Alabama Department of Public Health
Bureau of Communicable Disease
Division of TB Control

Tuberculosis Elimination and Laboratory Cooperative Agreements

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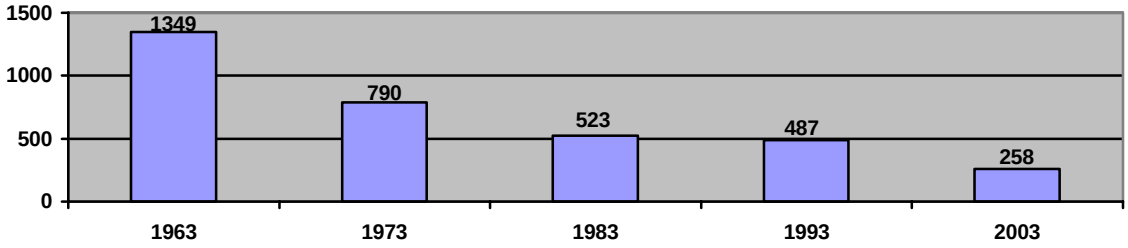
Project Narrative – TB Prevention & Control

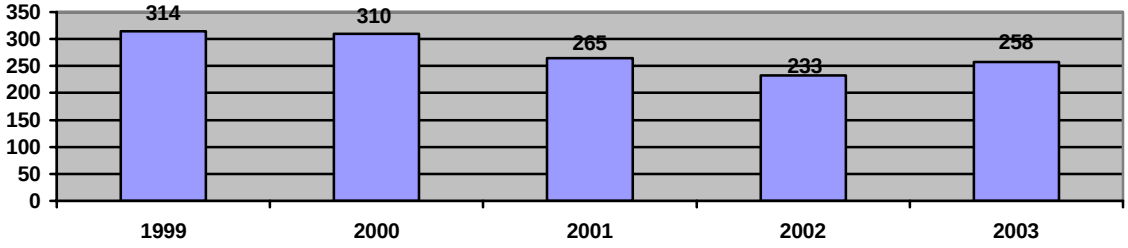
The ultimate goal of the Division of TB Control (DTBC) is to eliminate tuberculosis in Alabama. Until that goal is reached, the DTBC strives to reduce the annual burden of disease, limit transmission, and prevent future cases through the provision of diagnostic, treatment, and case management activities. The DTBC provides these services to all persons in Alabama, regardless of the ability to pay. This commitment to the citizens of Alabama has contributed to the historic decline in morbidity noted below.

Historical Trend of Tuberculosis Cases in Alabama



However, in 2003 the DTBC verified and reported 258 cases of active TB disease. This figure represents an increase of 25 cases (10.7%) from 2002, and is the first increase recorded since 1996.

Tuberculosis in Alabama - 1999 through 2003



The DTBC closely monitors the incidence of disease and notes that 7 of the 11 public health areas in Alabama reported increases in active TB disease during 2003. Analysis reveals that the African-American community continues to bear a disproportionate burden of this disease. While conducting evaluations of case management practices, the DTBC has learned that the diagnosis of TB may be delayed in settings that serve this community – a factor that may contribute to additional transmission and the development of secondary cases. Often, an otherwise healthy patient is treated empirically for "bronchitis" or "pneumonia" and TB is not suspected until one or more attempts to treat the patient have failed.

Recognizing the need to help our external partners "Think TB," the DTBC expanded training opportunities for health care providers in the private sector in 2003. Adjustments in the Annual
Training Plan will continue to be made as a result of lessons learned during the DTBC's on-going Quality Assurance process. Health care providers serving communities that are disproportionately impacted by TB receive priority consideration for training, and providers across the state are encouraged to refer patients who present with persistent cough, or chest pain accompanied by weight loss. Placement of a tuberculin skin test, as well as collection of sputum to "rule out" TB, should be considered for patients with these symptoms. Hospitals and private providers may refer patients with such symptoms to the health department, and Alabama Public Health Law mandates the reporting of diagnosed cases of TB.

