Invasive pneumococcal disease surveillance in Germany: continuity despite change in notification systems

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Background

- Invasive pneumococcal disease (IPD) is a partially vaccine preventable infection
- vaccination of all children under-two years with conjugate pneumococcal vaccine has been recommended in Germany since July 2006
- IPD is not mandatory notifiable in Germany
- IPD laboratory sentinel surveillance at RKI (fig.)
  - 1997–2006, paper based system (PBS) focused on incidence in children under 16
  - 2007–now : web-based “PneumoWeb” for detection of IPD trends in total population
- **Aim:** Compare both systems to assess continuity in notification

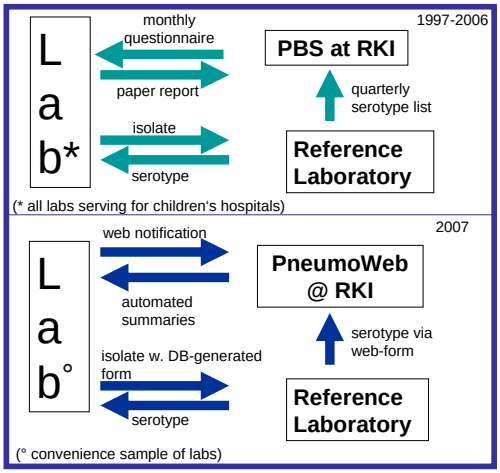

Figure: flow of information and isolates in PBS and PneumoWeb

	Paper based system (PBS)	Web-based System (PneumoWeb, PW)
time covered	1997-2006 (discontinued)	from 2007 ongoing
population covered	children under 16	all ages (reported by convenience sample of labs)
surveillance system	laboratory sentinel, active, case based incl. zero reporting	laboratory sentinel, passive, cases only
data collection	Paper form	SSL-secured web form
Workload RKI (hours/week)	20	1
reporting results	quarterly, paper	monthly, online

Table 1: Comparison of system characteristics between PBS and PW

Methods

- Systems were compared by number of laboratories and their reporting activity within each system for shared (participating in both systems) and not-shared labs (participating only in one system)

Results

- 208 laboratories are shared by both systems
- 76% of notifications during PBS-era and 97% of PW-notifications in children under-16 were made by shared labs
- For agegroup under-16, shared labs had 2.85 reports per year and lab in both, PBS and PW
- for all age groups, PW reported 13.6 cases per lab in 2007

		PBS	PneumoWeb, 2007
	enrolled laboratories	N=354	N=270
SHARED LABS	laboratories	**N=208**	
	laboratories with case reports, (average/year)	N=101 (range 81–110)	N=66
	notifications (average/year)	N=288 (range: 245-322)	N=188
	notifications per year&lab	**2.85**	**2.85**
	proportion of Isolates sent to reference lab	59%	82%
NOT SHARED	laboratories with case reports (average./year)	N=37 (range: 27-49)	(N=4)
	notifications (average/year)	N=89 (range: 58-127)	(N=6)
	notifications per year&lab	2.4	(1.5)
	proportion of Isolates sent to reference lab	47%	(4 out of 6)

Table 2: Comparison of parameters between PBS and PW. All data refer to case reports in children <16years of age

Conclusions

- notifications per year and lab remained stable after change of surveillance for shared labs
- shared labs reported more cases and had better compliance than not-shared labs
- notifications of labs in PW, that did not previously take part in PBS, are neglectable
- PW resulted in reduction of workload, faster reporting of results that reach more people and expanded the age group under surveillance
- electronic web-based reporting system is adaptable to other non-notifiable pathogens
- PW as a tool for efficient IPD-surveillance is essential to e.g. detect serotype replacement or estimate herd immunity

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