



ROBERT KOCH INSTITUT



# **Epidemiology of *Chlamydia trachomatis* infections in Germany: Data from the STD-Sentinel**

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**European Conference of National Strategies for *Chlamydia trachomatis* and Human Papillomavirus  
May 26-27, 2011, Jurmala, Latvia**

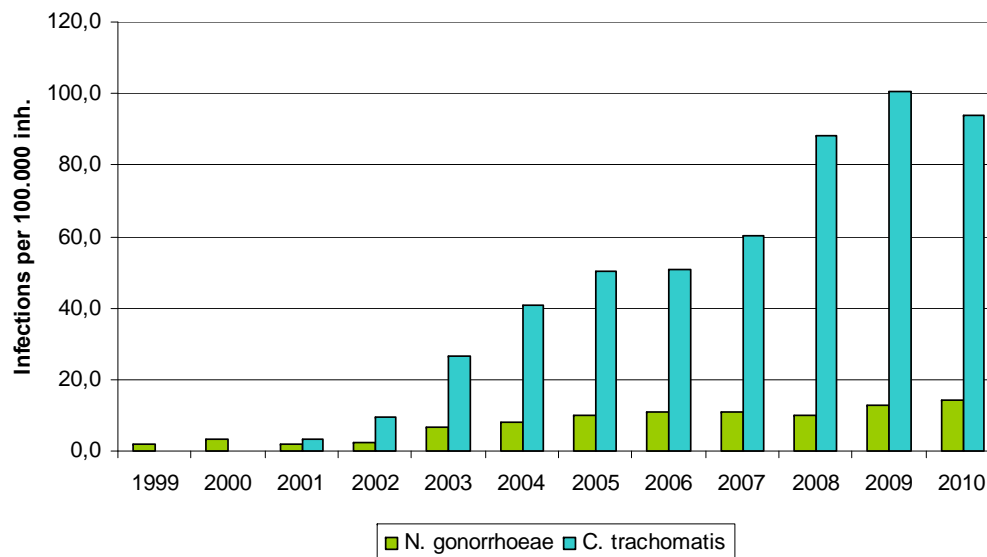
# Overview

- German reporting system – legal matters
- STD-Sentinel-surveillance 2002-2009
  - Methods
  - Trends: Positivity rate over time
  - Characteristics of patients with chlamydia
  - Behaviour
    - Number of partners
    - Condom usage
- Chlamydia screening in Germany
- Implementation of a *Chlamydia trachomatis* laboratory sentinel

# STI -Surveillance in Germany

- Only Syphilis and HIV reportable
  - Since 2001, according to §7 Abs. 3 IfSG
  - Anonymous laboratory reporting, supplemented with clinical data from doctors
  - Merged at Robert Koch-Institut (RKI)
  - HIV: coded unique identifier
- Other STIs (including chlamydia)
  - Not reportable on national level
    - STD-Sentinel implemented in the end of 2002
  - Laboratory notification system in Saxony

