

Surveillance in Poland: BINet experience

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- ▶ **~ 38 mln**
- ▶ **2007 – introduction of vaccination against Hib**
- ▶ **No mass vaccination against pneumococci (only risk groups)**



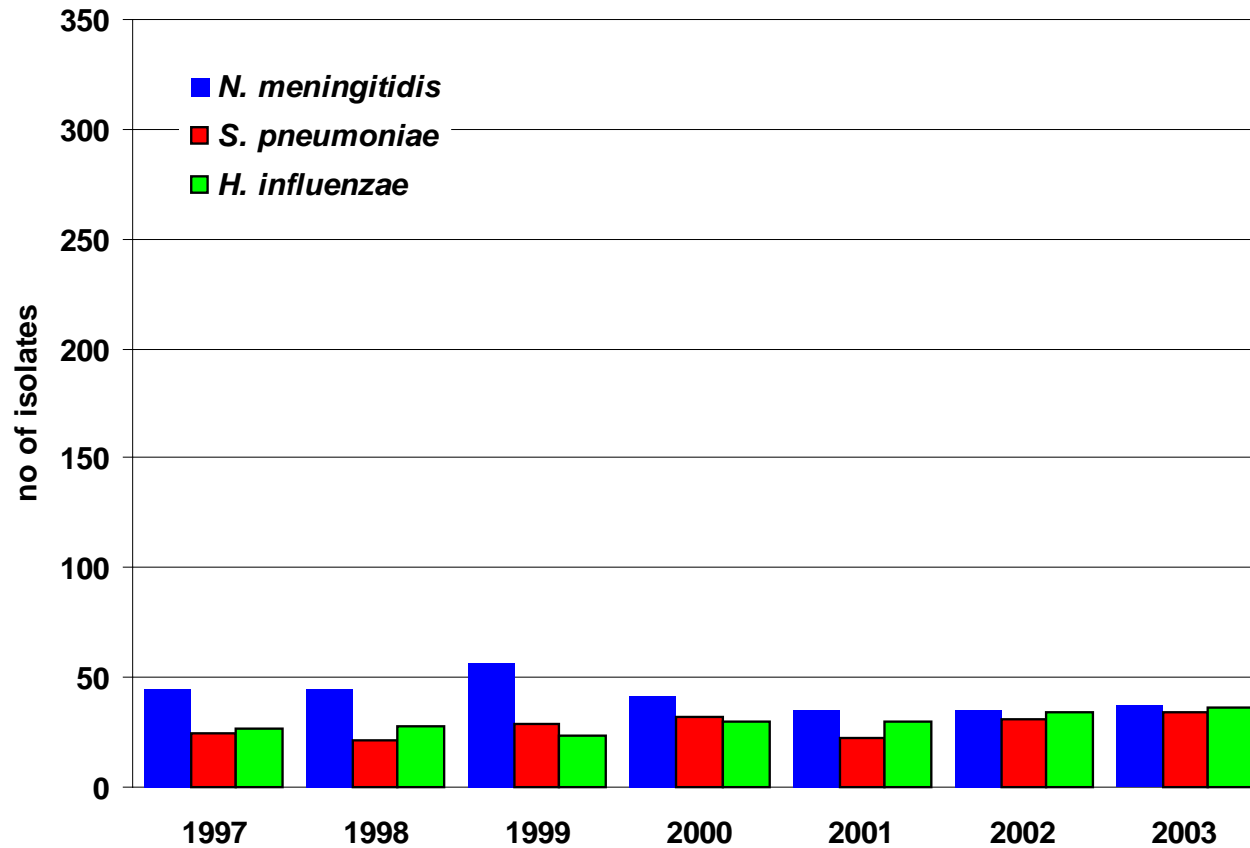
Polish surveillance system for invasive bacterial infections

- ▶ **1997 – establishment of the National Reference Centre for Bacterial Meningitis (NRCBM)**
- ▶ **Until 2005 only meningococcal and *H. influenzae* meningitis cases were reported**
- ▶ **Others were notified as „other bacterial meningitis” (incl. *S. pneumoniae*)**
- ▶ **Mandatory reporting of cases for all age groups**

Two notification systems

- **Obligatory: based on MD reports (NIPH-National Institute of Hygiene)**
 - **Voluntary: laboratory based (the NRCBM)**
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Beginning..... meningitis cases only

