



# The Study of Ocular Tuberculosis in Nevada Visualizes Communication Needs

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## Background

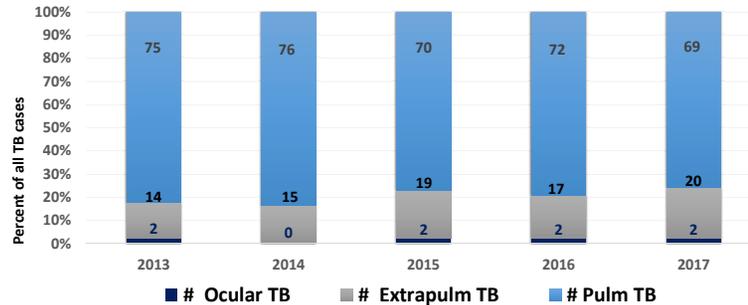
Ocular tuberculosis (OTB) is a rare form of extra-pulmonary tuberculosis (EPTB). The diagnosis of OTB is predominantly made by exclusion. Unlike pulmonary tuberculosis (PTB), definitive mycobacterium tuberculosis identification using nucleic acid amplification tests and culture seldom occurs. An individual with OTB requires specialized ophthalmic examination to provide disease details. These factors, combined with infrequent OTB case experience, create a demanding situation for local health jurisdiction TB programs and providers. In 2018, the Nevada Division of Public and Behavioral Health (DPBH) TB program studied OTB cases by analyzing data from confirmed cases of TB reported during 2013 to 2017 within Nevada's diversely populated jurisdictions. The local TB programs' case managers provided the OTB case management information for the study to include the interaction experience with the public health (PH) affiliated provider or private/community (PC) provider. This study was aimed to expose the challenges for the local TB programs and providers, and to inform on needs within Nevada.

## Methods

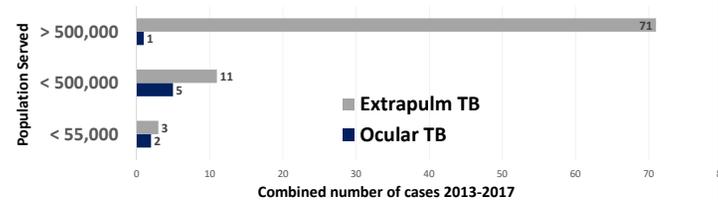
- The data set was obtained from the Nevada National Electronic Disease Surveillance System report of TB cases from 2013-2017.
- Eight (8) OTB cases were identified.
- The incidence of OTB in Nevada was identified.
- Local health jurisdiction population size was evaluated.
- Identified the TB case managers for the eight (8) cases.
- 4 out of 5 case managers were available for contact.
- Local TB programs were evaluated for:
  - TB case types: PTB, EPTB, OTB, and
  - Provider type: PH providers and PC providers.
- Retrospective TB case manager information was collected through:
  - Surveys, and
  - Phone interviews.

## Results

Ocular TB, Extrapulmonary TB, and Pulmonary TB Incidence in Nevada, 2013 - 2017



Ocular & Extra-pulmonary TB Incidence and Nevada Population Size Served, Combined Years 2013 - 2017



## TB Case Managers' Responses

### Related to Experience of OTB Case Management:

- Knowledge of OTB above average 2 / 4
- OTB case management was challenging 4 / 4
- OTB cases require supplementary time than EPTB cases 3 / 3

### Related to Provider Interactions:

- Non-PH provider OTB case communication was less effective 3\* / 4
- Non-PH provider case collaboration less ideal than PH providers 4 / 4

### Related to Provider Type Utilized by Program:

- PTB provider most utilized: PH provider 4 / 4
- EPTB provider most utilized: PH provider 4 / 4
- OTB provider most utilized: Non-PH provider 4 / 4
- LTBI provider most utilized: PH provider 2 / 4
- Non-PH provider 2 / 4

### Related to Procedures Program has in Place:

- Written roles & responsibilities of case managers and providers in place 1\*\* / 4
- Written communication forms for non-PH providers and case managers 0 / 4
- Value state & local programs developing treatment communication forms 4 / 4

\*program serving pop > 500,000 reported no difference  
 \*\*program serving pop > 500,000 made this response

## Discussion

- Ocular tuberculosis disease has low incidence and exhibits an uneven distribution within Nevada's populations served by the local TB programs. The majority of OTB cases arose in populations <500,000.
- For populations <500,000, local TB programs indicated difficulty communicating effectively with PC providers. These programs would benefit from standardized communication procedures and treatment forms for use with all provider types in all TB cases.
- For populations >500,000, the local TB program indicated communication with the PC provider was above average for OTB but less effective for EPTB and PTB cases compared to PH providers. The program indicated procedures are in place to guide communication. The program would benefit by augmenting the existing procedure with standardized treatment communication forms to improve effectiveness of communication with PC providers.
- All local TB programs primarily utilize and communicate effectively with PH providers for PTB, EPTB, and OTB. Both PH and PC providers are utilized for latent tuberculosis infection (LTBI). The use of LTBI standardized communication forms focused on PC providers would engage the PC providers in identifying and treating individuals at high risk for LTBI progression to TB disease.

## Conclusion

The Nevada DPBH TB program retrospective study of rare OTB disease incidence and case management experience revealed communication gaps within Nevada's local TB programs. All local programs, regardless of size of the population, value the development of standardized communication forms to facilitate flow of relevant treatment information between the PC providers and case managers. The forms would provide detailed information for the TB case managers to timely capture an individual's disease status. Additionally, the form would serve as a treatment algorithm and resource for the providers. By providing these tools it is hoped that local TB programs will be empowered to further strengthen relationships with our much-needed partners and especially the PC providers. Over the next year, Nevada's DPBH TB program will work with the local TB programs and providers to develop and implement a standardized communication procedures and forms to effectively communicate TB and LTBI case management.

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