The DTBC provides the afore-mentioned services through 67 county health departments located in 11 public health areas. In each area, a TB team may include an Area Manager, Disease Intervention Specialist, Public Health Nurse, and an Administrative Support Assistant.

Although funding limits and budget cuts have reduced the number of staff in our program, the remaining personnel are charged with the responsibility to implement and execute tuberculosis control activities.

These financial constraints necessitate prioritization of activities. Patient priorities have been established, reviewed, and approved by our TB Medical Advisory Council, and each Area Manager is empowered to assess and determine the need for directly observed therapy (DOT) on a case-by-case basis.

The Annual Progress Report to CDC includes highlights of cooperative agreement awardee activities and progress toward the national objectives. The DTBC also provides a yearly update in the Annual Report for the Alabama Department of Public Health (ADPH). This venue provides an annual surveillance summary to providers across the state. Weekly morbidity reports are also generated for the Area Physicians, TB staff, and other interested parties.

Alabama has a long history of providing quality care to TB patients and their communities. Both the individual and the community benefit from appropriate case management and timely contact investigations. The contact investigation process identifies persons at risk of TB exposure and

infection. Prompt treatment of cases and timely identification of contacts provides the opportunity to limit spread of disease and prevent future cases by treating those with latent TB infection (LTBI).

In order to assure that the highest priority activities are addressed during the upcoming project period, please review the following proposal for "core" TB control activities in Alabama.

A. TB Prevention and Control

1. Completion of Therapy (COT): Treatment of persons with active TB disease is the highest priority activity for our program. Prompt initiation of therapy for persons with active disease is the most efficient means of interrupting transmission of TB. Use of DOT has proven instrumental in achieving high rates of completion of therapy. However, the DTBC has been forced to prioritize use of DOT due to fiscal constraints (e.g., budget cuts and level funding). For the four-year period outlined below (2003 is incomplete), Alabama achieved a completion of therapy average of 89.9%.

    a. Baseline Data

Year	1999	2000	2001	2002	2003
Percent Complete	94.9%	88.3%	82.4%	94%	* 76.1

* Incomplete (half-year only)

    b. Objectives: Given the year-to-year volatility of the baseline data presented above, the DTBC will use the ~90% average for completion of therapy as the "starting point" for objectives during the upcoming project period. As indicated below, the DTBC objectives for 2006 and beyond will be gradually increased to a final (Year 2009) goal of 95%.

Year	2005	2006	2007	2008	2009
Target Objective	90%	92%	94%	95%	95%*

* Program Objective – Achieve and maintain 95% COT

    c. Methods: The DTBC will achieve the objectives stated above by employing the following three strategies:

(i) The Area Physician will review the status of all patients at initiation of therapy, in the third month of therapy, and at the close of therapy. The Area Manager will be responsible for gathering the records and presenting them to the physician. This review process is expected to assure that ATS/CDC approved regimens are in place, reduce the number of patients
kept on therapy longer than necessary, and expedite the closure of patients in the automated registry.

(ii) Patient-centered case management will be reinforced to assure that problems with adherence to the regimen or medication intolerance are identified and addressed as early as possible to avoid delays in conversion of sputum. Since the performance of individual staff dictates the overall achievement for each public health area, it is in the Area Manager's best interest to assure that his/her staff are using all available tools (e.g., education, motivation, incentives, and enablers) to help patients through therapy.

(iii) Quarterly cohort reviews will be conducted for each public health area by the Deputy Director for Field Services. The initial review will be performed electronically via analysis of data from the Report of Verified Case of Tuberculosis (RVCT), followed by communication with area staff, and site visits as necessary.

d. Evaluation:

(i) Accountability rests with the Area Manager for meeting this objective in his/her Area. The Area Manager is expected to review all cases and suspects at least monthly and present patient information to the physician as indicated in Method (i) above. The Annual Progress Report to CDC, as well as the DTBC Quality Assurance process, includes a written report that tracks each area's progress toward the objectives in the cooperative agreement. The report will include highlights of successes and plans for corrective steps if objectives are not met. This report is shared with local and state health officials.

