Table of Contents

INTRODUCTION

About the Alaska Tuberculosis Program Manual 1.2
- Purpose 1.2
- Audience 1.2

How to Use This Manual 1.3
- Portable document format 1.3
- Hyperlinks 1.3
- Cross-references 1.3
- Forms 1.3
- Bookmarks 1.4
- Printing 1.5
- Icons 1.6
- Abbreviations 1.7

Purpose of Tuberculosis Control 1.10
- Alaska Statutes and Regulations on Tuberculosis Control 1.11

Objectives and Standards 1.12
- Quality of care 1.12
- National and state program objectives 1.12
- National standards, guidelines and recommendations 1.14

Roles, Responsibilities, and Contact Information 1.15
- State tuberculosis program staff 1.15
- Local public health agencies 1.17
- Private medical providers 1.17
- Laboratories 1.18

Resources and References 1.19

SURVEILLANCE

Introduction 2.2
- Purpose 2.2
- Policy 2.5
- State statutes and regulations 2.5

Reporting Tuberculosis 2.6
- Reporting suspected or confirmed cases of tuberculosis to the Section of Epidemiology 2.9
- Tuberculosis case information to report to the Alaska TB Program 2.10

Data Collection 2.12
- Forms 2.12
- Computerized tuberculosis registry 2.12
- Document retention 2.13

Genotyping 2.14

Dissemination and Evaluation 2.15

References 2.16

TARGETED TESTING FOR LATENT TUBERCULOSIS INFECTION

Introduction 3.2
- Purpose 3.2
- Policy 3.2
- State laws and regulations 3.3

Tuberculosis Assessment / Screening of School Children 3.4

High-Risk Groups 3.6

When to Conduct Targeted Testing 3.8
- Approaches to increasing targeted testing and treatment for latent tuberculosis infection 3.8
- Screening for latent tuberculosis infection in facilities 3.9
- Alaska program standards for health care facilities, staff and long term care facilities 3.10

References 3.11

B NOTIFICATIONS

Introduction 4.2
- Purpose 4.2
- Pre-arrival medical screening for tuberculosis 4.2
- Overseas screening of applicants for immigration 4.4
- Policy 4.6

Follow-up of B1 and B2 Tuberculosis Arrivals 4.7

Division of Global Migration and Quarantine forms 4.7
Electronic disease notification process overview 4.7
Patient follow-up....4.8

Evaluation of B1, B2, and B Tuberculosis Arrivals....4.10
Evaluation activities....4.10
Treatment....4.12

Resources and References 4.13

DIAGNOSIS OF TUBERCULOSIS DISEASE

Introduction....5.2
Purpose....5.2
Policy....5.3
Forms....5.3

Tuberculosis Classification System....5.4

High-Risk Groups....5.5

Case Finding....5.7
Identifying suspected tuberculosis cases....5.7
Follow-up on suspected cases of tuberculosis....5.9

Diagnosis of Tuberculosis Disease… 5.11
Medical history 5.12
Human immunodeficiency virus screening....5.14
Physical examination 5.15
Tuberculin skin test and interferon gamma release assays....5.15
Chest radiography....5.16
Bacteriologic examination 5.17

Resources and References 5.20

TREATMENT OF TUBERCULOSIS DISEASE

Introduction....6.2
Purpose....6.2
Policy....6.2
Forms....6.3

Basic Treatment Principles 6.4

Treatment Regimens and Dosages 6.6
Regimens....6.6
Table 3: **DRUG REGIMENS FOR MICROBIOLOGICALLY CONFIRMED PULMONARY TUBERCULOSIS CAUSED BY DRUG-SUSCEPTIBLE ORGANISMS** 6.8
Dosages 6.9
Table 4: **DOSES OF FIRST-LINE ANTITUBERCULOSIS DRUGS FOR ADULTS AND CHILDREN** 6.10
Duration of treatment.... 6.12

