

Latent TB Infection Management through Contact Investigation in Republic of Korea

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TB Status in Korea

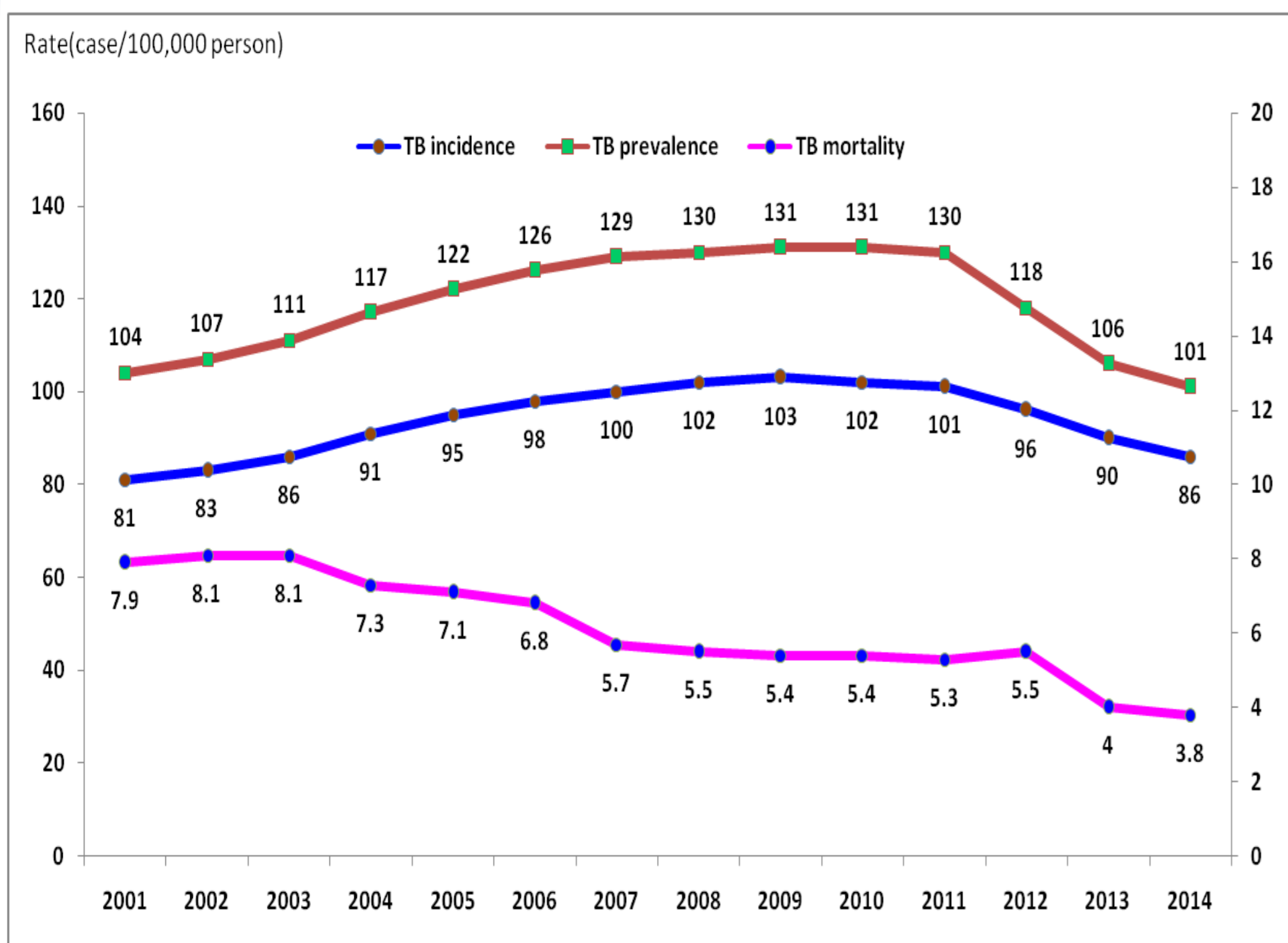


Figure 1. TB incidence, prevalence and mortality in Korea, 2001-2014

