся в БШБ I класса, DST-в вытяжном шкафу
Disinfectants used	2,5% гипохлорид кальция
Contaminated waste disposal	После автоклавирования
Number of monitoring visits last 12 months	2 раза Проект ХОУП
Feedback provided	+
Laboratory guidelines and manuals	Мазок: приказ 323/471 РК Руководство по микроскопии (WHO) Культура: приказ 323/471 РК
Preparation and distribution of reagents and supplies	Лаборатория готовит самостоятельно
Training activities carried out by lab	Обучение специалистов для периферических лабораторий
Research activities	
Reporting (to whom and frequency)	1 раз в НЦПТ

Remarks	проводить культуральные исследования и DST в БШБ I класса, при проведении переконтроля мазков необходимо давать полную информацию по качеству приготовленных мазков, необходим тренинг по контролю качества мазков

Дополнительная информация по лаборатории , проводящей ТЛЧ

Method for DST used	метод абсолютных концентраций
Pure substances available	+
Indication for DST	Ведение больных
Additional training	Контроль качества микроскопии мазка мокроты
Proficiency testing	на базе НЦПТ в сентябре 2004г Результаты: совпадение по - изониазиду (H) 88,9% - стрептомицину (S) 94,4% - рифампицину (R) 100% - этамбутолу (E) 55,6% - HR 100%
Link with SRL	
Information on previous treatment	+
DST Register patient/specimen based	+
Annual reports on DST	1 раз в год в НЦПТ
Наличие результатов ТЛЧ (период и устойчивые образцы)	

Периферическая колония АК 159/11 реактивов и оборудования

Культуральная лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
L-аспарагин		300,0 г			
Анилин					
BrCN бром цинк					
Безводный двунатриевый фосфат водорода					
Глицерин		700.0 г			
30% перекись водорода					
Цитрат магния		300,0 г			
Mg SO4, 7 H2O Сульфат магния		1000 г			
Малахитовая зелень		500.0 г			
N - ацетил цистеин					
N-нафтилен диамин					
1-замещенный фосфат калия		500,0 г			
Цитрат натрия					
Глутамат натрия					
NaOH Гидроокись натрия		1000 г			
Гипохлорит натрия					
Нитрат натрия					
Сульфаниламиды					

Трифосфат натрия					
Твин 80					
Лабораторная посуда					
Мензурка 100мл		+			
Мензурка 250 мл		+			
Мензурка 600 мл		+			
Лабораторная колба 2000ml		+			
Мензурка 1000ml		+			
Лабораторная колба 1000 ml		+			
Лабораторная колба 250 ml		+			
Лабораторная колба 500 ml		+			
Воронка 1000 ml		+			
Воронка 250 ml		+			
Воронка 50 ml		+			
Стеклянные бусы		+			
Стеклянные пробирки 16 X 100		+			
Стеклянные пробирки 16 X 160		+			
Градуированные цилиндры 10 ml		+			
Градуированные цилиндры 100 ml		+			
Градуированные цилиндры 1000ml		+			
Градуированные цилиндры 25 ml		+			
Градуированные цилиндры 500 ml		+			
Пипетка 10ml		+			
Пипетка1ml		+			
Пипетка 5ml		+			
Бутылка для реактивов 1000ml	+	-			
Бутылка для красителей 100ml		+			
Оборудование					
Бактериологический термостат		+			
Миксер		+			
Люминесцентный микроскоп		+ ЛОМО (Россия)			

Свертыватель		+			
Ph метр		+			
Учебный микроскоп	+	-			
Весы		+			
Центрифуга		+			
Дистиллятор		+			
Машина для мытья стеклянной посуды	+	-			
Горизонтальный автоклав		+			
Световые микроскопы		+			
Магнитная мешалка	+	-			
Печи/ паровоздушные стерилизаторы		+			
Холодильники		+			
БШБ 1 класса		+			
БШБ 2 класса	+	-			
Вертикальные автоклавы		+			
Сопутствующие материалы					
Аналитические весы		+			
Морозильник – 86^0 С	+	-			
Алюминиевая фольга		-			
Автоклавная лента		+			
Съемные центрифужные пробирки		+			
Вата		+			
Стеклянные пипетки (коробка) -		+			
Мерные ложки	+	-			
Пастеровские пипетки	+	-			
Щетки для пипеток		+			
Резиновая груша	+	+ старые			
Контейнер для транспортировки слайдов		+			
Лотки для контейнеров		+			