(ii) Assignment of patients to a specific staff member assures accountability, and each staff member is responsible for the case management of his/her patients. Problems that contribute to delays in completion of therapy are to be brought to the attention of the Area Manager immediately. Standard regimens (e.g., ATS/CDC recommended number of doses) for uncomplicated patients are set and approved by the Medical Advisory Council. Standardization of therapy facilitates the monitoring of therapy. Initiation and

continuity of therapy is tracked via hard-copy and electronic record review.

(iii) The Deputy Director for Field Services is responsible for the quarterly cohort reviews and annual Quality Assurance visits. Copies of the written reports are to be provided to the Director, DTBC and others. As indicated
above, the QA process involves a review of each performance objective listed in the cooperative agreement, and a sample QA report is included as Attachment "A." Progress will be documented via the Annual Progress Report to CDC.

2. Drug Susceptibility Testing (DST):

a. Baseline Data: All patients with positive bacteriology have an initial DST performed. Subsequent DST can be requested at any time by the physician. As a matter of protocol, all patients who remain culture positive after three months of therapy will have additional DST performed by the TB Laboratory.

The baseline data presented below reflects the proportion of sputum-culture positive patients with DST performed:

Year	1999	2000	2001	2002	2003
Percent w/DST	98.9	98.9	98.8	99.2	99.2

b. Objectives: Given the achievement listed above, the DTBC objectives will be to maintain the provision of DST for all sputum culture positive patients at 98% (or greater) during the upcoming project period. Maintaining a high level of performance for this objective is critical to assure that appropriate therapeutic regimens are prescribed and that surveillance for the emergence of drug resistance is maintained.

Year	2005	2006	2007	2008	2009
Target Objective	98+%	98+%	98+%	98+%	98+%

c. Methods: The DTBC will assure that this objective is met by:

(i) reinforcing the need for collection of sputum specimens as an integral part of the case management process

(ii) establishing and maintaining close communication with other laboratories for surveillance purposes, as well as obtaining

specimens submitted to outside providers for DST by the TB Laboratory

d. Evaluation: The Area Managers and TB laboratory staff are to be commended for the manner in which this objective has been met in the past. For the upcoming project period, the Area Managers will continue to review the progress of each patient via regularly scheduled case management updates from his/her assigned staff. Progress will be documented via the Annual Progress Report to CDC.

For additional information on laboratory activities, refer to Item B, TB Public Health Laboratory, on Page 22.

3. Contacts – Initiation of Treatment and Completion of Therapy: Identification, evaluation, and treatment of contacts is a core activity, and is the second highest priority for our program. DTBC contact treatment and completion data has been abstracted from the Aggregate Report for Program Evaluation (ARPE) and is provided below.

a. Baseline Data:

Year	1999	2000	2001	2002	2003
% Initiated	90%	81%	91%	70%	n/a
% Completed*	75%	82%	85%	45%	n/a

* Percent completed based on those initiated

The combined effect of state budget cuts and level funding from CDC has contributed to erosion in our ability to follow contacts. Loss of personnel and reduction in travel allocations has significantly reduced the number of patients who are started on preventive therapy. These same financial constraints have forced the DTBC to prioritize case management activities, with the emphasis being placed on continuity and completion of therapy for patients with active TB disease. Without additional funding, the erosion in treatment of contacts is expected to continue.

b. Objectives: The DTBC proposes the following objectives for contacts to AFB sputum smear and/or culture positive cases. The 2005 objective reflects the four-year average achieved above.

Year	2005	2006	2007	2008	2009
% Initiated	83%	85%	* 90%	* 90%	* 95%
% Completed	72%	75%	* 80%	* 85%	* 85%

* Additional resources required to achieve

The objective proposed for 2006 is felt to be our "achievement ceiling" without additional support from CDC. The objectives listed for 2007 and beyond can only be entertained if such resources are found.

c. Methods: The Area Manager is responsible for the review of contact investigations performed by his/her staff. Special emphasis will be placed on cases with fewer than ten contacts, and re-interview is required. The contact investigation process utilized in Alabama is consistent with guidance from CDC, and specific tools have been developed by the DTBC (e.g., Epidemiologic Worksheet, Concentric Circle Analysis) to assist staff conducting these investigations. Copies of the tools are provided as Attachment "B." The DTBC proposes the following methods to achieve the objectives listed above.