Side Effects and Adverse Reactions 6.13
Basic monitoring steps 6.13
Reporting reactions 6.21
Monitoring for side effects and adverse reactions by anti-tuberculosis drug.... 6.21

Response to Treatment....6.22

Completion of Therapy 6.23
Figure 1: Management of Treatment Interruptions 6.24

Case Closing and End-of-Treatment Evaluation....6.25

Post-Treatment Evaluation 6.26

Treatment in Special Situations 6.28
Drug-resistant tuberculosis.... 6.29
Human immunodeficiency virus infection 6.30
Alcoholism 6.31
Restarting anti-TB medications in patients with drug-induced hepatitis 6.33
Figure 3: Restarting Anti-TB Medications in Patients with Drug-induced Hepatitis.... 6.34
Liver disease 6.35
Renal insufficiency and end-stage renal disease 6.35
Tuberculosis associated with tumor necrosis factor-alpha antagonists 6.36
Culture-negative pulmonary tuberculosis 6.36
Extrapulmonary tuberculosis 6.37
Pregnancy and breastfeeding 6.38

Resources and References 6.39

Quick Guide to Important Tuberculosis Treatment Resources

Table 3: **Drug Regimens for Microbiologically Confirmed Pulmonary Tuberculosis Caused by Drug-Susceptible Organisms** **6.8**

Table 4: **Doses of First-line Anti-tuberculosis Drugs for Adults and Children** **6.10**
Figure 1: **Management of Treatment Interruptions** **6.24**
Figure 3: **Restarting Anti-TB Medications in Patients with Drug-induced Hepatitis** **6.34**

DIAGNOSIS OF LATENT TUBERCULOSIS INFECTION

Introduction **7.2**
Purpose 7.2
Policy 7.2
Forms 7.3
Tuberculosis Classification System **7.4**
High-Risk Groups **7.5**
Diagnosis of Latent Tuberculosis Infection **7.8**
Mantoux tuberculin skin testing 7.9
Candidates for Mantoux tuberculin skin testing 7.10
Administration of the tuberculin skin test 7.13
Measurement of the tuberculin skin test 7.14
Interpretation of the tuberculin skin test 7.15
Human immunodeficiency virus screening 7.18
Follow-up activities 7.18
Interferon gamma release assays 7.17
Chest radiography 7.18
Chest X-ray interpretation and treatment 7.20
Work and school clearance 7.22
Resources and References **7.23**

TREATMENT OF LATENT TUBERCULOSIS INFECTION

Introduction **8.2**
Purpose 8.2
Policy 8.3
Forms 8.3
Who to Treat **8.4**
Window period prophylaxis for susceptible and vulnerable contacts 8.4
Tuberculin skin test results of 5 mm or more 8.6
Tuberculin skin test results of 10 mm or more 8.6
Treatment Regimens and Dosages **8.7**
Regimens 8.8
12-week Isoniazid-Rifapentine regimen 8.10
Dosages 8.10
Pyridoxine (Vitamin B6) 8.11
Adverse Effects of Drugs Used to Treat LTBI **8.12**
Reporting reactions 8.15
Monitoring for side effects and adverse reactions by anti-tuberculosis drug 8.16
Adherence **8.19**
Monthly assessment of adherence 8.19
Directly observed therapy 8.19
Completion of Therapy 8.21
Treatment in Special Situations **8.23**
Human immunodeficiency virus and latent tuberculosis infection 8.23
Alcoholism 8.24
Pregnancy and breastfeeding 8.26
Resources and References **8.27**

DIAGNOSIS AND TREATMENT OF LATENT TUBERCULOSIS INFECTION (LTBI) AND TUBERCULOSIS DISEASE IN CHILDREN (UNDER 16 YEARS OF AGE)

Introduction **9.2**
Purpose 9.2
Background 9.3
Pathogenesis of tuberculosis 9.3
Latent Tuberculosis Infection (LTBI) **9.5**
Diagnosis of latent tuberculosis infection 9.5
Candidates for testing for tuberculosis infection 9.5
Administration and interpretation of the TST 9.6
Interferon-Gamma release assays 9.8
BCG Vaccine 9.8
Management of children with a positive IGRA or TST 9.10