Штатив для пробирок - 16mm /10	+	-			
Штатив для пробирок 16mm /20		+			
Штатив для пробирок 16mm /48					
Измеритель мутности		+			

Дополнительные реагенты и оборудование для лаборатории, проводящей DST

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
Морозильник – 86^0 C	+	-			
Аналитические весы, чувствительность - 0,0001	+	-			
Чистые субстанции:					
Этамбутол		+			
Изониазид		+			
Рифампицин		+			
Стрептомицин		+			

Форма учета собранных данных **Культуральная лаборатория**	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 25.11.04	
Наименование учреждения: **Бактериологическая лаборатория периферической колонии АК 159/17**	
Имена и должности сотрудников: Врач-лаборант Котикова Раиса Родионовна Лаборант Пилипенко Р	
Population Served	Периферическая колония АК 159/17
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Separate sections for: specimen reception; microscopy; media preparation; culture; decontamination; storage; administrative section	+
Reliable electrical supply	+
Reliable water supply	+
Organization of workflow	+
Workload (diagnostic and follow up)	мазок: обследовано лиц- 396, из них положительных- 87, количество мазков-1218, из них положительных- 196 мазок: обследовано лиц- 3008, из них положительных- 720, количество мазков-6016, из них положительных- 1249 **культура:** проведено посевов- 688, из них положительных- 424
Number of lab doctors	1
Number of Lab Technicians	1
Number of other staff	1
Total staff trained (where and when)	врач и лаборант обучены на базе НЦПТ в 2003г,
Sputum collection procedure (containers,	Сбор мокроты проводится в отделениях

instructions, safety)	контейнеры – стандартные, инструкции согласно приказу 323/471 доступ в лабораторию имеет только персонал лаборатории
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Реактивы в достаточном количестве, поставка через фирму «Бион»
Reagents and supplies for fluorescent microscopy (quality, quantity and source)	+
Reagents and supplies for culture	+
Laboratory equipment	+
Media prepared in laboratory , how often?	еженедельно
Quality of media	хорошее
Laboratory glassware	+
Quality of smears	низкое
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Decontamination procedure	автоклавирование
Media used for culture	Левенштейна-Йенсена
Quality of culture	хорошее
Frequency of culture examinations	ежедневно
Use of standard reporting scale	Мазок: приказ 323 Культура: методические рекомендации НЦПТ
Request for Sputum Exam used and filled in properly	Мазок: + Культура: +
Laboratory Register used and fill in properly	Мазок: + Культура: +
Bio-safety measures in place?	Микроскопия и посев проводятся в БШБ I класса, DST-в вытяжном шкафу
Disinfectants used	2,5% гипохлорит кальция
Contaminated waste disposal	После автоклавирования
Number of monitoring visits last 12 months	2 раза Проект ХОУП
Feedback provided	+
Laboratory guidelines and manuals	Мазок: приказ 323/471 РК Руководство по микроскопии (WHO) Культура: приказ 323/471 РК
Preparation and distribution of reagents and supplies	лаборатория готовит самостоятельно
Training activities carried out by lab	-
Research activities	
Reporting (to whom and frequency)	1 раз в НЦПТ
Remarks	проводить культуральные исследования и DST в БШБ I класса

Дополнительная информация по лаборатории , проводящей ТЛЧ

Method for DST used	метод абсолютных концентраций
Pure substances available	+
Indication for DST	Ведение больных
Additional training	
Proficiency testing	на базе НЦПТ в сентябре 2004г Результаты: совпадение по - изониазиду (H) 88,9% - стрептомицину (S) 94,4% - рифампицину (R) 100% - этамбутолу (E) 55,6% - HR 100%
Link with SRL	
Information on previous treatment	+
DST Register patient/specimen based	+
Annual reports on DST	1 раз в НЦПТ
Наличие результатов ТЛЧ (период и устойчивые образцы)	

Периферическая колония АК 159/17 Список лабораторных реагентов, реактивов и оборудования

Культуральная лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
L-аспарагин		300,0 г			
Анилин					
Бром цинк BrCN					
Безводный двунатриевый фосфат водорода Na2 HPO4					
Глицерин		700.0 г			
30% перекись водорода					
Цитрат магния		300,0 г			
Сульфат магния Mg SO4, 7 H2O		1000 г			
Малахитовая зелень		500.0 г			
N - ацетил цистеин					
N-нафтилен диамин					
1-замещенный фосфат калия		500,0 г			
Цитрат натрия					
Глутамат натрия					
Гидроокись натрия NaOH		1000 г			
Гипохлорит натрия					
Нитрат натрия					
Сульфаниламиды					