(i) The Area Manager will review all contact investigations performed by his/her staff within ten working days of assignment.

(ii) The Area Manager will note performance gaps and make recommendations for improvement by documenting on the Epidemiologic Worksheet.

(iii) The Area Manager will calculate a contact index, infected index, treatment initiated index, and treatment completed index for each reported case of TB with sputum smear and/or culture positive for AFB.

Should CDC make additional funding available, the following method will be implemented:

(iv) The DTBC will recruit and fill 2-3 DIS positions to bolster contact investigation and treatment activities.

d. Evaluation: The Area Manager is responsible for the timely review of all case/suspect interviews and contact investigations. The ARPE report for contact follow-up will be used to monitor performance at the area and state levels.

4. High-Risk LTBI: Lessons learned from the Targeted Testing projects highlighted the need to "partner" with other agencies to successfully treat populations at increased risk for TB disease. Based upon the escalating TB case rate (listed below) in the Alabama Department of Corrections (DOC), first priority has been assigned to the DOC. The DOC houses 27,000 inmates yet approximately 100,000 inmates rotate between the system and the community in a given year.

The potential for positive impact in both prison *and* community settings reinforced the decision to focus our efforts on this population.

Year	1999	2000	2001	2002	2003
Rate/100,000	3.8	7.7	11.5	23.1	23.1

a. Baseline Data: During 2003, the DTBC measured adherence to therapy for LTBI in two separate DOC settings where contact investigations revealed recent transmission. Noting that recent infection constitutes a "high-risk" for progression to disease, a strict definition for "adherence" and "completion" was applied. Medical records were reviewed weekly, then monthly, to monitor adherence to the regimen. The reviews quickly illustrated a difference between the daily "pill call" administered by DOC and our definition of DOT. While the national objective for completion of therapy for LTBI is 85%, the completion rates observed in these two settings were 32.8% and 38.7%. Meetings were held with DOC administrators, facility wardens, and the contract health care provider to share documentation of the problems identified, clarify expectations, and propose remedial actions. The DTBC took a lead role in gaining "buy in" for corrective action at DOC (e.g., appropriate observation of therapy, initiating recall procedures for inmates who miss a dose, and accurate documentation in medical records).

b. Objectives: The objectives listed below reflect DTBC targets for increasing the percentage of high-risk inmates who complete therapy for LTBI.

Year	2005	2006	2007	2008	2009
% Completed	35%	40%	45%	50%	* 55%

* 55% is considered to be a realistic and achievable objective

c. Methods: Maintain and expand the improved relationship with DOC in our steps toward the national average (~60%) for completion of therapy for LTBI. Although we do not anticipate reaching the national average by 2009, the following actions will be implemented during the upcoming project period in our efforts to reach the 55% threshold:

(i) The DTBC Nurse Consultant will establish and maintain routine meetings with the contract health care provider for DOC.

(ii) A communication tool detailing formal lines of communication between the DTBC, DOC and the contract health care provider will be drafted, reviewed, and distributed.

(iii) Education and training regarding treatment for LTBI will be provided to DOC administrators and staff via the Annual Training Plan.

(iv) Develop and implement a protocol for the identification and treatment of inmates at high-risk for progression to disease.

d. Evaluation:

(i) Chart reviews will be conducted for all inmates who are tuberculin skin-test positive *contacts* to active disease. DTBC staff will review and document the number of doses received on a weekly (x 4 weeks), then monthly, basis through completion of therapy.

(ii) Chart reviews will be conducted for all tuberculin skin-test positive *HIV positive* inmates. DTBC staff will review and document the number of doses received on a weekly (x 4 weeks), then monthly, basis through completion of therapy.

(iii) Utility of the communication tool between the DTBC, DOC, and the contract health care provider will be evaluated following each report of suspected TB.

