



TB Outbreaks & Contact Investigation

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Accreditation Statement



Accreditation Statement

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UAN Number: UAN JA0000238-0000-26-089-L99-P.

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This activity was planned by and for the healthcare team, and learners will receive 18.25 Interprofessional Continuing Education (IPCE) credit for learning and change.

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A record of attendance will be provided to all registrants for requesting credits in accordance with state nursing boards, specialty societies or other professional associations.

For disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee member(s) and staff, please go here to the course accreditation page.

Available Credit

- 18.25 ACPE,
- 18.25 *AMA PRA Category 1 Credit™*
- 18.25 ANCC
- 18.25 Attendance
- 18.25 IPCE

Disclosure:

No relevant financial disclosures to report and no mention of off-label use of any medications or products

Learning Objectives

TB contact investigations and outbreak response activities

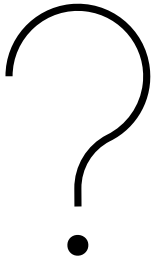


Review fundamentals of TB contact investigation and outbreak response activities to support foundational understanding of TB disease transmission and control in a congregate setting.



Apply TB outbreak strategies to a recent outbreak in a long-term care facility to highlight the necessary resources, approaches, and challenges.

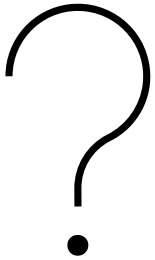
Polling Question



How well do you understand the factors that increase the TB transmission risk in congregate environments?

- A. Very well
- B. Somewhat well
- C. Not very well
- D. Not well at all

Polling Question



How confident are you in explaining why timely TB contact investigations are especially important in congregate settings?

- A. Very confident
- B. Somewhat confident
- C. Not very confident
- D. Not confident at all

Disclaimers

Of note:

Contact investigation activities from July 2022 until early December 2022 are related to the index patient only.

These results are not all inclusive of the work performed to date.

Index Patient

- 67-year-old US-born white female
- Admission TST for LTC placement was negative (0 mm)
- No prior history of TB
- Transferred from the LTC facility to the ER on 7/1/22 with elevated temp and change in level of consciousness
- COVID negative