Gonorrhoea und Chlamydia Infections  
Saxony, 1999-2010



# STD-Sentinel

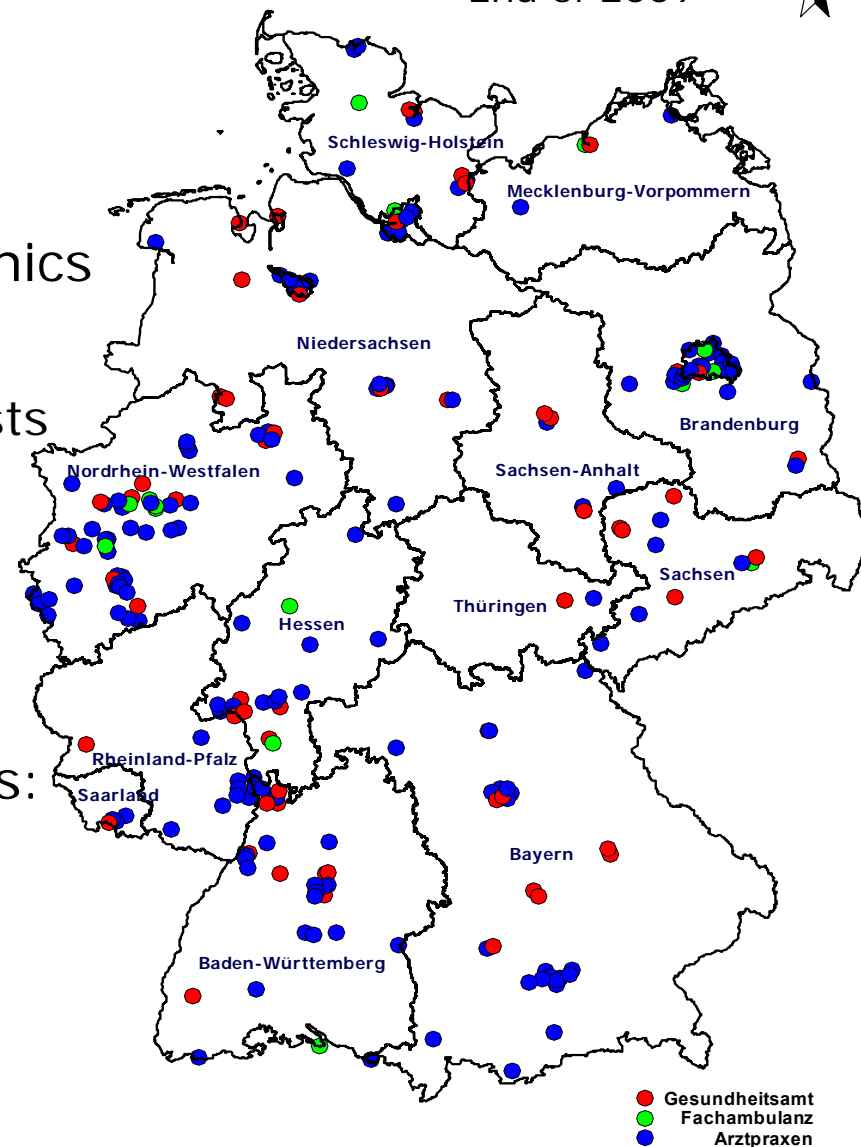
End of 2009



- 231 Sentinel - institutions
  - 62 local health authorities
  - 17 specialized outpatient clinics
  - 152 practitioners
    - 50% Dermatologovenerologists
    - 17% Gynaecologists
    - 17% HIV-Specialists
    - 15% Urologists
    - 1% GP

Reported lab-confirmed infections:

- HIV
- Gonorrhoea
- Chlamydia
- Syphilis
- Trichomonas
- Lymphogranuloma venereum
- Chancroid



# Results: Number of tests and positive diagnoses by healthcare facility and STI

LHO: Local health office; SOC: specialized outpatient clinic

	Healthcare facility	Number of tests	%	Number of positive cases	%	Positivity rate in %
<b>HIV</b>	LHO	310779	90	1835	49	0,59
	SOC	14080	4	1189	32	8,44
	Practitioners	18840	6	687	19	3,65
	<b>Total</b>	<b>343705</b>	<b>100</b>	<b>3711</b>	<b>100</b>	<b>1,08</b>
<b>Chlamydia</b>	LHO	64878	66	2840	47	4,38
	SOC	1530	2	164	3	10,72
	Practitioners	31997	32	2951	50	9,22
	<b>Total</b>	<b>98405</b>	<b>100</b>	<b>5955</b>	<b>100</b>	<b>6,05</b>
<b>Gonorrhoea</b>	LHO	79924	83	1512	43	1,89
	SOC	1940	2	277	8	14,28
	Practitioners	14760	15	1722	49	11,67
	<b>Total</b>	<b>96624</b>	<b>100</b>	<b>3511</b>	<b>100</b>	<b>3,63</b>
<b>Syphilis</b>	LHO	72982	60	1017	28	1,39
	SOC	16419	14	984	28	5,99
	Practitioners	31045	26	1590	44	5,12
	<b>Total</b>	<b>120446</b>	<b>100</b>	<b>3591</b>	<b>100</b>	<b>2,98</b>
<b>Trichomonas</b>	LHO	34598	39	593	27	1,71
	SOC	980	1	7	0	0,71
	Practitioners	52341	60	1584	73	3,03
	<b>Total</b>	<b>87919</b>	<b>100</b>	<b>2184</b>	<b>100</b>	<b>2,48</b>