(iv) Regularly scheduled meetings between the DTBC, DOC, and the contract health care provider will be arranged to discuss progress toward the objective. Identified strengths and weaknesses will be reviewed, and process adjustments will be made as indicated to retain our focus on the objective.

5. Immigrants and Refugees: The DTBC received an average of 16.6 TB notifications per year between 1998 and 2002. The TB Registry Supervisor reviews and forwards the notifications to Area TB staff for follow-up, and file copies are retained in the DTBC. According to records kept by the Refugee Health Coordinator, a yearly average of 5 persons (30%) were found and evaluated, and 3.2 persons (64%) of those were started on therapy during this five-year period.

a. Current Activities: All B1/B2 TB notifications are tracked through the collaborative efforts of the TB Registry Supervisor and the Refugee Health Coordinator. As indicated above, the success rate for finding and evaluating these persons is 30%. Once found and evaluated, the rate for initiation of treatment is reported as 64%. Communication and interaction between Refugee Health and the DTBC have always been positive, and renewed emphasis on TB notifications in this cooperative agreement presents an opportunity for that relationship to grow even closer.

b. Objectives: The initial objective for 2005 may be summarized as "lose no ground" while an assessment of current activities is performed. The assessment to be conducted in 2005 will include a review of the referral mechanism and the timeliness of response from staff in the field. Following assessment of the current system and response times, recommendations for adjustments will be made as needed. For 2006 and beyond, the DTBC proposes to gradually increase the number/percent of Immigrants and Refugees who receive evaluations and initiation of therapy.

Year	2005	2006	2007	2008	2009
Target: Evaluation	30%	35%	40%	45%	50%
Target: Therapy	64%	67%	70%	72%	75%

c. Methods: During the first six months of 2005, the DTBC Director and Refugee Health Coordinator will:

(i) review the current referral mechanism and perform an audit of field staff response times

(ii) prepare a report containing findings and recommendations to the Bureau Director who oversees both activities

(iii) adjust the referral mechanism as approved by the Bureau Director in order to meet the objectives listed above

d. Evaluation: As described above in "Current Activities" the DTBC maintains file copies of each notification sent to the field. In order to monitor and evaluate the adjustments (post-review), the DTBC will establish a "tickler file" for all TB notifications. Follow-up queries will be generated to the appropriate Area Manager to assure that information (found, evaluated, treatment initiated, etc.) is returned to CDC in a timely manner.

6. U.S. Born Minorities: Analysis of RVCT data collected by the DTBC illustrates the disproportionate impact of TB among minorities in Alabama. For example, African-American persons comprise 25% of the total population yet account for 52.6% of reported TB cases from 1999 to 2003. A comparison of annual TB case rates for African-American and White persons is provided below.

a. Baseline Data: Annual Number, Percent, and Case Rate per 100,000 Population for African-American (AA) Persons vs. Case Rate for White (W) Persons

Year	1999	2000	2001	2002	2003
AA #	149	173	122	120	147
AA %	47%	55%	46%	51%	57%
AA rate	12.9	15	11	10.4	12.7
W rate	4.3	3.6	3.5	3.2	3.1

While conducting evaluations of case management activities, the DTBC has learned that the diagnosis of TB may be delayed in settings that serve this community, a factor that may contribute to additional transmission and the development of secondary cases. Often an otherwise healthy patient is treated empirically for "bronchitis" or "pneumonia" and TB is not suspected until one or more attempts to treat the patient have failed.

Recognizing the need to help our external partners "Think TB," the DTBC expanded training opportunities for health care providers in the private sector in 2003. Adjustments in the Annual Training Plan were made as a result of lessons learned during the Division's ongoing Quality Assurance process. Health care providers serving communities that are disproportionately impacted by TB received priority consideration for training.

b. Objectives: The five-year average for TB disease among African-Americans in Alabama is 12.4 cases per 100,000. The DTBC proposes this figure as the "starting point" for efforts to reduce the annual case rate as listed below:

Year	2005	2006	2007	2008	2009
Target Objective	< 12.4	< 11.9	< 11.4	< 10.9	< 10.4

c. Methods: The DTBC proposes the following "three-tiered" approach to reduce the TB case rate for this population:

(i) The DTBC will continue to expand training opportunities for health care providers serving African-American communities. Reducing "diagnostic delays" is critical to the interruption of transmission and the prevention of secondary cases. Timely diagnosis also facilitates timely initiation of contact investigations, the second tier of this approach.