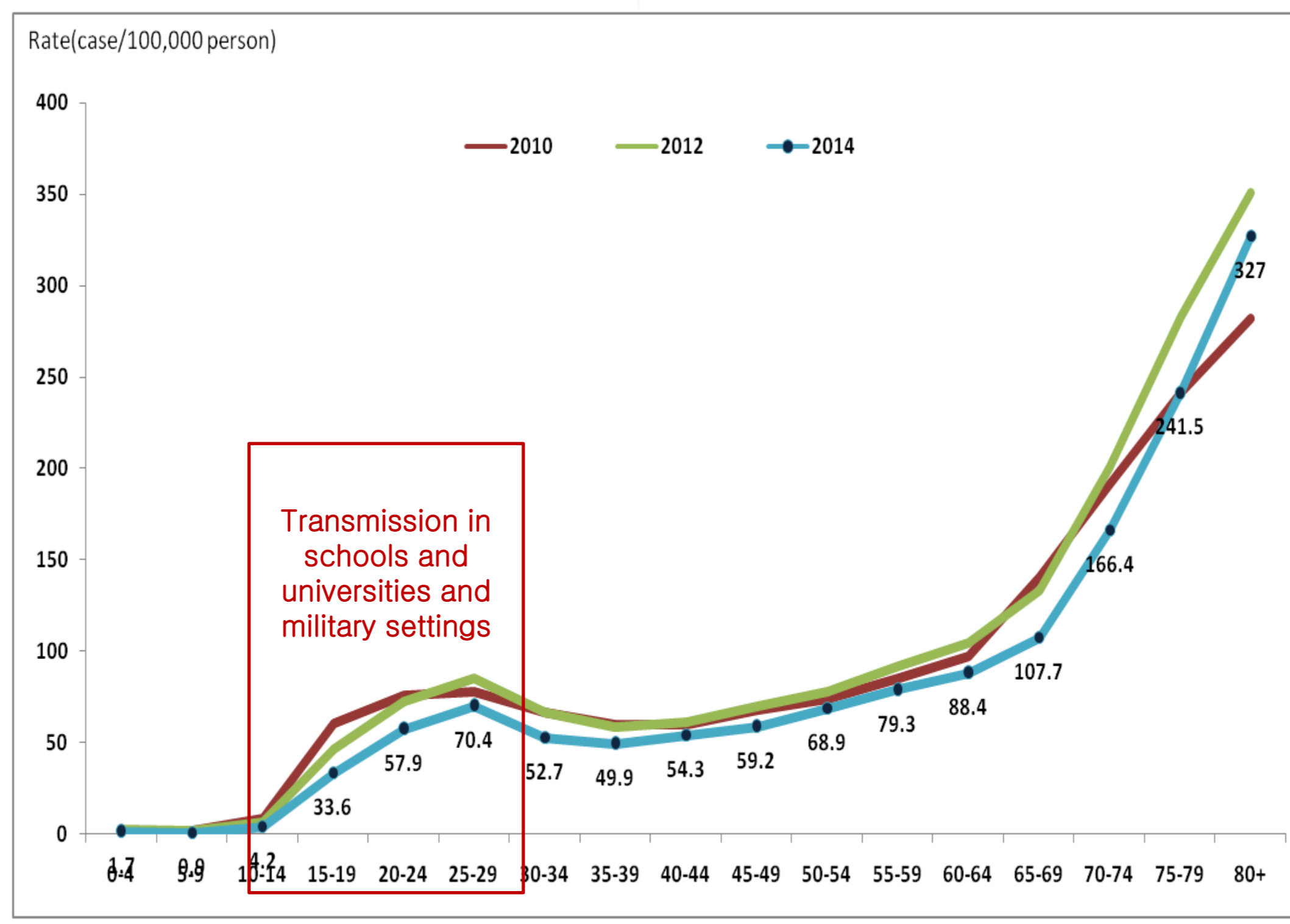


Figure 2. TB incidence rate by age

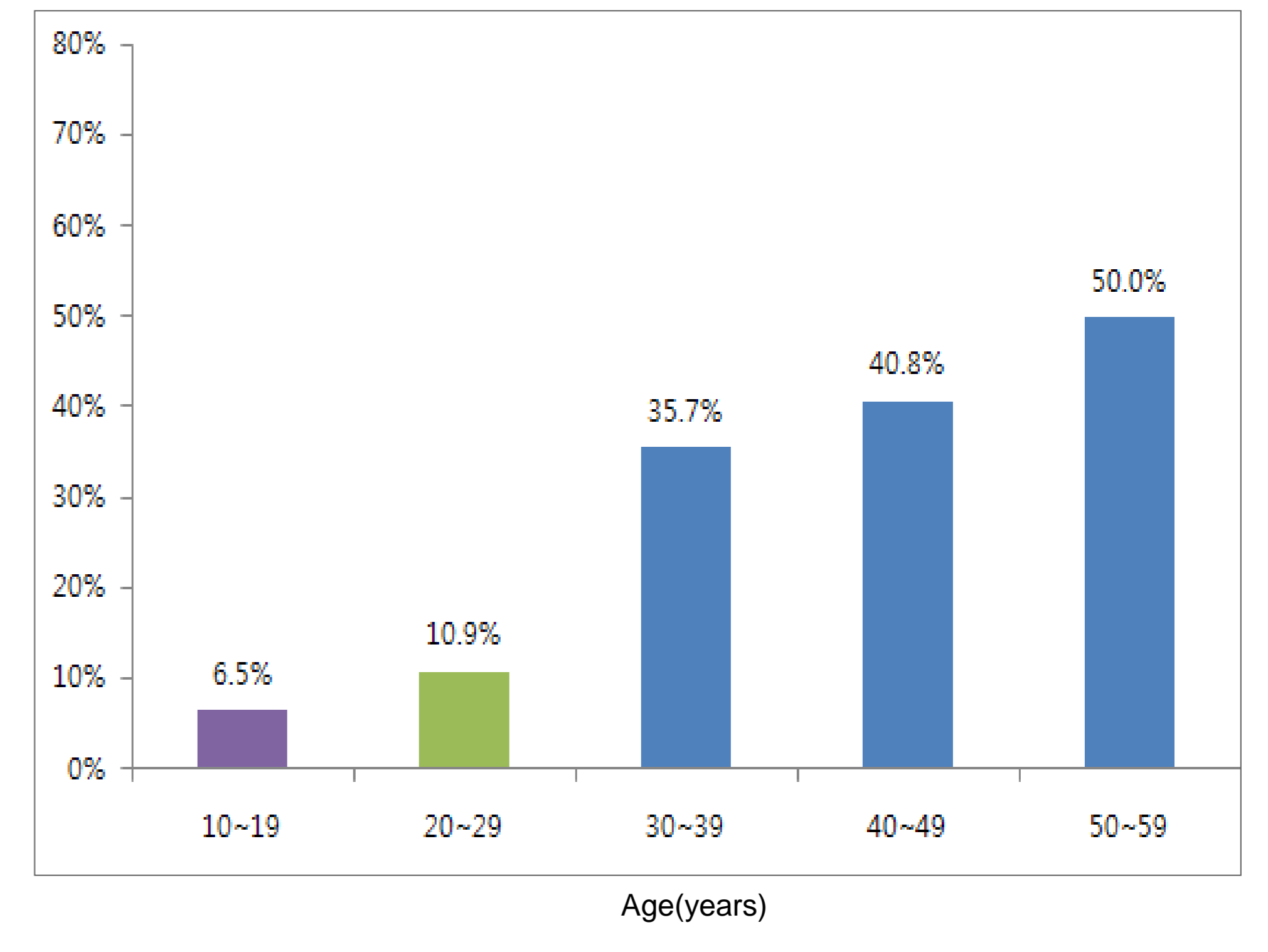
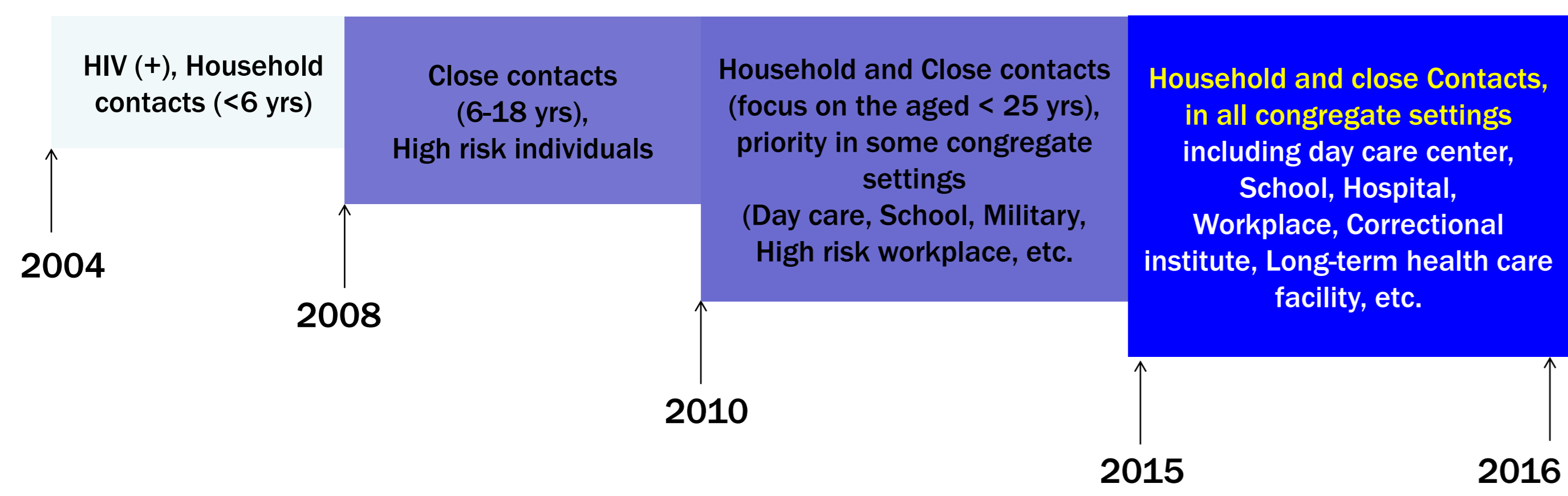