Трифосфат натрия					
Твин 80					
Лабораторная посуда					
Мензурка 100мл		+			
Мензурка 250 мл		+			
Мензурка 600 мл		+			
Лабораторная колба 2000ml		+			
Мензурка 1000ml		+			
Лабораторная колба 1000 ml		+			
Лабораторная колба 250 ml		+			
Лабораторная колба 500 ml		+			
Воронка 1000 ml		+			
Воронка 250 ml		+			
Воронка 50 ml		+			
Стеклянные бусы		+			
Стеклянные пробирки 16 X 100		+			
Стеклянные пробирки 16 X 160		+			
Градуированные цилиндры 10 ml		+			
Градуированные цилиндры 100 ml		+			
Градуированные цилиндры 1000ml		+			
Градуированные цилиндры 25 ml		+			
Градуированные цилиндры 500 ml		+			
Пипетка 10ml		+			
Пипетка1ml		+			
Пипетка 5ml		+			
Бутылка для реактивов 1000ml	+	-			
Бутылка для красителей 100ml		+			
Оборудование					
Бактериологический термостат		+			
Миксер		+			
Люминесцентный микроскоп		+ ЛОМО (Россия)			

Свертыватель		+			
Ph метр		+			
Учебный микроскоп	+	-			
Весы		+			
Центрифуга		+			
Дистиллятор		+			
Машина для мытья стеклянной посуды	+	-			
Горизонтальный автоклав		+			
Световые микроскопы		+			
Магнитная мешалка	+	-			
Печи/ паровоздушные стерилизаторы		+			
Холодильники		+			
БШБ 1 класса		+			
БШБ 2 класса	+	-			
Вертикальные автоклавы		+			
Сопутствующие материалы					
Аналитические весы		+			
Морозильник – 86^0 С	+	-			
Алюминиевая фольга		-			
Автоклавная лента		+			
Съемные центрифужные пробирки		+			
Вата		+			
Стеклянные пипетки (коробка)		+			
Мерные ложки	+	-			
Пастеровские пипетки	+	-			
Щетки для пипеток		+			
Резиновая груша	+	+ старые			
Контейнер для транспортировки слайдов		+			
Лотки для контейнеров		+			

Штатив для пробирок - 16mm /10	+	-			
Штатив для пробирок 16mm /20		+			
Штатив для пробирок 16mm /48					
Измеритель мутности		+			

Дополнительные реагенты и оборудование для лаборатории, проводящей DST

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
Морозильник – 86^0 C	+	-			
Аналитические весы, чувствительность - 0,0001	+	-			
Чистые субстанции:					
Этамбутол		+			
Изониазид		+			
Рифампицин		+			
Стрептомицин		+			

Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 01.12.04	
Наименование учреждения: **Микроскопическая лаборатория областной многопрофильной больницы г. Талдыкорган**	
Имена и должности сотрудников: Врач-лаборант Кадырова Актолкын Мусагалиевна Лаборант Молдабекова Телеухан	
Population Served	609 900
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	лиц- 557, из них положительных- 16. мазки-1479, из них положительных- 40
Number of lab doctors	1
Number of Lab Technicians	1
Number of other staff	1
Total staff trained (where and when)	врач-лаборант в 2004г., лаборант в 2001г. в ОПТД
Sputum collection procedure (containers, instructions, safety)	Сбор мокроты проводится в стационаре стандартные контейнеры 200 шт, инструкции согласно приказу 323/471 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	Большой запас реактивов с истекающим сроком годности фирма «Вельд»
Small laboratory equipment *	+
Laboratory glassware *	+
Number of binocular microscopes (condition and maintenance) *	бинокулярный «Zeiss»
Quality of smears	низкое
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Use of standard reporting scale	+ согласно приказу №323
Request for Sputum Exam used and filled in properly	+
Laboratory Register used and fill in properly	+
Bio-safety measures in place?	+

Disinfectants used	0,280% пресепт
Contaminated waste disposal	После замачивания в дезинфектанте в течение 4 часов
Number of monitoring visits last 12 months	нет документов о проведении мониторинговых визитов
Feedback provided	+
Laboratory manual and guidelines present	Приказ 323/471
	1. обеспечение бинокулярным микроскопом хорошего качества 2. улучшить качество мазков 3. обеспечение бактериальной петлей (используется пинцет) 4. имеются 2 случая ложноположительных, 1 случай ложноотрицательных мазков