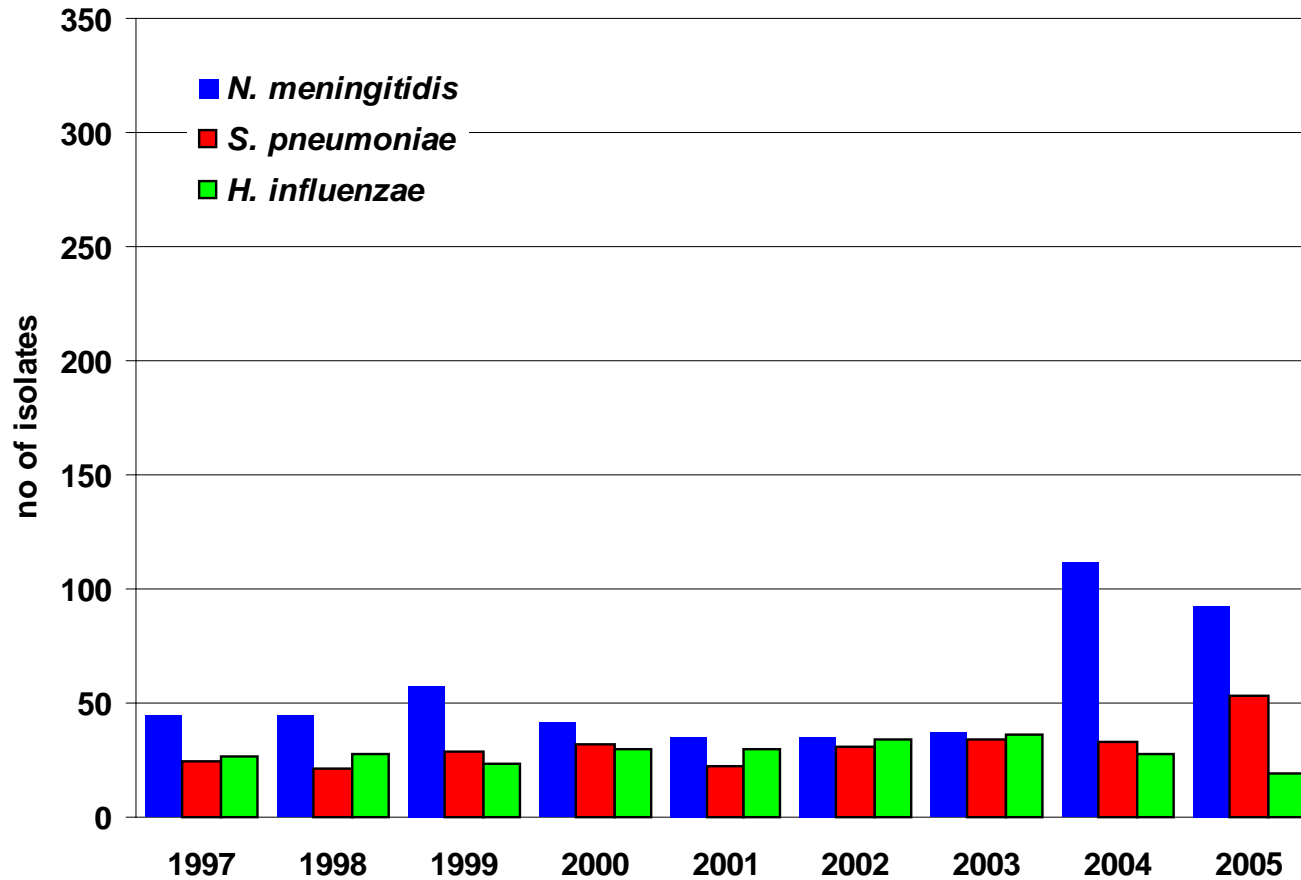


IMD associated with very high mortality in the North-West of Poland

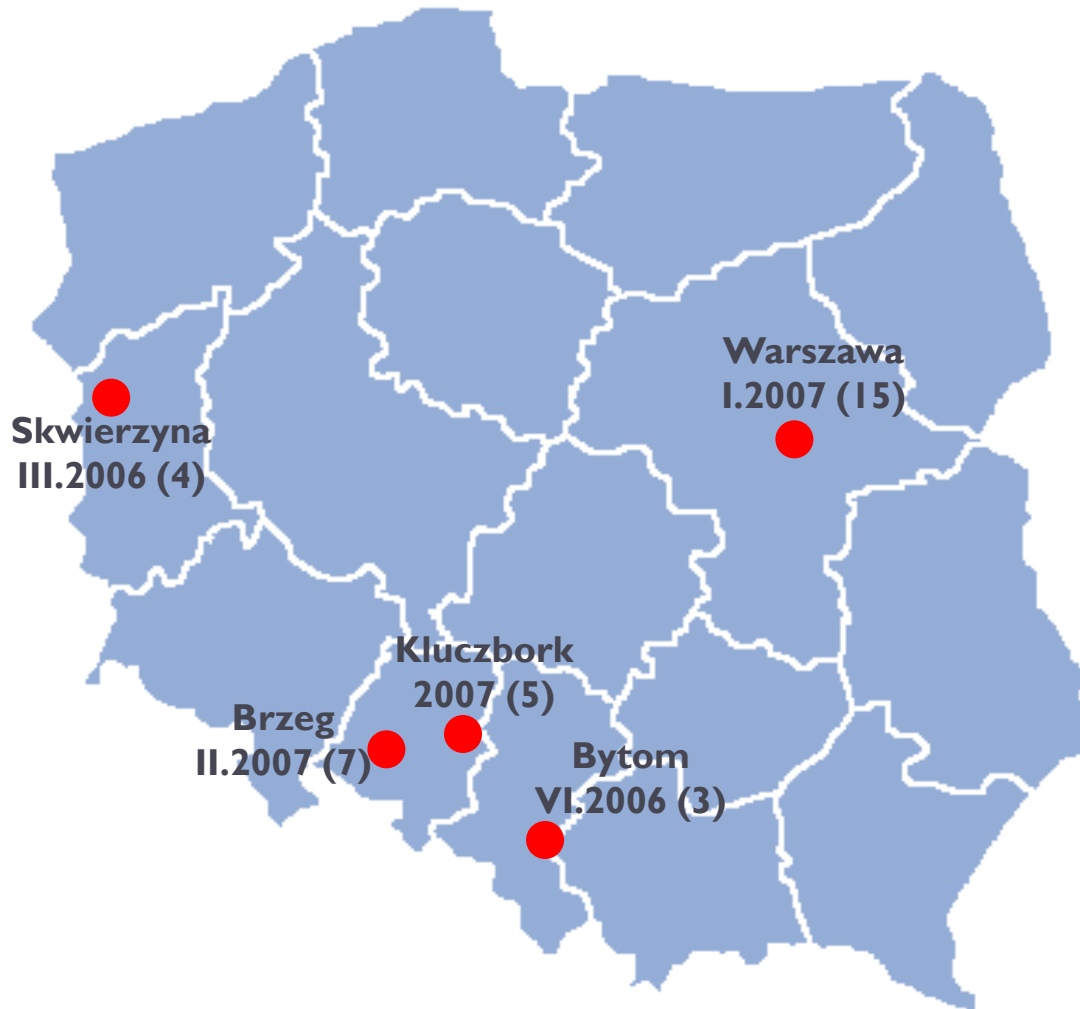
- ▶ **April 2003 - April 2004: 21 IMD cases, total CFR = 42.9%**
- ▶ **all the fatal cases were diagnosed as fulminant meningococcal septicemia**
- ▶ **The situation in the studied area accelerated changes in the registration system – currently there is a compulsory notification of all invasive cases**