Figure 3. Prevalence of TB Infection by age group in 2015

Outlines of Contact Investigation

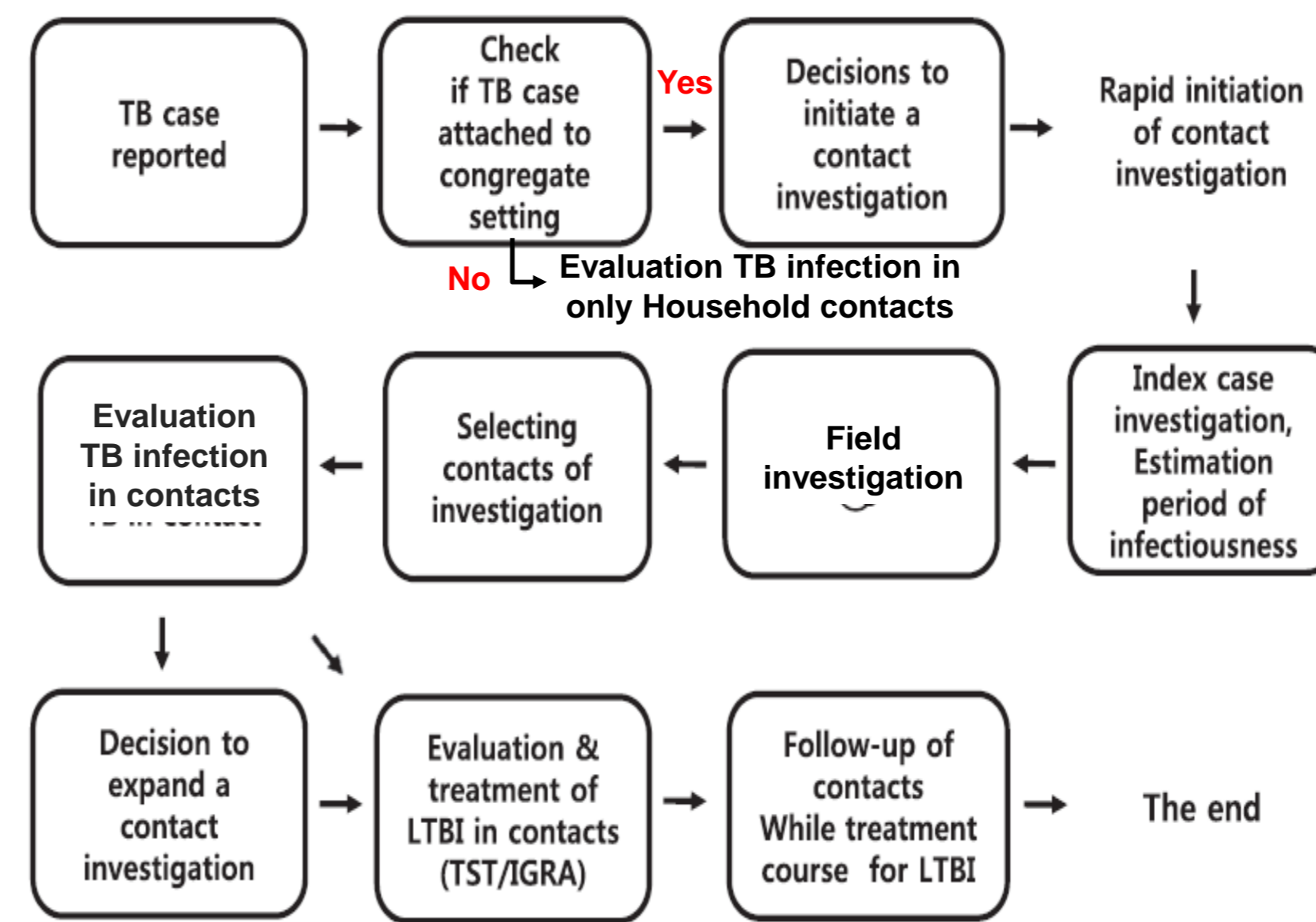
Guidelines changed for contact investigation (CI) in ROK