Областная многопрофильная больница г. Талдыкорган

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		1000.0 г			
Этанол 95 % - технический сорт		18 кг			
Концентрированная соляная кислота		2 кг			
Хлорид метиленовый голубой		1000.0 г			
Фенол		1000.0 г			
Иммерсионное масло		800 мл			
Ксилол	+	50 мл			
Аурамин О		-			
KMnO4		-			
Метиловый спирт					
Дезинфектант - гипохлорит натрия		0,280 % пресепт			
Стеклянная посуда					
Бутылка для красителей 100мл		приспособленная посуда			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			

оборудование					
Бинокулярный микроскоп	+	бинокулярный			
Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		бикс			
Шкаф для хранения слайдов		+			
Часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз		нет			
Фильтровальная бумага		+			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм	+	-			
Контейнеры для сбора мокроты		+			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Форма учета собранных данных	
Микроскопическая лаборатория	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 30.11.04	
Наименование учреждения: **Микроскопическая лаборатория Каратальского района (центр Уштобе) Алматинская область**	
Имена и должности сотрудников: Врач фтизиатр Зияданова Гульшат Турсынхановна Лаборант Дьячук Нина Ивановна	
Population Served	46 740
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	лиц-199, из них положительных- 31. мазки-597, из них положительных-93 лиц-97, из них положительных- 2. мазки-194, из них положительных-4
Number of lab doctors	-
Number of Lab Technicians	1
Number of other staff	1
Total staff trained (where and when)	1999 Проект ХОУП/НЦПТ
Sputum collection procedure (containers, instructions, safety)	Сбор мокроты проводится на улице, в специально отведенном месте стандартные контейнеры- имеются, инструкции согласно приказу 323/471 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	+ фирма «Вельд»
Small laboratory equipment *	+
Laboratory glassware *	+
Number of binocular microscopes (condition and maintenance) *	бинокулярный «A-cruss»
Quality of smears	низкое
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Use of standard reporting scale	+ согласно приказу №323

Request for Sputum Exam used and filled in properly	+
Laboratory Register used and fill in properly	+
Bio-safety measures in place?	+
Disinfectants used	0,280 % пресепт
Contaminated waste disposal	После замачивания в дезинфектанте в течение 4 часов
Number of monitoring visits last 12 months	3 визита областного координатора по лаборатории
Feedback provided	+
Laboratory manual and guidelines present	Приказ 323/471
	1. улучшить качество сбора мокроты 2. обеспечение бинокулярным микроскопом хорошего качества 3. улучшить качество мазков

Алматинская область Каратальский район (центр Уштобе)

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		100.0 г			
Этанол 95 % - технический сорт		200 мл			
Концентрированная соляная кислота		100 мл			
Хлорид метиленовый голубой		200.0 г			
Фенол		200.0 г			
Иммерсионное масло		200 мл			
Ксилол	+	нет			
Аурамин О		-			
KMnO4		-			
Метиловый спирт					
Дезинфектант - гипохлорит натрия		0,280 % пресепт			
Стеклянная посуда					
Бутылка для красителей 100мл		приспособленная посуда			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			

оборудование					
Бинокулярный микроскоп	+	бинокулярный			
Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		бикс			
Шкаф для хранения слайдов		+			
Часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз		нет			
Фильтровальная бумага		+			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм	+	+			
Контейнеры для сбора мокроты		+			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Форма учета собранных данных	
Микроскопическая лаборатория	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 30.11.04	
Наименование учреждения: **Пункт фиксации мазков Каратальского района Алматинской области (СВА Жанаталап)**	
Имена и должности сотрудников: медицинская сестра Цай Елена	
Population Served	3208
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	лиц-9, из них положительных- 2. мазки-27, из них положительных-6
Number of lab doctors	-
Number of Lab Technicians	- (медицинская сестра)
Number of other staff	
Total staff trained (where and when)	2003г. в районной лаборатории Уштобе
Sputum collection procedure (containers, instructions, safety)	стандартные контейнеры, инструкции согласно приказу 323/471 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	-
Small laboratory equipment *	
Laboratory glassware *	Имеются необходимые для приготовления фиксированного мазка
Number of binocular microscopes (condition and maintenance) *	-
Quality of smears	низкое
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Use of standard reporting scale	+ согласно приказу №323
Request for Sputum Exam used and filled in properly	+

