A photograph of the Golden Gate Bridge in San Francisco, California, partially obscured by a thick layer of white fog. The bridge's iconic red-orange towers and suspension cables are visible against a pale blue sky. The fog fills the lower half of the frame, creating a sense of depth and mystery. The water below is a deep blue-green color.

Packing for the unexpected: Tuberculosis in recipients of organ transplantation

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Disclosures

- None

A Case Presentation...

- U.S.-born M with hx alcoholism and homelessness admitted for ETOH withdrawal
- Prolonged hospitalization: seizures, AMS, aspiration pneumonia, multifocal cerebral infarction
- Brain death -> organs collected for transplant
- Pre-txp screening: no hx of TB, no foreign travel, TST neg x2 in 6 months before death
- No specimens for AFB smear, cx, or NAAT collected

3 weeks after death, previously collected CSF grew MTB

Case Presentation continued

- 50 F kidney transplant recipient
- 5 weeks post-transplant develops fevers and sepsis
 - notification of donor's positive CSF cx within 1 wk
- Recipient bone marrow aspirate positive for MTB
- Started on MTB therapy, but develops leukopenia, ESRD
- Dies 9 weeks post-transplant, MTB cultured from blood, liver, spleen, and lungs

Given rarity of this type of disease, what is the significance?

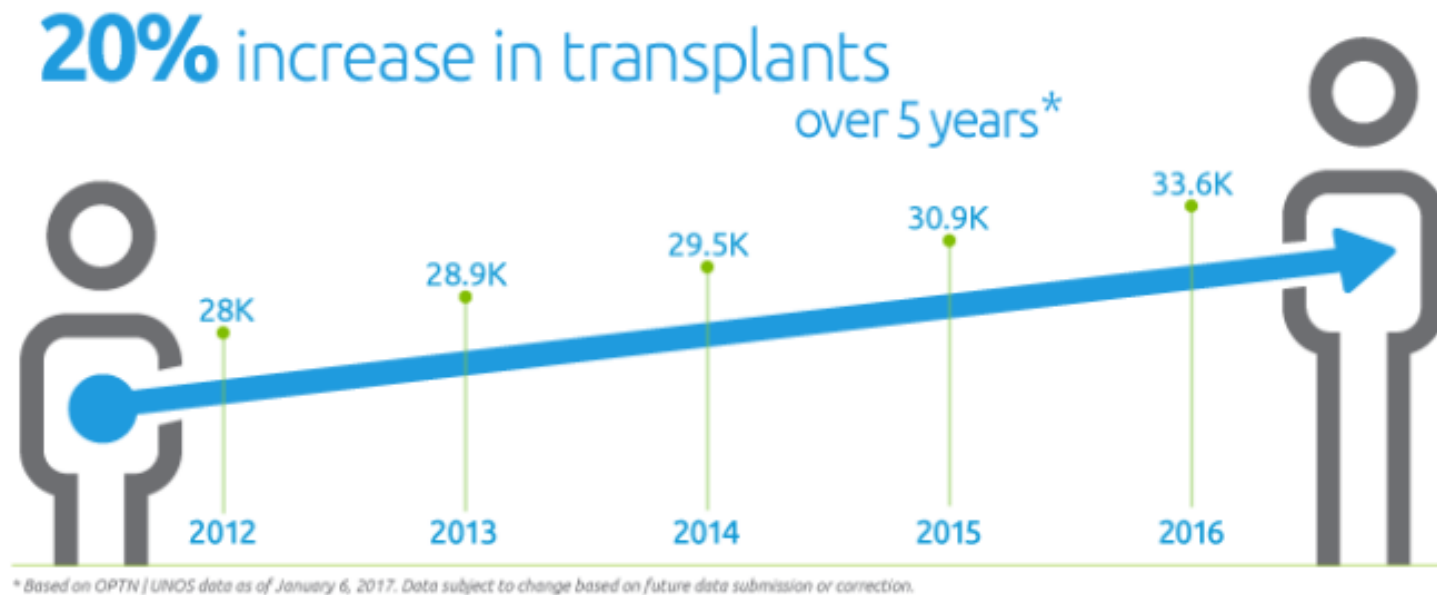
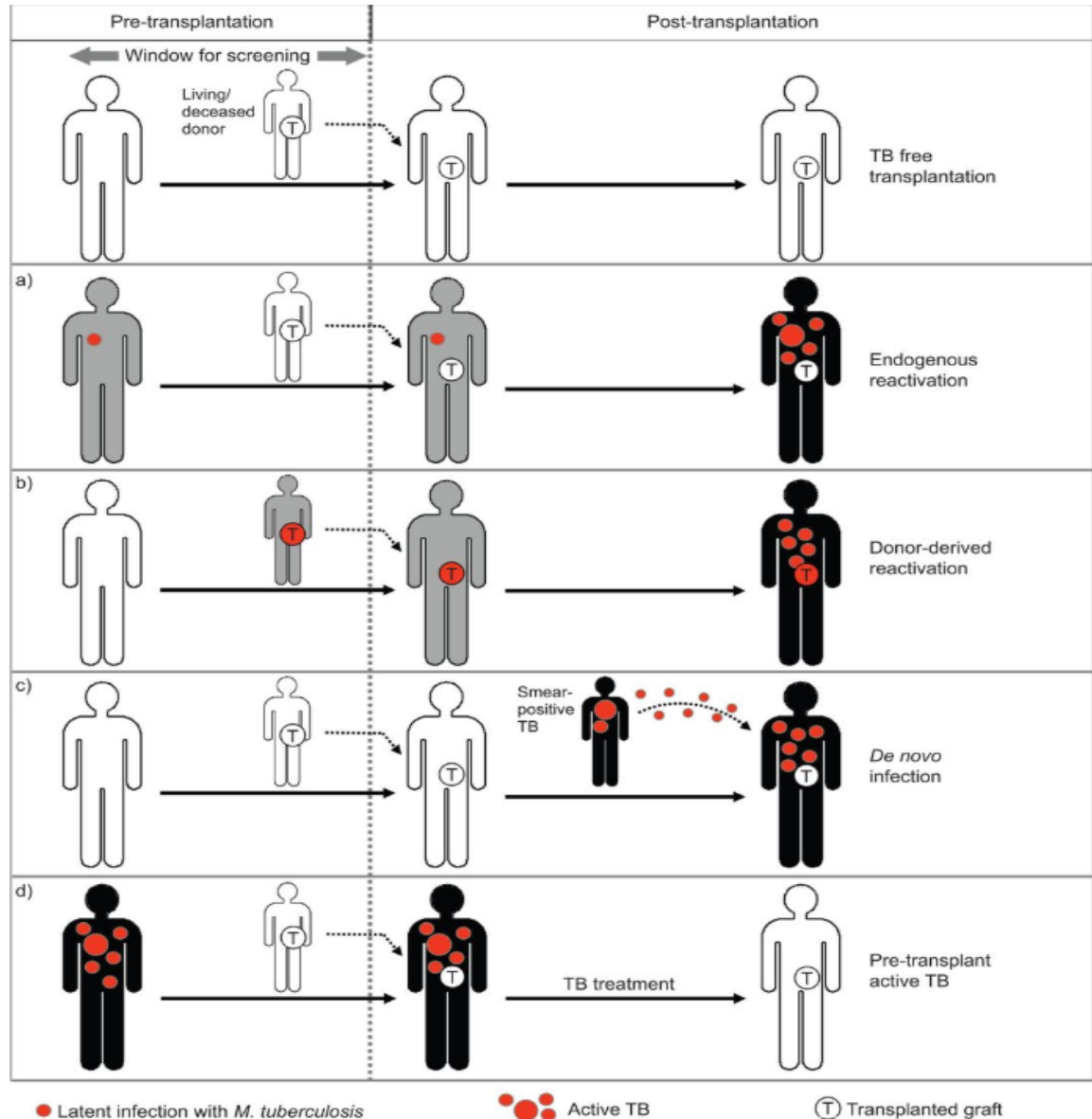


Figure from United Network for Organ Sharing, 2016 Annual report

Objectives

1. Describe epidemiologic and clinical features of TB disease solid organ transplant (SOT) recipients
2. Understand TB screening practices for SOT donors and recipients
3. Become familiar reporting pathway for transplant-associated TB and roles of involved agencies:
 - Local and state health departments
 - Organ procurement organization (OPO)
 - United Network for Organ Sharing (UNOS)
 - Disease Transmission Advisory Committee (DTAC)
 - CDC Office of Blood, Organ and Other Tissue Safety (BOOTS)