Enhancement of Contact Investigation

- Enlargement of targets of contact investigation, since 2015, household and close contacts in all congregate settings are recommended to be evaluated for TB and LTBI
- KCDC arranged 27 field investigators across the country to support and implement contact investigation performed by local public health centers since 2013
- KTEIS (Korea TB Epidemic Investigation Service) is composed of 27 field investigators and more 6 staffs who plan the investigation, make a guideline and support the field.
- KTEIS holds regular conference and shares the experience of CI
- Rapid contact investigation by operation of investigation response vehicles

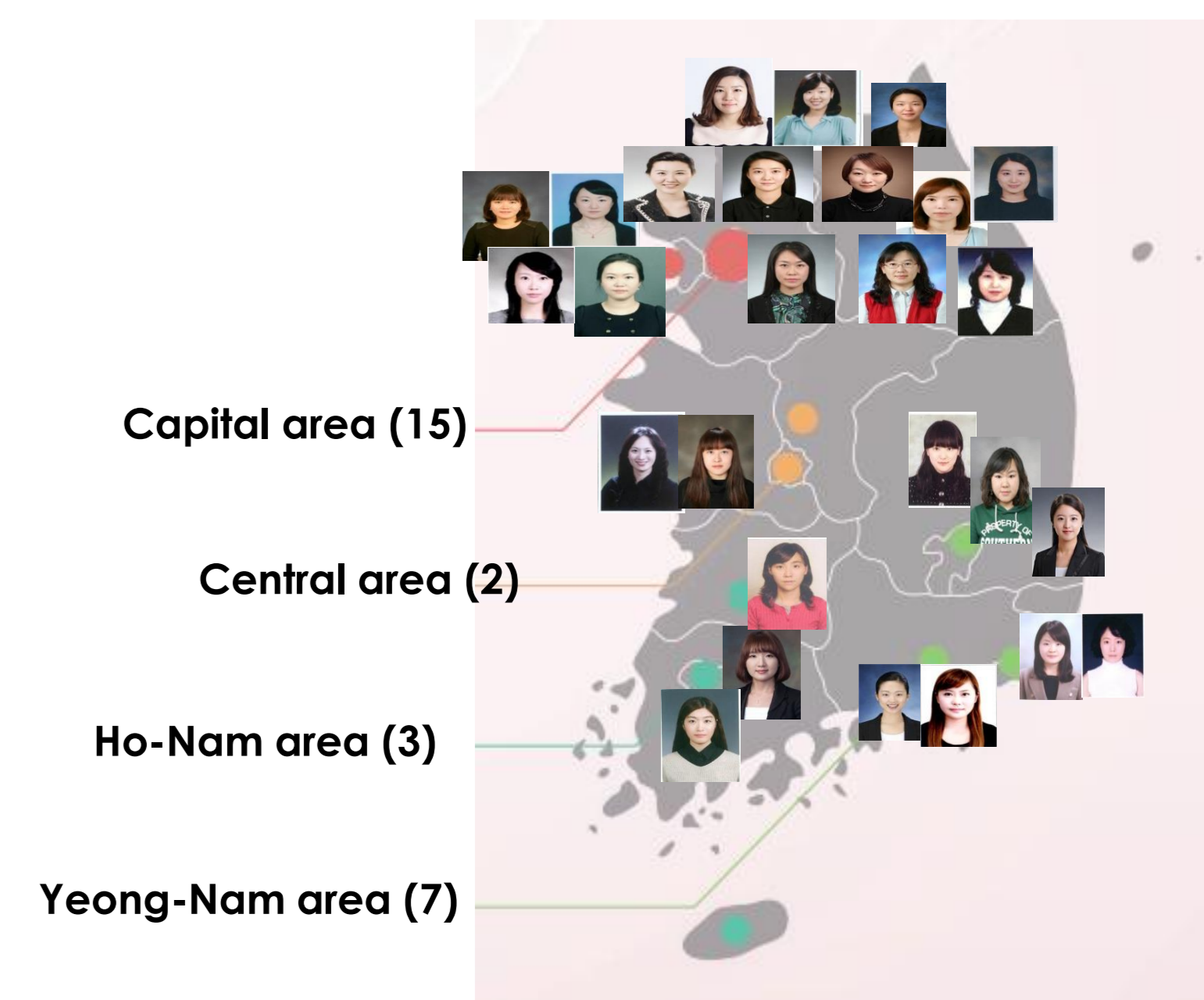
Process of contact investigation in ROK



Algorithm of diagnosis of LTBI

- 1st step: TB screening to detect active TB with chest X-ray and sputum examination
- 2nd step: Perform TST or IGRA or TST/IGRA*
* TST/IGRA: perform IGRA examination if the TST result is positive (induration size is 10~14mm)
- 3rd step: Perform 2nd TST or repeated IGRA to contacts who have a negative result of first test at 8-10 weeks later since last contact with index case
- 4th step: Perform TB screening test to LTBI for ruling out active TB before LTBI treatment
- 5th step: Perform LTBI treatment

27 field investigators arranged in ROK



Achievements of contact investigation

Results of contact investigation (CI) performed in congregate settings by year

Year	2013			2014			2015		
	No. of CI	No. of new cases detected	No. of LTBI (%)	No. of CI	No. of new cases detected	No. of LTBI (%)	No. of CI	No. of new cases detected	No. of LTBI (%)
Total	1,200	259	14,286 (9.6)	1,500	351	11,930 (8.3)	2,821	336	12,723 (9.8)
Educational facilities	775	194	9,777 (7.8)	804	148	7,620 (6.8)	731	113	4,549 (6.2)
Day-care	49	0	394 (19.8)	37	0	237 (18.0)	42	0	217 (10.2)
Elementary schools	33	1	215 (13.2)	46	3	361 (8.9)	48	2	267 (11.6)