Laboratory Register used and fill in properly	+
Bio-safety measures in place?	+
Disinfectants used	5% хлорамин
Contaminated waste disposal	приказ 323
Number of monitoring visits last 12 months	-
Feedback provided	
Laboratory manual and guidelines present	Приказ 323/471
	-приготовление мазков проводится пинцетом

Пункт фиксации мазков Каратальского района Алматинской области (СВА Жанаталап)

Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		-			
Этанол 95 % - технический сорт		-			
Концентрированная соляная кислота		-			
Хлорид метиленовый голубой		-			
Фенол		-			
Иммерсионное масло		-			
Ксилол		-			
Аурамин О		-			
KMnO4		-			
Метиловый спирт					
дезинфектант - гипохлорит натрия		5 % хлорамин			
Стеклянная посуда					
Бутылка для красителей 100мл					
Воронка 50ml					
Градуированные цилиндры 100 мл					
мензурка 250мл					
Мензурка 500мл					
оборудование					
Бинокулярный микроскоп					

Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		бикс			
Шкаф для хранения слайдов		+			
Часы					
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли					
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз		нет			
Фильтровальная бумага					
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм	+	-			
Контейнеры для сбора мокроты		+			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			

Форма учета собранных данных **Культуральная лаборатория**	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 29.11.04	
Наименование учреждения**: Бактериологическая лаборатория областного противотуберкулезного диспансера Алматинской области**	
Имена и должности сотрудников: 1. Заведующий лабораторией, областной координатор по лаборатории – Кусемисова Майя 2. Врач- лаборант Серебрякова Валентина Васильевна 3. Врач-лаборант Лаврова Ольга 4. Лаборант- Баланенко Татьяна 5. Лаборант- Жиембаева Татьяна 6. Лаборант Тобыкбаева Марал 7. лаборант Пак Ирина	
Population Served	Алматинская область
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Separate sections for: specimen reception; microscopy; media preparation; culture; decontamination; storage; administrative section	+
Reliable electrical supply	+
Reliable water supply	+
Organization of workflow	+
Workload (diagnostic and follow up)	**мазок**: обследовано лиц -1090, из них положительных- 100, количество мазков -3270, из них положительных-300 обследовано лиц -2778, из них положительных-642, количество мазков -5556, из них положительных-1284 **культура:** проведено посевов-6353, из них положительных-2607
Number of lab doctors	3
Number of Lab Technicians	4
Number of other staff	2
Total staff trained (where and when)	1 врач в 2003г на базе НЦПТ,

	остальные в 1998г Проект ХОУП/НЦПТ
Sputum collection procedure (containers, instructions, safety)	Сбор мокроты проводится в стационаре, Прием патологического материала проводится через отдельный вход стандартные контейнеры имеются, инструкции согласно приказу 323\471 вход в лабораторию имеет только персонал лаборатории
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	+ фирма «Вельд»
Reagents and supplies for fluorescent microscopy (quality, quantity and source)	-
Reagents and supplies for culture	+ фирма «Вельд»
Laboratory equipment	+
Media prepared in laboratory , how often?	1 раз в неделю среда Левенштейна-Йенсена
Quality of media	хорошее
Laboratory glassware	
Quality of smears	хорошее
Slide storage	+ согласно приказу №323
Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Decontamination procedure	автоклавирование(приказ 323/471)
Media used for culture	среда Левенштейна-Йенсена
Quality of culture	удовлетворительное
Frequency of culture examinations	ежедневно
Use of standard reporting scale	Мазок: приказ 323 Культура: методические рекомендации НЦПТ
Request for Sputum Exam used and filled in properly	Мазок: + Культура: +
Laboratory Register used and fill in properly	Мазок: + Культура: +
Bio-safety measures in place?	Биологический шкаф безопасности I класса
Disinfectants used	0,05 % аналит
Contaminated waste disposal	После автоклавирования(приказ 323/471)
Number of monitoring visits last 12 months	1 -НЦПТ, 1- Проект ХОУП
Feedback provided	+
Laboratory guidelines and manuals	Приказ 323/471 Руководства по лаборатории (WHO)
Preparation and distribution of reagents and supplies	лаборатория готовит самостоятельно
Training activities carried out by lab	нет