After changes in registration system



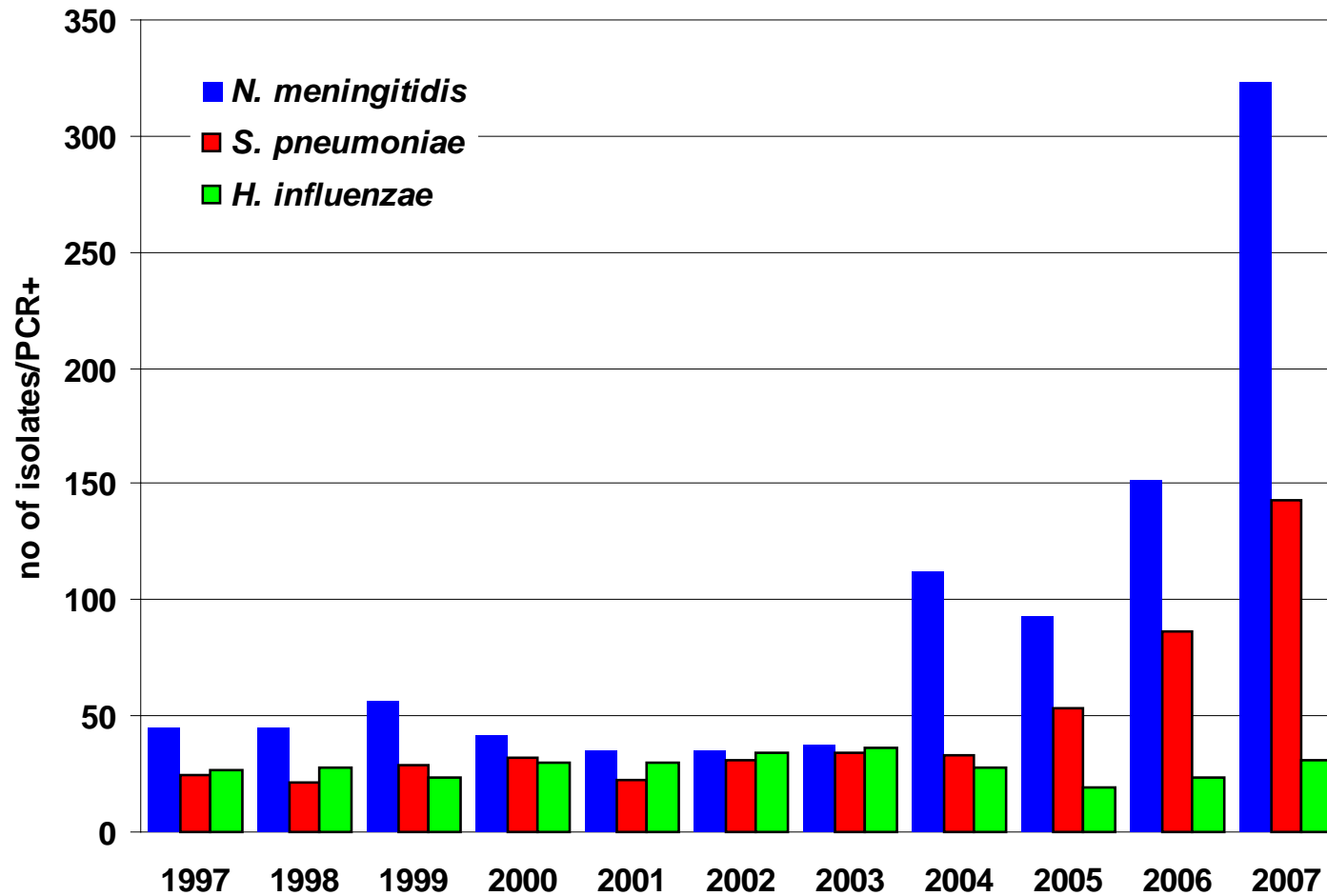
IMD outbreaks in Poland, 2006-2007



MenC, ST-11

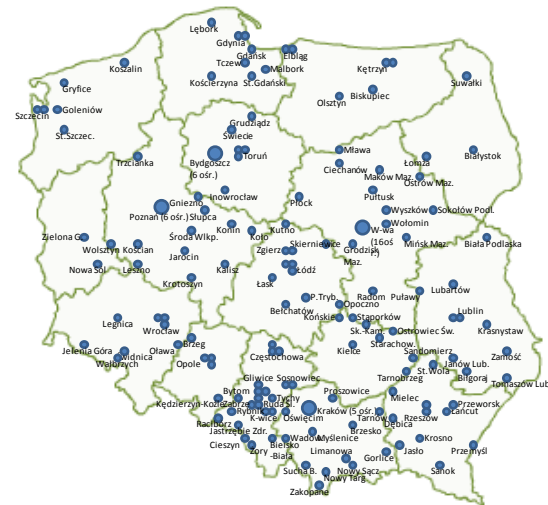


After IMD outbreaks

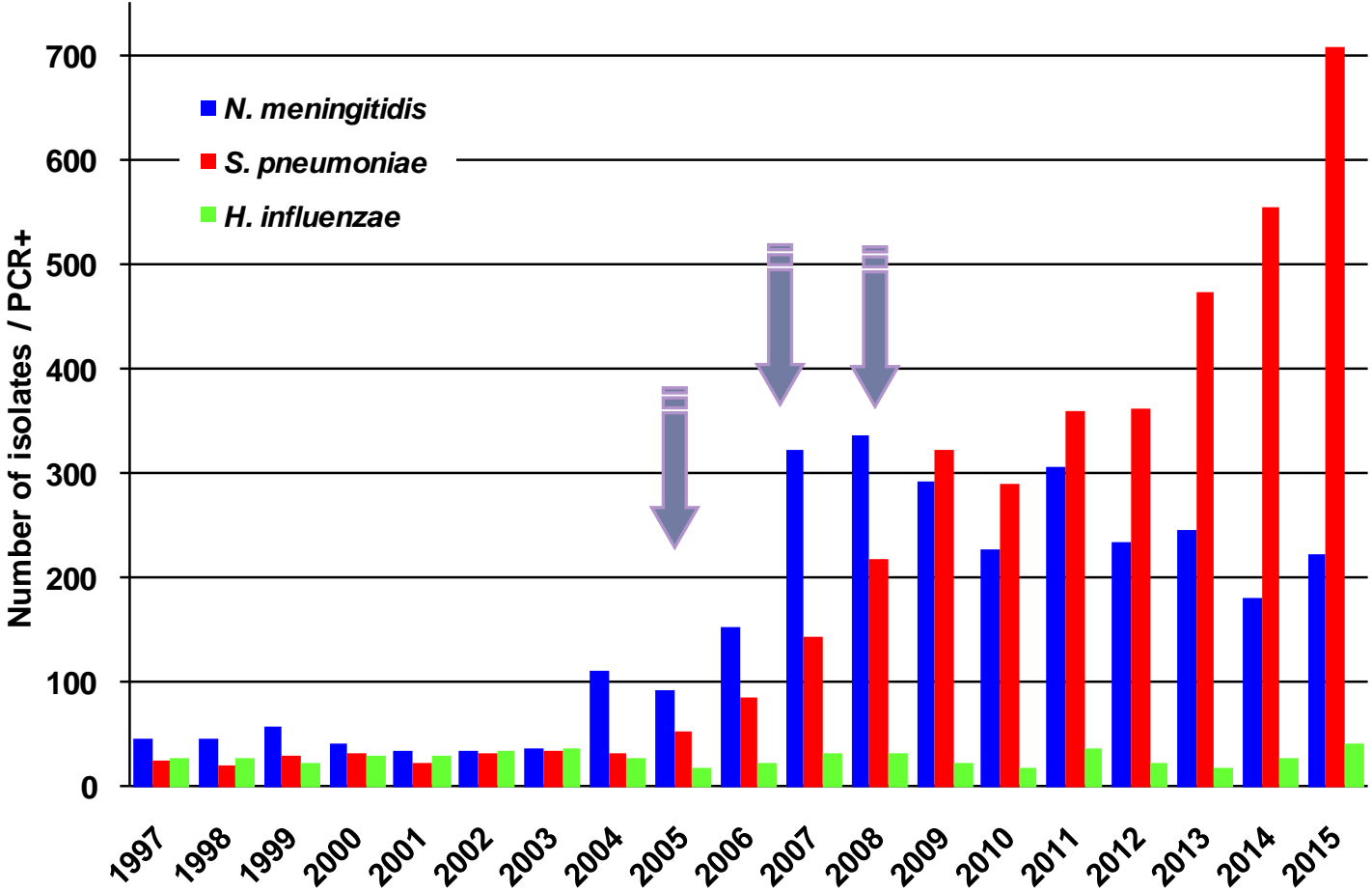


2008 – project BINet was established to enhance laboratory based surveillance of community-acquired invasive bacterial infections in Poland

- *N. meningitidis*
 - *S. pneumoniae*
 - *H. influenzae*
 - *S. pyogenes*
 - *S. agalactiae*
 - *E. coli*
 - *L. monocytogenes*
 - *S. aureus**
- **Coordination by the NRCBM**