Treatment of Latent Tuberculosis Infection (LTBI) 9.11
LTBI treatment regimens and dosages 9.13
Dosages……....9.14
Monitoring 9.15
Side effects and adverse reactions 9.15
Pyridoxine (Vitamin B6).....9.16
Window Period prophylaxis.....9.16

Diagnosis of Tuberculosis Disease.... 9.18
Medical history 9.18
Physical examination 9.18
Radiology 9.19
Bacteriologic testing 9.20
Gastric aspirates 9.20
Sputum collection.....9.21
Bronchoscopy 9.21

Treatment of Tuberculosis 9.22
Basic principles 9.22
Treatment regimens and dosages 9.22
Regimens 9.22
Duration of treatment 9.23
First-line TB drugs.....9.26
Pharmacology and adverse reactions.....9.26
Monitoring response to treatment…….9.27
Medication side effects and adverse reactions…… .9.27
Pyridoxine (Vitamin B6)……..9.28
Response to treatment…… ..9.28
Completion of treatment.....9.29

Special issues..... 9.30
Isolation of children with tuberculosis disease ...9.30
Child care and schools.....9.30
Source case investigations 9.30

Drug Delivery Options 9.31

Resources and References 9.33

CASE MANAGEMENT

Introduction..... 10.2
Purpose.....10.2
Policy.....10.3
Forms.....10.4
TB case management timeline.....10.5

Initial Assessment..... 10.6
Cultural sensitivity and language issues 10.6
Patient's medical records 10.7
Assessment site 10.7
Hospital discharge planning 10.8
Travel 10.11
Initial assessment activities 10.12

Treatment Plan.....10.17
Treatment plan components..... 10.18
Planning activities..... 10.18
Implementation activities 10.19
Ordering medication for the treatment of TB .. 10.21

Ongoing Assessment and Monitoring.....10.23
Ongoing assessment activities..... 10.23
Monitoring side effects and adverse reactions 10.27
Activities to monitor for side effects and adverse reactions 10.27
Monitoring bacteriologic improvement..... 10.28
Activities to monitor for bacteriologic and clinical improvement..... 10.28

Completion of Therapy 10.32
Verifying adequate course of treatment 10.32
Calculating completion of therapy 10.32
Documenting completion of treatment and follow-up recommendations 10.33
Case closures other than completion of therapy 10.33

Evaluation.....10.35
Evaluation activities..... 10.35

Directly Observed Therapy (DOT).....10.37
Candidates for directly observed therapy..... 10.37
Face-to-face and video DOT 10.38
How to deliver directly observed therapy 10.38
DOT Aides, regimens, and payment for DOT.. 10.39
Adherence to directly observed therapy..... 10.41

Incentives and Enablers 10.43

Medical Orders.....10.44
Progressive interventions 10.44

Resources and References 10.45

CONTACT INVESTIGATION

Introduction.....11.2

Purpose 11.2
Policy 11.3
Forms 11.4

Structure of a Contact Investigation 11.5
Basic steps of a contact investigation 11.5
Contact investigation plan 11.5

Decision to Initiate a Contact Investigation 11.6
Factors predicting transmission of tuberculosis 11.6
Deciding to initiate a contact investigation 11.8

Time Frames for Contact Investigation 11.12
Information about the index patient and transmission sites 11.12
Contact evaluation and treatment 11.14
Ongoing management activities 11.15

Infectious Period 11.17

Index Patient Interviews 11.19
Pre-interview preparation 11.19
General guidelines for interviewing an index patient 11.20

Field Investigation 11.21

Contact Priorities 11.23
Index patient with positive acid-fast bacilli sputum smear results or cavitary tuberculosis 11.24
Index patient with negative acid-fast bacilli sputum smear results 11.25
Index patient with negative bacteriologic results and abnormal chest radiographs not consistent with tuberculosis 11.26