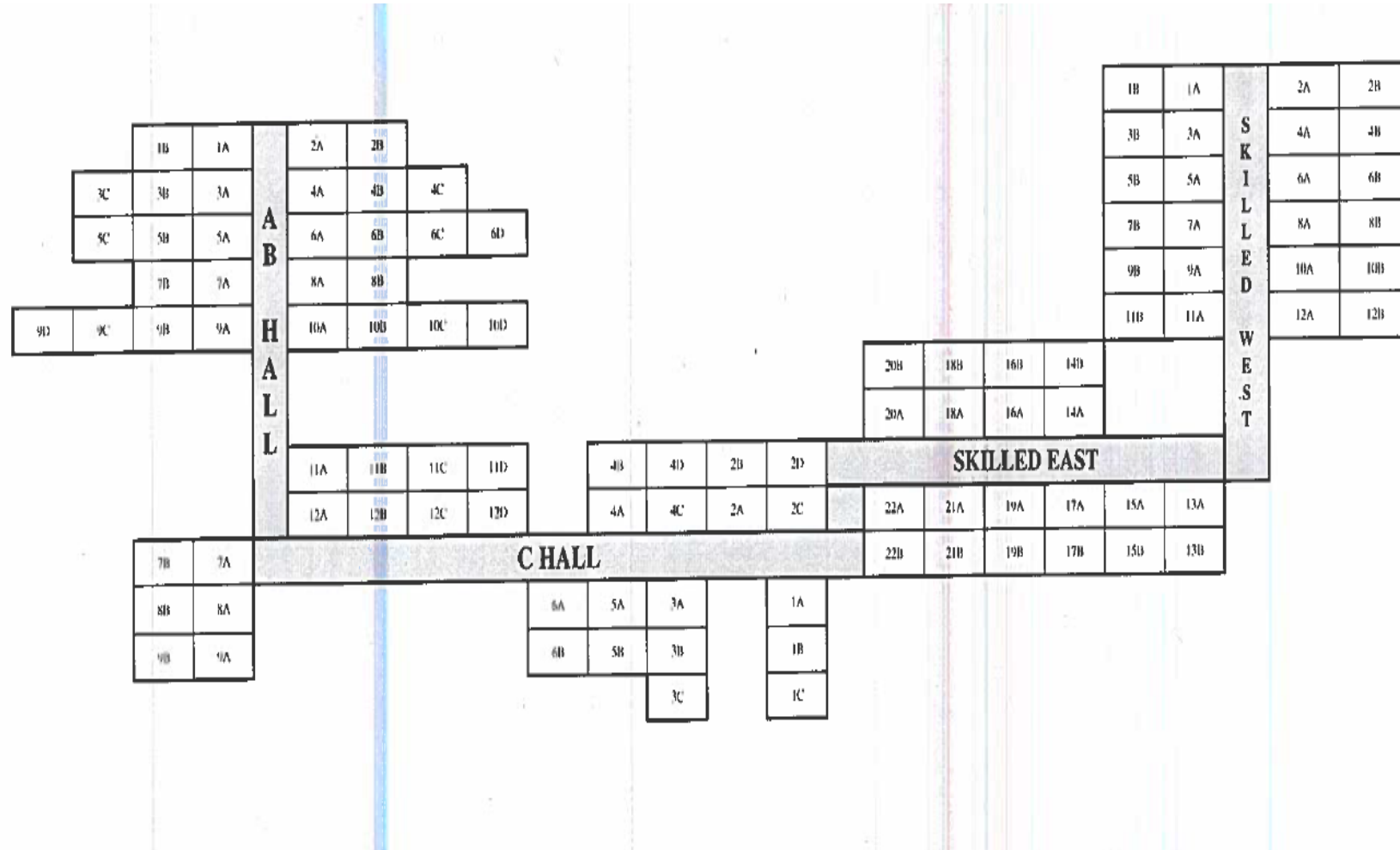
Index Patient

- No respiratory abnormalities
- Hospital CXR was concerning for pneumonia
- Bronchoscopy was performed
- Oh, by the way: This is the 3rd hospitalization since the end of February 2022....

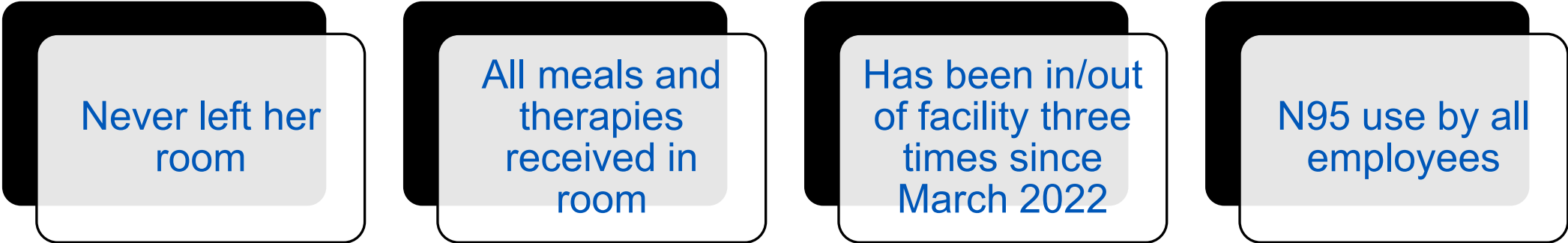
July 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					Resident admitted to hospital	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
	+ MTB (bronch)	Site Visit				
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

1 level 0 private rooms 104 beds



Early Information



Never left her
room

All meals and
therapies
received in
room

Has been in/out
of facility three
times since
March 2022

N95 use by all
employees

Who to test?

5 Household contacts (HHCs)	Patient had one return to home for 11 days between LTC stays
9 Therapists (contract providers)	Extended one-on-one exposure time
6 roommates	Exposed from the beginning of March 2022 until July 2022

July 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					Resident admitted to hospital	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
	+ MTB (bronch)	Site Visit				
17	18	19	20	21	22	23
	Letters			Tested 5 roommates		
24	25	26	27	28	29	30
					Results of QFTs	
31						

Something doesn't feel right

- Inadequate use of N95s
- Recently discharged patient with no contact to our index patient has now transferred to another LTC facility
- TST positive upon arrival

Baseline QFT results

	HHCs - 5	Therapists - 9
Unable to schedule	0	2
QFT negative	5	6
QFT positive	0	1

Baseline QFT results

	Roommates - 6
QFT negative	1 This roommate had been discharged from the facility and was testing 12 weeks after date of last exposure.
QFT positive	3
QFT indeterminate	2

Immediate decision to CXR all roommates. Use of Mobile Unit versus Health Department contracted providers.

Call to leadership

Next steps....



Consult

State
Epidemiologist and
Healthcare Quality
(regulatory)



Unprecedented request

Halt all new
admissions



Agreement

After Healthcare
Quality contacted
the facility, the
facility volunteered
to halt all new
admissions.