 - **Every lab can send isolates and also clinical material from IBI for non-culture diagnostic**
 - **For laboratories involved in the project, shipment of isolates/materials and diagnostics is free of charge**
 - **Currently ~ 180 hospital labs involved in the net**



With BINet



Activity of the NRCBM

Year	Isolates	Materials for PCR	Results
2007	508	425 (298)	442
2008	643	533 (376)	973
2009	759	719 (489)	1329
2010	845	651 (468)	1266
2011	836	641 (489)	1315
2012	1021	832 (596)	1633
2013	1155	864 (631)	1816
2014	1022	833 (641)	1713
2015	1288	924 (734)	1987



Remarks after years of surveillance

- ▶ **More isolates and materials sent to the NRCBM**
- ▶ **More patient's data collected (NRCBM - phone calls)**
- ▶ **Transport free of charge**
- ▶ **Diagnostic free of charge**

But also

- ▶ **Better contact with microbiologists and clinicians**
 - ▶ **Education: meetings, lectures, newsletters, publications, consultations**
 - ▶ **The NRCBM website with needed information**
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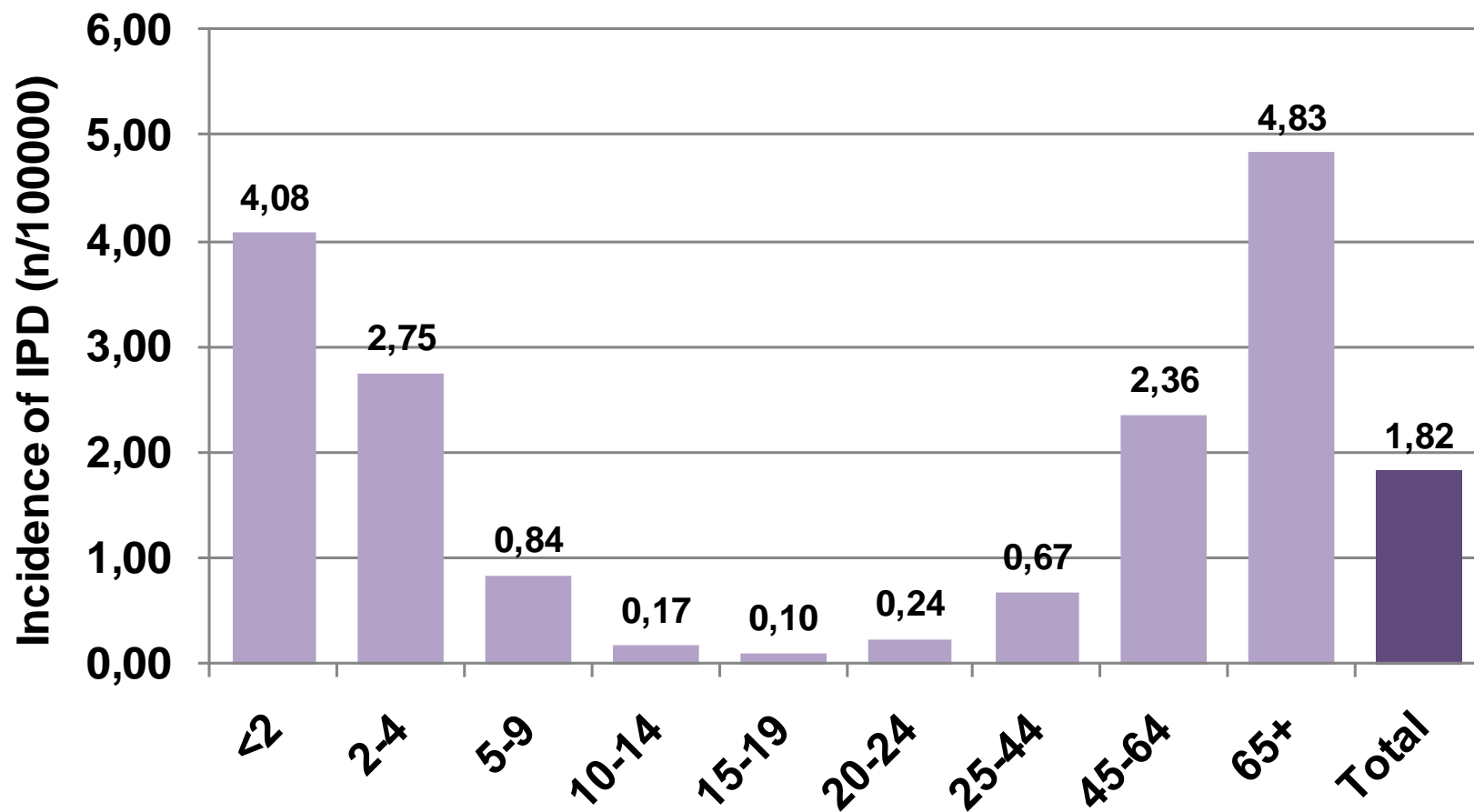