Research activities	
Reporting (to whom and frequency)	1 раз в год в НЦПТ
Remarks	- на базе лаборатории проводится переконтроль всех положительных и отрицательных мазков с периферийных лабораторий - при проведении контроля качества по микроскопии выдается общая информация - необходим тренинг по контролю качества и по культуральным исследованиям

Дополнительная информация по лаборатории , проводящей ТЛЧ

Method for DST used	метод абсолютных концентраций
Pure substances available	+
Indication for DST	
Additional training	-Базовый тренинг по микроскопии мазка мокроты, - Тренинг по контролю качества микроскопических исследований, -Тренинг по контролю качества культуральных исследований и ТЛЧ, -Тренинг по расчету реактивов, используемых для проведения микробиологических исследований, - Тренинг по проведению мониторинговых визитов Необходима разработка руководства по обучению и разработка обучающей программы
Proficiency testing	в 2004г. на базе НЦПТ прошли внешний контроль качества по DST. Результаты: совпадение по изониазиду (H) -93,7% стрептомицину (S) - 93,7% рифампицину (R) - 100% этамбутолу (E)- 87,5% по HR- 100%
Link with SRL	-
Information on previous treatment	+
DST Register patient/specimen based	+
Annual reports on DST	+
Наличие результатов ТЛЧ (период и устойчивые образцы)	

Областной противотуберкулезный диспансер Алматинской области Список лабораторных реагентов, реактивов и оборудования

Культуральная лаборатория

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
L-аспарагин		1500г			
Анилин					
Бром цинк BrCN					
Безводный двунатриевый фосфат водорода Na2 HPO4					
Глицерин		500 мл			
30% перекись водорода					
Цитрат магния		600 г			
Mg SO4, 7 H2O Сульфат магния		240 г			
Малахитовая зелень		300 г			
N - ацетил цистеин					
N-нафтилен диамин					
1-замещенный фосфат калия		2500 г			
Цитрат натрия					
Глутамат натрия					
NaOH Гидроокись натрия					
Гипохлорит натрия		1000 г			

Нитрат натрия					
Сульфаниламиды					
Три фосфат натрия					
Твин 80					
Лабораторная посуда					
Мензурка 100мл		+			
Мензурка 250 мл		+			
Мензурка 600 мл		+			
Лабораторная колба 2000ml		+			
Мензурка 1000ml		+			
Лабораторная колба 1000 ml		+			
Лабораторная колба 250 ml		+			
Лабораторная колба 500 ml		+			
Воронка 1000 ml		+			
Воронка 250 ml		+			
Воронка 50 ml		+			
Стеклянные бусы		+			
Стеклянные пробирки 16 X 100		+			
Стеклянные пробирки 16 X 160					
Градуированные цилиндры 10 ml		+			
Градуированные цилиндры 100 ml		+			
Градуированные цилиндры 1000ml		+			
Градуированные цилиндры 25 ml		+			
Градуированные цилиндры 500 ml		+			
пипетка 10ml		+			
Пипетка1ml		+			
Пипетка 5ml		+			
Бутылка для реактивов 1000ml		+			
Бутылка для красителей 100ml		+			
Оборудование					
Бактериологический термостат	+	1			
Миксер	+	-			

Люминесцентный микроскоп	+	-			
Свертыватель	+	1			
Ph метр					
Учебный микроскоп	+	-			
Весы		+			
Центрифуга		+			
Дистиллятор	+	+ (старый)			
Машина для мытья стеклянной посуды	+	-			
Горизонтальный автоклав		+			
Световые микроскопы		1			
Магнитная мешалка		-			
Печи/ паровоздушные стерилизаторы		+			
Холодильники		+			
БШБ 1 класса		+			
БШБ 2 класса		-			
Вертикальные автоклавы		+			
Сопутствующие материалы					
Аналитические весы		+			
Морозильник – 86^0 С		-			
Алюминиевая фольга		-			
Автоклавная лента		+			
Съемные центрифужные пробирки		+			
Вата		+			
Стеклянные пипетки (коробка)		+			
Мерные ложки		+			
Пастеровские пипетки		+			
Щетки для пипеток		+			
Резиновая груша	+	+			
Контейнер для транспортировки слайдов		+			

Лотки для контейнеров		+			
Штатив для пробирок - 16mm /10		+			
Штатив для пробирок 16mm /20					
Штатив для пробирок 16mm /48					
Измеритель мутности		+			