Contact Evaluation, Treatment, and Follow-up 11.27
Immunocompromised contacts and children under 5 ..... 11.28
Immunocompetent adults and children 5 and older (high- and medium-priority contacts) 11.30
Contacts with prior positive tuberculin skin tests 11.32

When to Expand a Contact Investigation 11.34
Guidelines for expanding an investigation 11.34
Low-priority contacts 11.35

Data Management and Evaluation of Contact Investigations 11.37
Reasons contact investigation data are needed 11.37
Index patient and contact data 11.39
Evaluation of a contact investigation 11.41

Outbreak Investigation 11.42
Definition of a tuberculosis outbreak 11.42
Deoxyribonucleic acid genotyping 11.42

Resources and References 11.44

LABORATORY SERVICES

Introduction 12.2
Purpose 12.2
Policy 12.2

Laboratory Contact Information 12.3

Available Laboratory Tests 12.4

Specimen Collection 12.8
How to perform spontaneous sputum collection at a healthcare facility 12.10
How to direct a patient to perform spontaneous sputum collection at home 12.11
Induced sputum collection at a healthcare facility 12.11
How to collect gastric aspirates 12.12
Bronchoscopy or collection of extrapulmonary specimens 12.12

Specimen Shipment 12.13

Resources and References 12.15

PATIENT EDUCATION

Introduction 13.2
Purpose 13.2
Policy 13.2

General Guidelines 13.4

Education Topics 13.5
Language and comprehension barriers 13.5
Medical diagnosis 13.6
Contact investigation 13.7
Isolation 13.7
Side effects and adverse reactions 13.7
Adherence 13.8

Patient Education Materials 13.9

Resources and References **13.10**

CONFIDENTIALITY

Introduction **14.2**
Purpose 14.2
Policy 14.2

Health Insurance Portability and Accountability Act (HIPAA) **14.3**
Centers for Disease Control and Prevention guidance on HIPAA 14.3
Alaska HIPAA policies 14.3

National Guidelines **14.4**

Resources and References **14.5**

TRANSFER NOTIFICATIONS

Introduction **15.2**
Purpose 15.2
Policy 15.2

When to Initiate a Notification **15.4**

How to Issue a Notification **15.5**
Transfers in the U.S. 15.5
Transfers outside the U.S. 15.7

References **15.10**

SUPPLIES AND SERVICES TABLE 16

INFECTION CONTROL

Introduction **17.2**
Purpose 17.2
Policy 17.3

Hierarchy of Infection Control Measures **17.4**
Administrative controls 17.4
Environmental controls 17.6
Personal respiratory protection 17.7

Who Should Use a Mask or Respirator **17.10**

Employee Health **17.11**
Two-Step tuberculin skin testing 17.11
Screening for persons with previously positive TST 17.14

Isolation **17.15**
Estimating infectiousness 17.16
Determining noninfectiousness 17.16

Airborne Infection Isolation in a Healthcare Facility **17.18**
When to initiate airborne infection isolation 17.19
When to discontinue airborne infection isolation 17.20

Hospital Discharge **17.22**
Drug-susceptible tuberculosis disease 17.22
Multidrug-resistant tuberculosis disease 17.25
Release settings 17.25

Residential Settings **17.26**
Administrative controls in the patient's home 17.26
Environmental controls in the patient's home 17.27
Respiratory protection in the patient's home 17.27
Other residential settings 17.28
Return to work, school, or other social settings 17.29

Tuberculosis Infection Control in Patient Care Facilities **17.31**

Transportation Vehicles **17.33**
Patient self-transport 17.33
Transport by healthcare workers 17.33
Transport by emergency medical services 17.33

Resources and References **17.34**

FORMS 18

STATUTES AND REGULATIONS

Introduction **19.2**
Purpose 19.2

Conditions Reportable to Public Health Manual **19.2**

Regulations **19.3**
Infection Control 19.3
Employee Health Programs 19.3
School Screening 19.6

Resources and References 19.8

GLOSSARY 20