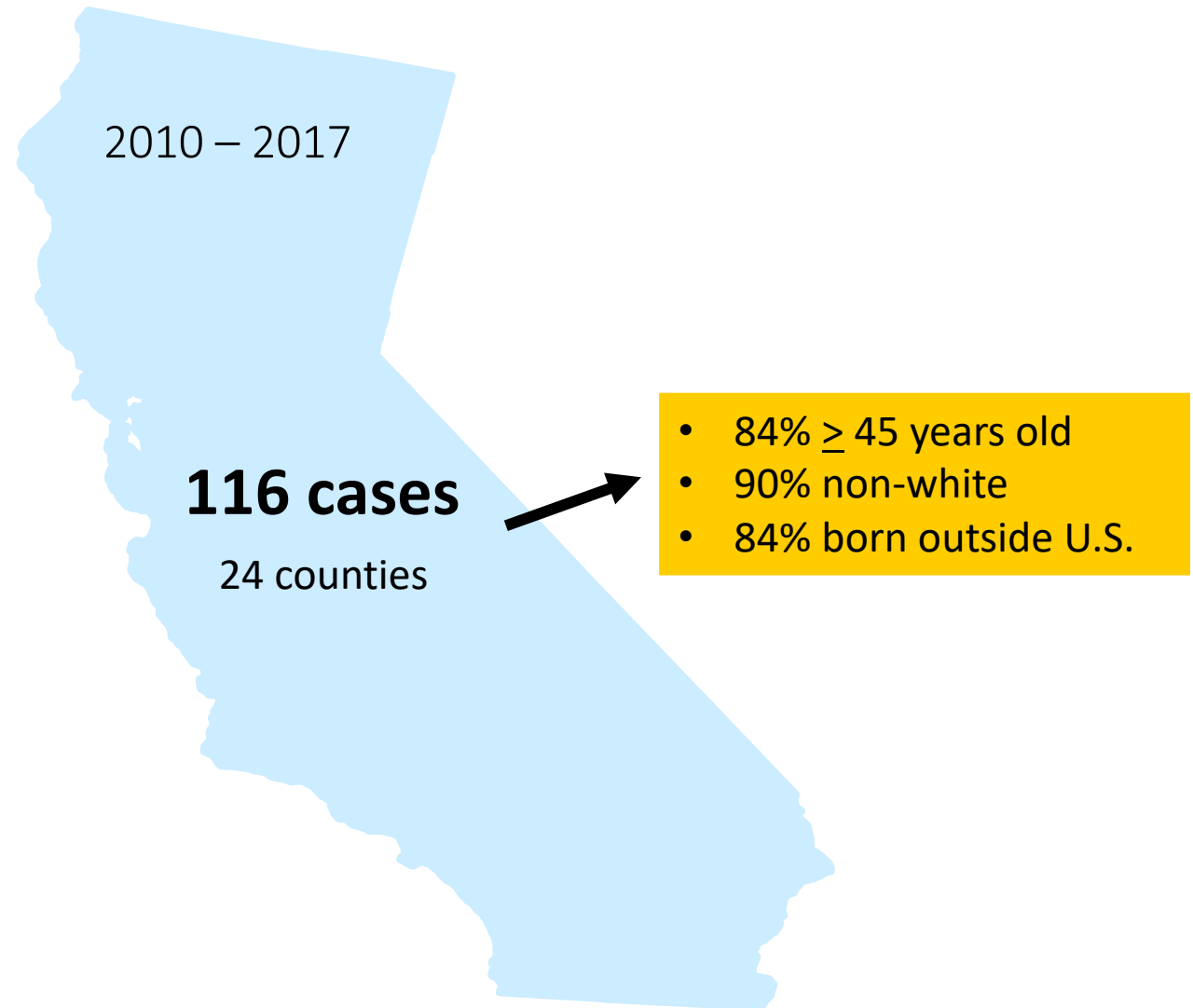
Mechanism of TB disease in SOT recipients