Problems with surveillance system

- ▶ **Lack of regulations (law)**
- ▶ **Funding**
- ▶ **Long time only meningitis was notified (IPD – meningitis ~ 30%)**
- ▶ **Rare blood sampling**
- ▶ **Prior antibiotic therapy (IPD ~ 30%)**
- ▶ **PCR more often used for suspected IMD**
- ▶ **Compulsory vs voluntary notification**
- ▶ **More and more data expected...**
- ▶ **More and more detailed characteristics needed**

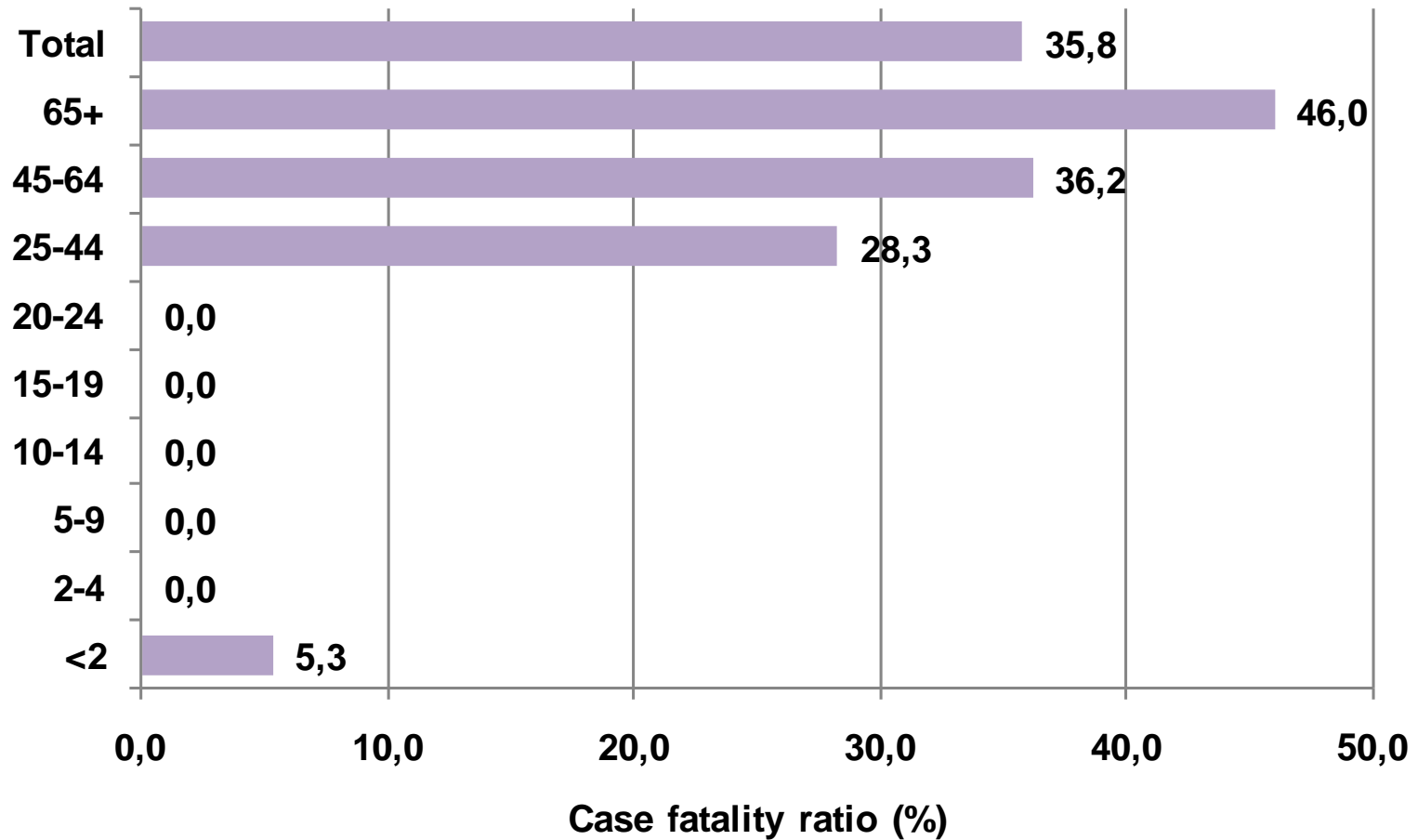


Underestimation of IPD, Poland 2015 (n=700)

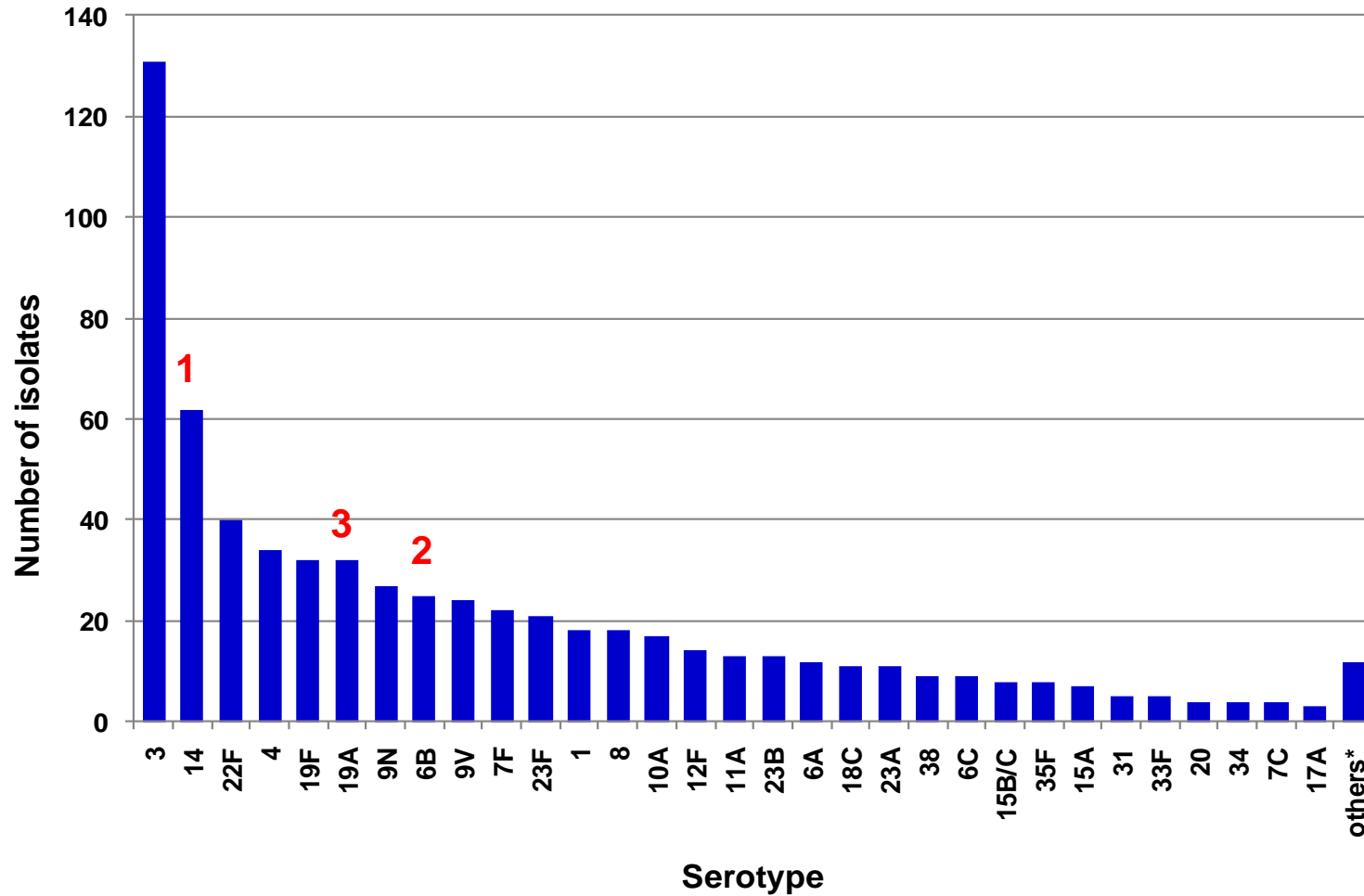


Case fatality ratio from IPD by age groups, 2015

(infections with known outcome, n=517)