(ii) Timely initiation of contact investigations allows TB staff to identify, evaluate, and treat latent TB infection – thus *preventing* secondary cases. However, this high-yield activity is dependent upon the ability of staff to operate across linguistic, cultural, and economic boundaries. In recognition of this fact, the DTBC will partner with the ADPH Office of Minority Health to develop a "cultural competency" component within the Annual Training

Plan. Consultation will also be sought from nationally-recognized universities in Alabama (Tuskeegee, Alabama State, etc.) who have traditionally served the African-American community.

(iii) The third tier of the DTBC approach links the incarceration rate among African-Americans (more than 2-to-1 vs. all others) and the low completion rates for LTBI among inmates as previously described. Failure to complete treatment for prison-acquired infection/disease contributes to the disproportionate impact of TB in minority communities across Alabama. Recognizing the potential positive impact of successful treatment of a "captive audience," the DTBC and DOC developed an aggressive protocol for the treatment of TB infection/disease. During the upcoming project period, the TB Screening and Treatment Protocol will be implemented.

d. Evaluation: The DTBC will measure the success of the approach listed above by:

(i) Provider Education

2005 - The DTBC Medical Consultant will assist in the development of a "Grand Rounds" presentation for emergency room providers serving the major metropolitan areas of the state. Presenting a "trial run" for DTBC staff will constitute successful completion of this objective for Year 1.

2006 - The DTBC Medical Consultant will deliver the "Grand Rounds" presentation in at least two of the four major metropolitan areas (e.g., Huntsville, Birmingham, Montgomery, and Mobile).

2007-2009 The DTBC Medical Consultant will deliver the "Grand Rounds" presentation in the four major metropolitan areas each year.

(ii) Cultural Competency

2005 – The DTBC will schedule and conduct at least four meetings with the Office of Minority Health regarding the development and addition of a cultural competency component to the Annual Training Plan for staff involved in contact investigations.

2006 – The DTBC and Office of Minority Health will present the component to a focus group comprised of university faculty and student advisors. The focus group will provide feedback regarding acceptability and applicability.

2007 – 2009 The DTBC will conduct at least one five-day training event per year that will include the cultural competency component.

(iii) Completion of Therapy for LTBI: As in the previous discussion of efforts to treat high-risk LTBI, chart reviews will be utilized as the primary method of evaluation. The reviews will be conducted for all inmates who are contacts or HIV positive. DTBC staff will review and document the number of doses received on a weekly (x 4 weeks), then monthly, basis through completion of therapy.

7. HIV Testing: The treatment failure of co-infected patients in 2003 and 2004 emphasized the importance of appropriate testing and treatment of persons in our care. This concern has prompted the Medical Advisory Council to study the feasibility of "implied consent" with regard to obtaining HIV serology on each TB patient. In recognition of the unique needs of the HIV positive patient, referrals for specialized services are mandatory.

   a. Baseline Data: The figures below reflect the percent tested of all confirmed cases, regardless of age.

Year	1999	2000	2001	2002	2003
% Tested	78%	70.6%	76.5%	78.5%	74%

   b. Objectives: The five-year average for HIV testing of all cases is 75.5%. This figure exceeds the FY 2000 objective to obtain HIV status for 75% of persons aged 25-44. Given the success of our program during the preceding five years, the DTBC proposes this figure as the "starting point" for the target objectives listed below.

Year	2005	2006	2007	2008	2009
Target Objective (≥15 yrs)	75.5%	80%	85%	90%	* ≥ 90%

* The DTBC proposes that ≥ 90% is an appropriate target objective

   c. Methods: Collection of blood for HIV testing is considered the standard of care by the DTBC – this decision is based on advice from the Medical Advisory Council. Currently, "informed consent" is required prior to testing. However, the Council is now evaluating the need and implications of instituting HIV testing "across the board" in accordance with the "implied consent" rule. It is the Council's opinion that patient

consent for treatment implies consent for all testing necessary to determine the most appropriate treatment regimen (e.g., duration, frequency, etc.).