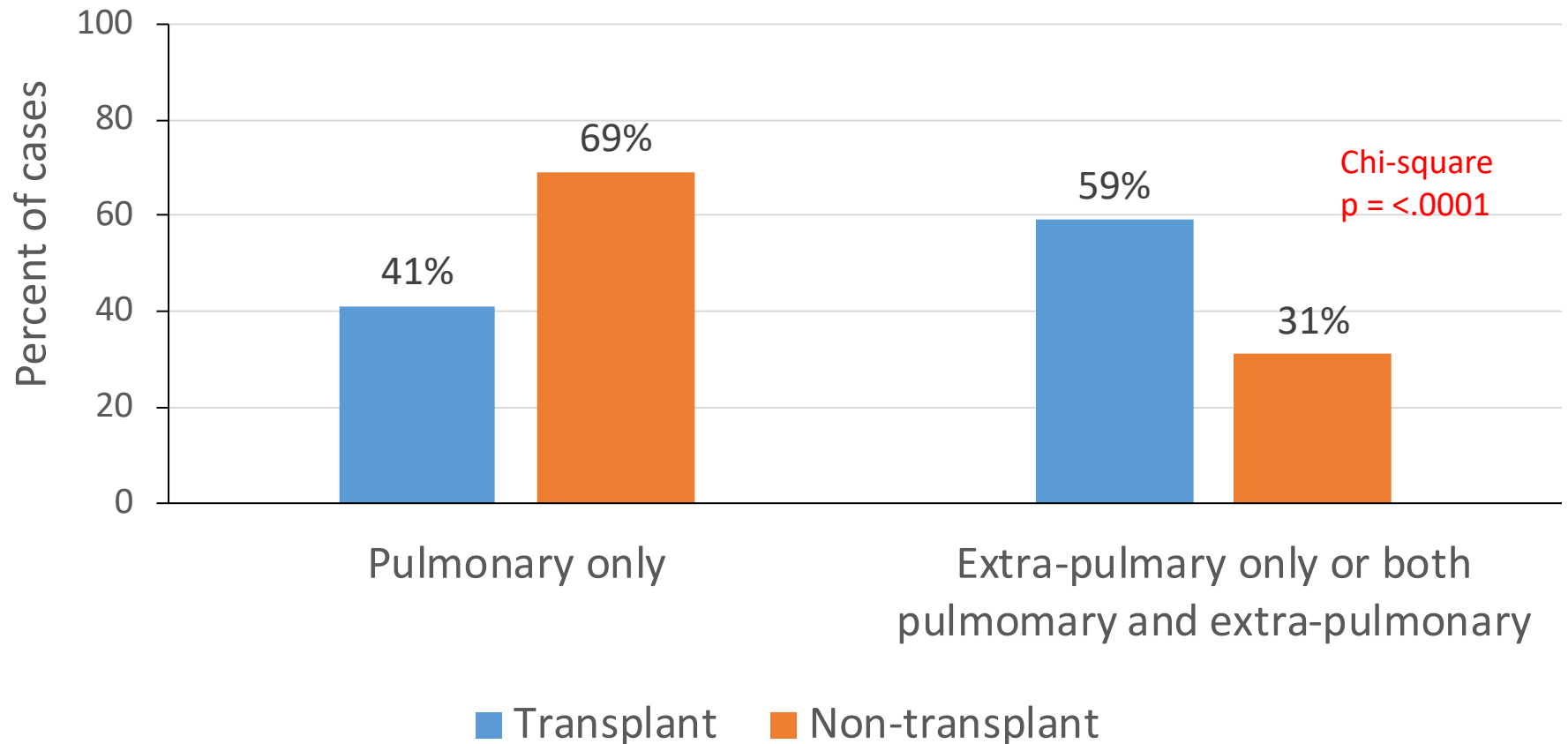
What do we know about TB in recipients of solid organ transplant (SOT)?