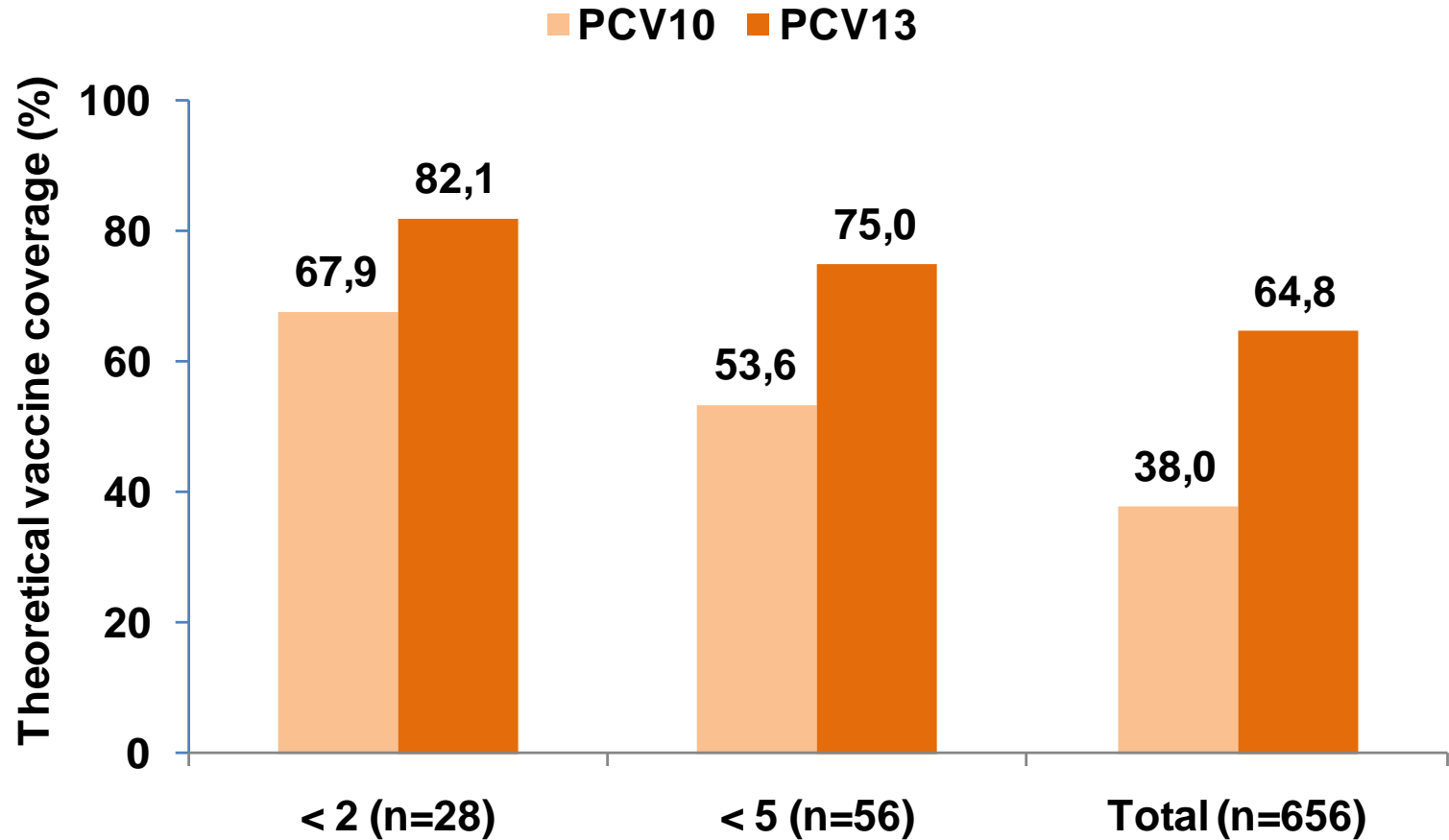


Serotypes distribution among IPD cases, 2015 (n=655)



*11 serotypes represented by 1-2 isolates

Theoretical PCV vaccine coverage, 2015



Conclusions

- ▶ **Outbreaks help, unfortunately...**
- ▶ **Education**
- ▶ **Feedback**
- ▶ **Improvement... with permanent problems, although long way to go (underestimation)**



Acknowledgments

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Team of the NRCBM:

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- ▶ **Alicja Kuch**
- ▶ **Izabela Waśko**
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