(i) Training is currently provided for staff to provide HIV counseling and testing following informed consent from the patient. These activities will continue until such time as implied consent is ruled valid.

(ii) Should the concept of implied consent be approved, training will then be provided to all staff regarding implementation.

d. Evaluation: The DTBC will continue to monitor the percentage of patients who receive HIV testing.

8. Human Resource Development

a. Current Activities: The DTBC has historically provided orientation and training for new staff as well as continuing education for existing staff. These activities have been coordinated on a statewide basis by a part-time training coordinator as well as by local area staff on an "as needed" basis. Examples of currently available training include TB 101, TB Interviewing & Influencing, periodic TB Updates, and training via satellite. The DTBC also provides educational opportunities for the following external partners: law enforcement/correctional officers; Infection Control Practitioners; and the staffs of hospitals, nursing homes, homeless shelters, substance abuse centers, and other residential settings.

b. Objectives:

(i) Assign full-time responsibility: The provision of Supplemental Funds in this cooperative agreement will enable the DTBC to meet this requirement. The part-time training coordinator described above will now coordinate these activities on a full-time basis. The Coordinator will be based in the central office and will be expected to travel throughout the state in order to fulfill the expectations of this new position.

(ii) TB-ETN: Anticipating the move to a full-time training position, the current training coordinator has enrolled in the Education and Training Network sponsored by CDC. The Coordinator will attend the annual TB-ETN workshop held each year in Atlanta and will remain engaged with the network throughout the year via email, web conferences, and phone conferences.

(iii) Training Plan: The current DTBC Annual Training Plan is provided as Attachment "C." Goals addressing improvement and expansion of training during the upcoming Project Period are detailed below:

(1) Establish/improve existing training: As indicated in Attachment "C," the DTBC already has an established training program. During the upcoming project period, the DTBC will review and adjust the Annual Training Plan to address current and projected staff needs and the needs of external partners in the community, develop multi-media training, and align the Plan with TB-ETN focus and recommendations (e.g., Human Resource Strategy Plan).

2005 – By June 30, conduct a needs assessment and review of the current training plan. By December 31, present results and recommendations from the review process to the Division, Bureau, and Medical Advisory Council. Upon approval, the Plan will be forwarded to the DTBE Program Consultant and Health Educator at CDC for review.

2006 – During Year 2, revise and implement training plan based on recommendations made during Year 1, and conduct one major training event (e.g., TB 101, TB 2I, TB Rx, TB Update) per quarter.

2007 – In Year 3, maintain quarterly training events and *initiate* collaborative efforts with the Office of Health Promotion and Communications, Office of Minority Health, and the department of communications in local universities to draft, script, and produce the first in a series of multi-media tools to meet educational needs specific to the State of Alabama.

2008 – 2009 Maintain established quarterly training events and pilot initial multi-media tools. Using feedback from pilot tests, make adjustments as needed and distribute tools accordingly.

(2) Establish/improve evaluation of training: The DTBC currently evaluates existing training events via two methods, (1) student evaluations and (2) faculty/facilitator de-briefing. The full-time Training Coordinator will work with TB-ETN, Bureau of Health Promotion, Office of Minority Health, and others to improve the capture and analysis of participant feedback following training events.

(3) Establish/improve patient education: The DTBC currently addresses patient education in TB 101 and TB 2I training events. A review of the syllabus for each class reveals the need to expand discussion regarding assessment of the patient's ability to comprehend and to "tailor" patient education to address the individual need.

(4) Coordinate training with STD and HIV: The DTBC currently conducts a one-day "Communicable Disease" training event for correctional officers, law enforcement, and first-responder staff. This training event addresses standard precautions for blood-borne pathogens as well as personal respiratory protection. Staff from the Division of HIV/AIDS and the Office of Emergency Preparedness work closely with the DTBC Training Coordinator in planning and conducting this class. Cross-program training conducted with STD staff has been provided on an "as-needed" basis.