- Risk of TB disease >20x higher than general population^{1,2}
- More likely to be disseminated or extra-pulmonary disease^{1,3}
- More likely to be fatal^{1,3}
- Lungs are highest risk organs⁴
- Majority of data comes from case series or international settings

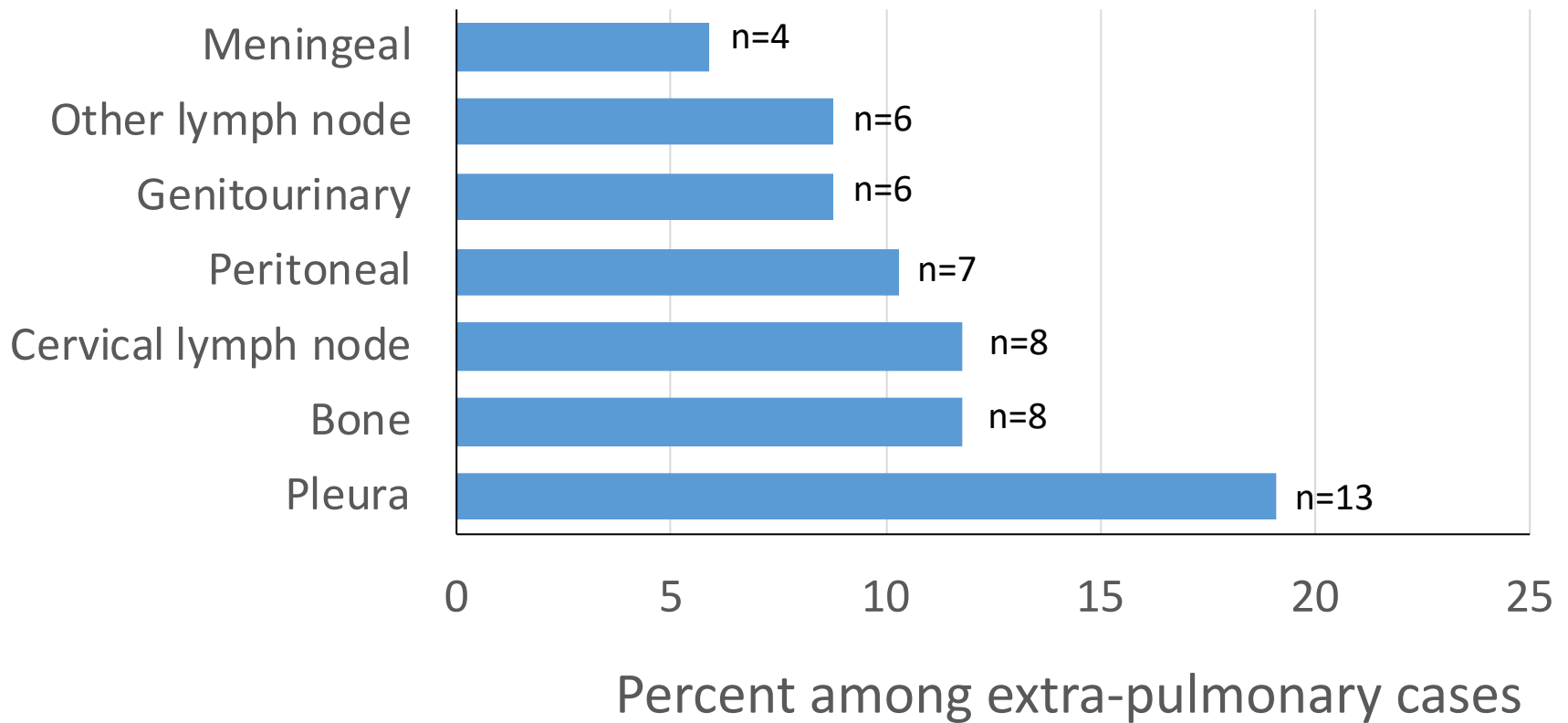
TB in solid organ recipients, California



Site of Disease, California Transplant vs Non-Transplant TB Cases



Common Sites of Extra-pulmonary Disease among Transplant Patients



Deaths among California TB patients with Transplant, 2010-2017

	Transplant	Non-transplant	Age-adjusted OR (95% CI)
Deaths with TB*	21 (18.1%)	1655 (9.6%)	1.94 (1.19, 3.16)

- Includes patients who were dead at the time of TB diagnosis, and those who died before completing TB treatment

Future work

- Use matched data from the United Network for Organ Sharing (UNOS) Transplant Recipient List
- Describe timing of TB disease following transplantation
- Estimate relative risk of disease based on type of transplanted organ
- Explore prior LTBI screening or opportunities for screening



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