Дополнительные реагенты и оборудование для лаборатории, проводящей DST

Реагенты	потребность	наличие	В процессе (заказанные/ применение запланировано)	Дополнительные потребности	замечания
Морозильник – 86^0 C	+	-			
Аналитические весы, чувствительность - 0,0001		+			
Чистые субстанции:					
Этамбутол		+			
Изониазид		+			
Рифампицин		+			
Стрептомицин		+			

Форма учета собранных данных	
Микроскопическая лаборатория	
Лицо, ответственное за проведение оценки: Региональный специалист по лаборатории Проект ХОУП Д-р Мария Йончевска Координатор по лаборатории Проект ХОУП/Казахстан Токсанбаева Бекзат	
Дата: 30.11.04	
Наименование учреждения: **Микроскопическая лаборатория городской поликлиники г. Талдыкорган**	
Имена и должности сотрудников: Заведующая лабораторией Аханова Алия Залеловна Лаборант Сарсенбаева Бахыткуль	
Population Served	90 000
Condition of building	удовлетворительное
Condition of Laboratory	удовлетворительное
Reliable electrical supply	+
Reliable water supply	+
Workload (diagnostic and follow up)	Количество мазков -1230, положительных-84 обследовано лиц-410, положительных- 28. (2004 г. на момент визита) За 12 месяцев 2003г Количество мазков-1128, положительных-54 обследовано лиц-376, положительных- 18.
Number of lab doctors	-
Number of Lab Technicians	1
Number of other staff	1
Total staff trained (where and when)	1998 Проект ХОУП/НЦПТ
Sputum collection procedure (containers, instructions, safety)	Сбор мокроты проводится в специальном помещении стандартные контейнеры, инструкции согласно приказу 323/471 РК
Reagents and supplies for Ziehl Neelsen (quality, quantity and source)	+ фирма «Вельд»
Small laboratory equipment *	+
Laboratory glassware *	+
Number of binocular microscopes (condition and maintenance) *	монокулярный «Leica», увеличение 5х100
Quality of smears	низкое
Slide storage	+ согласно приказу №323

Participates in Proficiency Testing? (WHO recommended)	+ согласно приказу №323
Use of standard reporting scale	+ согласно приказу №323
Request for Sputum Exam used and filled in properly	+
Laboratory Register used and fill in properly	+
Bio-safety measures in place?	вытяжной шкаф не функционирует
Disinfectants used	0,05% аналит
Contaminated waste disposal	приказ 323
Number of monitoring visits last 12 months	7 визитов областного координатора по лаборатории
Feedback provided	+
Laboratory manual and guidelines present	Приказ 323/471
	1. обеспечение бинокулярным микроскопом хорошего качества 2. улучшить качество мазков

Городская поликлиника г.
Талдыкорган
Список лабораторных реагентов, реактивов и оборудования

Микроскопическая лаборатория
Городская поликлиника г.Талдыкорган

Реагенты	потребность	наличие	В процессе (заказанные/применение запланировано)	Дополнительные потребности	замечания
Основной фуксин		100.0 г			
Этанол 95 % - технический сорт		500 мл			
Концентрированная соляная кислота		500.0 г			
Хлорид метиленовый голубой		100.0 г			
Фенол		300.0 г			
Иммерсионное масло		300 мл			
Ксилол	+	нет			
Аурамин О		-			
KMnO4		-			
Метиловый спирт					
дезинфектант - гипохлорит натрия		0,05 % аналит			
Стеклянная посуда					
Бутылка для красителей 100мл		приспособленная посуда			
Воронка 50ml		+			
Градуированные цилиндры 100 мл		+			
Мензурка 250мл		+			
Мензурка 500мл		+			
оборудование					
Бинокулярный микроскоп	+	монокуляр			

Спиртовка		+			
Ведро для отходов		+			
Контейнер для транспортировки мокроты		бикс			
Шкаф для хранения слайдов		+			
часы		+			
Подставка для окрашивания		+			
Штатив для мазков (слайдов)		+			
Держатель проволочной петли		+			
Ножницы		+			
Пинцет		+			
Маркеры		карандаши по стеклу			
Сопутствующие материалы					
Бумажные салфетки для линз		нет			
Фильтровальная бумага		+			
Наклейки		-			
Деревянные палочки		-			
Никелированные – хромированные петли 1мм	+	+			
Контейнеры для сбора мокроты		+			
Слайды для микроскопов		+			
Перчатки		+			
Маски		+			