(5) Target other health care providers and organizations serving high-risk populations: As indicated in the Annual Training Plan, the DTBC has provided training events for DOC staff, County Jail staff, and inmates within the state prison system. Although these events have primarily been conducted on an "as needed" basis in the past, Supplemental Funding provided in the new cooperative agreement will allow the Training Coordinator to schedule visits to DOC campuses statewide. The visits are expected to "build capacity" within the DOC to facilitate training of officers and the contract health care provider's staff.

c. Methods:

(i) The DTBC has already identified and deployed a part-time Training Coordinator. With the addition of supplemental funding, this position will become full-time on January 1, 2005.

(ii) The Training Coordinator has secured TB-ETN membership, and will provide monthly updates to the Director and assure coordination of training activities with DTBC staff throughout the state.

(iii) The Training Coordinator will revise the Annual Training Plan/Human Resource Strategy as described above in the Objectives and will forward for review by the DTBE Program Consultant and Health Educator at CDC once approved by DTBC Director.

9. Program Evaluation Activities: The DTBC captures and provides program evaluation information to CDC via electronic submission of RVCT data, Annual Progress Reports, and the ARPE.

   In addition to the CDC-required reports for program evaluation, the DTBC implemented a Five-Year Plan for Quality Assurance (QA) in 2002. The implementation was intentionally "phased in" over time in an effort to facilitate stakeholder acceptance. The DTBC followed two guiding principles as the QA Plan was established:

   > (i) Quality Assurance is "outcome" oriented. The DTBC is committed to achieving positive *outcomes* with regard to interruption of TB transmission as well as management of individual case-patients.
   >
   > (ii) Quality Assurance is "process" oriented. The DTBC is committed to the QA *process* as an integral part of field staff development and is included in the Annual Training Plan.

   During Year 1 (2002), the DTBC introduced the QA Plan to Area Managers and field staff. The QA Plan includes annual site visits to each area to review the local epidemiology and progress toward the national objectives.

   An Epidemiologic Worksheet (TB-2202) was revised and presented to Area Managers to assist in the collection and organization of contact investigation activities. This worksheet was evaluated and adjusted to meet the needs of field staff. The Communicable Disease Control Information System (CDCIS) allows field staff to print the worksheet and use it as a basis for discussion with their supervisor. Given this capability, field staff are expected to assure timely entry of data relative to case management and contact investigation. The intent of the worksheet is twofold:

   > (i) to prompt discussion between staff and managers in order to identify gaps and opportunities in the investigative process
   >
   > (ii) to document disease intervention activities and capture data to help measure progress toward program objectives

   Introduction and orientation to the use of the worksheet was accomplished in Year 1. Expectations were communicated and clarified during visits with each of the Area Managers.

   Year 2 (2003) was marked by return visits to each area. Follow-up phone calls to the Area Manager regarding specific recommendations were made as necessary, and a return visit within 30 days was conducted if indicated. The 30-day follow-

up visit included area field staff, and the Area Manager led the discussion with his/her staff.

Year 3 (2004) includes a continuation of activities outlined in Year 1 and 2 with the addition of a "site visit report" to the DTBC Director, as well as the Area Manager, Area Nurse Director, and Area Disease Intervention Director. The site visit report documents the review and recommendations regarding:

(i) local epidemiology of TB (trends, gaps, red flags, etc.)

(ii) appropriateness of case management (Nursing and DIS)

(iii) use of DOT

(iv) completion of therapy (disease and infection)
(v) timeliness of contact investigation activities such as:

(1) the time between assignment and interview, and
(2) the time between identification and evaluation of contacts

(vi) quality of contact investigation activities such as:

(1) calculation of "contact index" as a measure of interview quality
(2) calculation of "infected index" to assure priority contacts are identified

Proposals for Year 4 (2005) and Year 5 (2006) include a continuation of the activities outlined above, and the revision of objectives to make them consistent with those now emphasized in this cooperative agreement.