July 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					Resident admitted to hospital	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
	+ MTB (bronch)	Site Visit				
17	18	19	20	21	22	23
	Letters			Tested 5 roommates		
24	25	26	27	28	29	30
					Results of QFTs Halt admissions	CXR results
31						

CXR Result

Therapist

- Normal
- This was a speech therapist that relied on showing patients her mouth for certain therapies; therefore, pulling down her N95

CXR Results

Roommates

- 4 negative CXRs
- **1 abnormal CXR (indeterminate QFT)**
 - Transfer to local hospital for TB evaluation

Now being told that the index patient had therapy in the facility gym...

Expand the CI

Rooms directly beside
and across the hall
from where the index
patient resided during
the infectious period

All facility employees
who had direct contact
with the index patient

Pull a list of anyone
who had crossover in
the gym with the index
patient during therapy

August 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	Case #2 (resident)			2 nd testing expansion begins		
7	8	9	10	11	12	13
		Results received				
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

QFT results from expansion

	Employees - 29	Residents - 14
Previous positive	3 - asymptomatic	0
New positive	16	12
Negative	10	2

Items to Consider

Residents with positive QFTs	Received CXRs via mobile unit
Employees with positive QFTs	Sent to local contracted provider
All residents and employees	Are asymptomatic at time of testing

CXR results from expansion

	Employees (16 positive QFTs)	Residents (12 positive QFTs)
Normal	14	5
Abnormal: TB cannot be excluded	2	6

1 resident with a positive QFT has now
passed away under hospice care
(non-TB related)

Immediate needs

Drug supply concerns	Rifapentine
Pull meds	Pull all medications to complete current patients on the 3HP regimen
Halt new orders of 3HP	Halt all new patients from starting on 3HP / consider alternative regimens
State drug count	Provide a count of current stock of 3HP and keep it in holding

Expand the CI

Decision immediately made to expand the CI to include all residents and all facility employees

Items to consider

Local hospital has 26 negative pressure rooms with 14 additional rooms that can be converted with engineering

TB test results – 3rd round

	Employees – 31 (8/15/22 test date)
QFT negative	17
QFT positive	9
QFT indeterminate	3
TST negative	1
TST positive	1

TB test results – 3rd round

	Residents – 55 (8/16/22 test date)
QFT negative	16
QFT positive	31
QFT indeterminate	1
TST negative	2
TST positive	5

TB test results – 3rd round

	Employees - 25 (8/16/22 test date)
QFT negative	17
QFT positive	6
QFT indeterminate	2

August 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	Case #2 (resident)			2 nd testing expansion begins		
7	8	9	10	11	12	13
		Results received Expand CI to all		Cases # 3 & #4 (residents)		
14	15	16	17	18	19	20
		Case #5 (resident)	Case #6 (employee) Cases #7 & #8 (residents)	Case #9 (employee) Cases #10 & #11 (residents)	Case #12 (employee) Case #13 (resident)	
21	22	23	24	25	26	27
	CXRs on all residents/staff regardless of QFT/TST results		Cases #14, #15, & #16 (residents)		Case #17 (resident)	
28	29	30	31			
	Case #18 & #19 (residents)					

Areas of concern

Items to consider

- Hearing word of residents with recent pneumonia diagnosis
- Pregnant employee who upon screening/testing on 8/15/22 reveals a 7/24/22 pneumonia diagnosis
- Employee with nodules on CXR who is being followed by a pulmonologist / coordination of care

Items of consideration

Visitation	Decision made to halt visitation unless the resident is on hospice / palliative care
CXR's	Coordination of care for all CXRs
Initiation of treatment	Coordination with local hospitals for work-up and initiation of meds
Public Health staffing	Response activities required assistance from another region

Other items to consider

Releasing
results

Jurisdiction of
residents

Medication
schedules

Complexities of
co-morbidities

Antiquated
pharmacy
systems

Media requests

Transportation
issues of staff

Residents tested:
96

Resident Cases (early data)

	Resident Cases – 18 (including index patient)
Culture confirmed	9
Clinical	9

Resident LTBI

48 LTBI

3 started on
window prophylaxis
(HIV and
dialysis)

Drug-to-drug
interactions

3HP for most

Employees tested:
115

Employee Cases

	Employee Cases – 4
Culture confirmed	3
Clinical	1

Employee LTBI



Resident cases

Later Data

- Resident discharged from facility. Now requiring readmission. +TST and abnormal CXR with pleural effusion.
- Resident still in-house. Negative baseline and follow-up QFTs. WNL CXR at baseline. Hospitalization over Christmas with pleural effusion.

Questions



Thank you

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