Middle schools	93	4	910 (7.2)	87	9	921 (8.9)	69	35	757 (7.7)
High schools	300	105	6,055 (7.6)	274	46	4,096 (6.7)	232	32	2,391 (5.8)
Colleges/Universities	290	82	2,121 (7.4)	349	88	1,860 (5.4)	328	44	890 (5.0)
Others	10	2	82 (10.2)	11	2	145 (23.2)	12	0	27 (8.9)
Clinics/Hospitals	-	-	-	-	-	-	600	136	2,950 (13.7)
Correctional facilities/Shelters	201	26	2,499 (24.1)	307	125	1,978 (14.6)	372	30	1,516 (13.3)
Military/police units	127	30	1,085 (11.5)	158	45	1,306 (12.2)	119	15	532 (8.8)
Workplaces	46	7	366 (23.1)	163	26	690 (14.5)	911	35	2,892 (18.5)
Others	51	2	559 (26.3)	68	7	336 (11.4)	88	7	284 (11.6)

Results of Household contact investigation by year

Year	No. of contacts tested (A)	No. of total contacts (B)	% of testing ((A/B) X 100)
2012	25,712	64,350	40.0
2013	29,170	54,357	53.7
2014	31,006	42,560	72.9
2015	34,917	44,011	79.3

Latent TB infection treatment completion rate in congregate settings (2013-2014)

Regimens	To initiate Treatment	To complete treatment	Completion rate (%)
Total	10,822	8,985	83.0
3HR	3,157	2,791	88.4
4R	930	820	88.2
9H	6,735	5,374	79.8

* Completion rate of treatment by regimens in LTBI aged < 35 years, LTBI aged < 35 years: 14,267 persons, initiation rate of treatment: 75.9%

Challenges and Further steps

- To Improve LTBI treatment adherence and completeness
 - Shorter duration of treatment
 - Monitoring adverse drug reactions
 - Education and public relation against stigma
- To communicate with all personnel (parents, employee, staffs, etc) to minimize misinformation and anxiety
- To Keep the quality management of contact investigation
- To Recommend LTBI treatment to any ages
 - Enhancement of monitoring the adverse reactions of LTBI treatment
- To verify DNA Genotype fingerprinting routinely
 - Evaluation of suspected linkages in outbreak
- Source-case investigation for a child (aged < 5years) with TB disease
 - Seeking the source of recent TB case
 - TB disease in children aged <5 years indicates recent infection