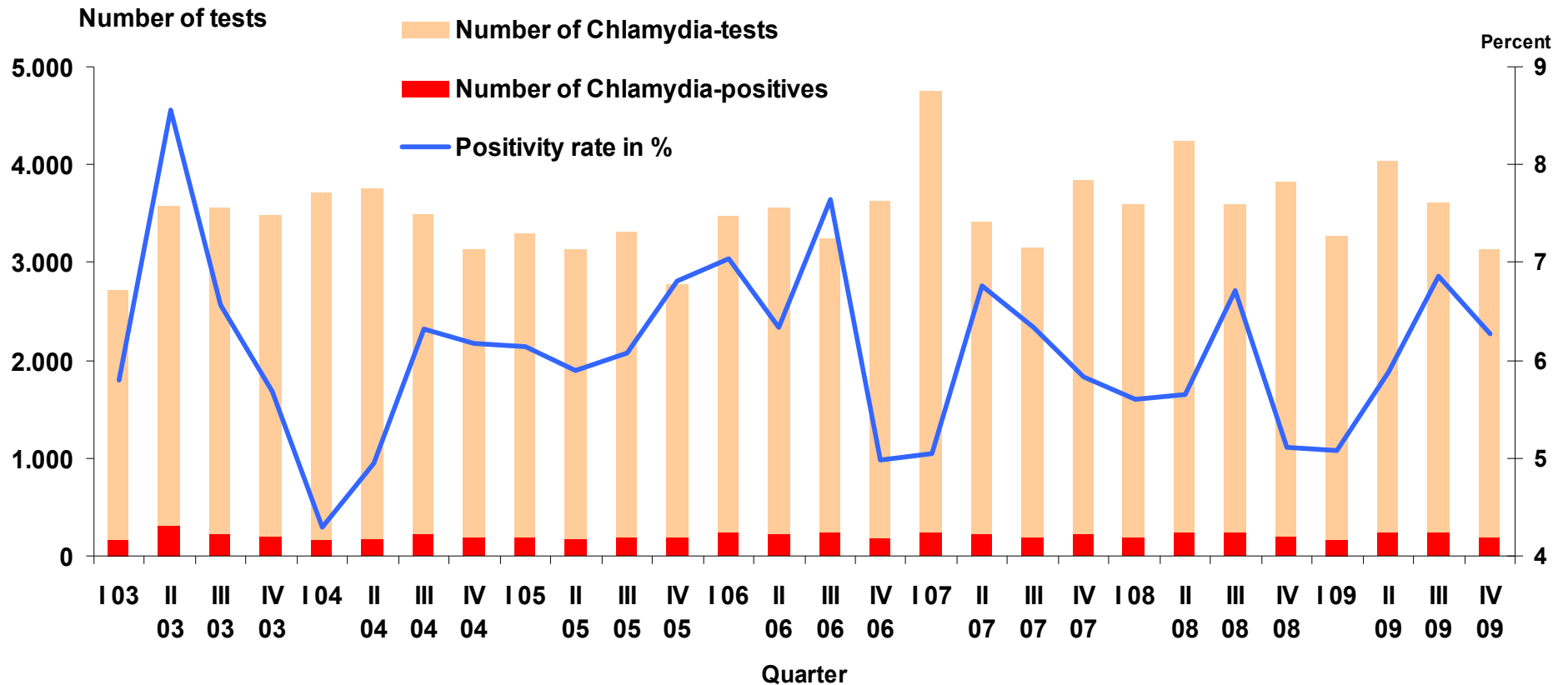
747.099 tests, 18.952 positive diagnoses



# Chlamydia- Trend

(Data from 5692 Quarterly/Monthly  
report forms)

# Chlamydia positivity rate over time



# Characteristics of patients with chlamydia

Data from 3221 diagnosis questionnaires  
(Dataset: 30.4.2010)

# Patients with chlamydia

Jan 2003 - Dec 2009

Men  
n= 1.162

Women  
n= 2.058

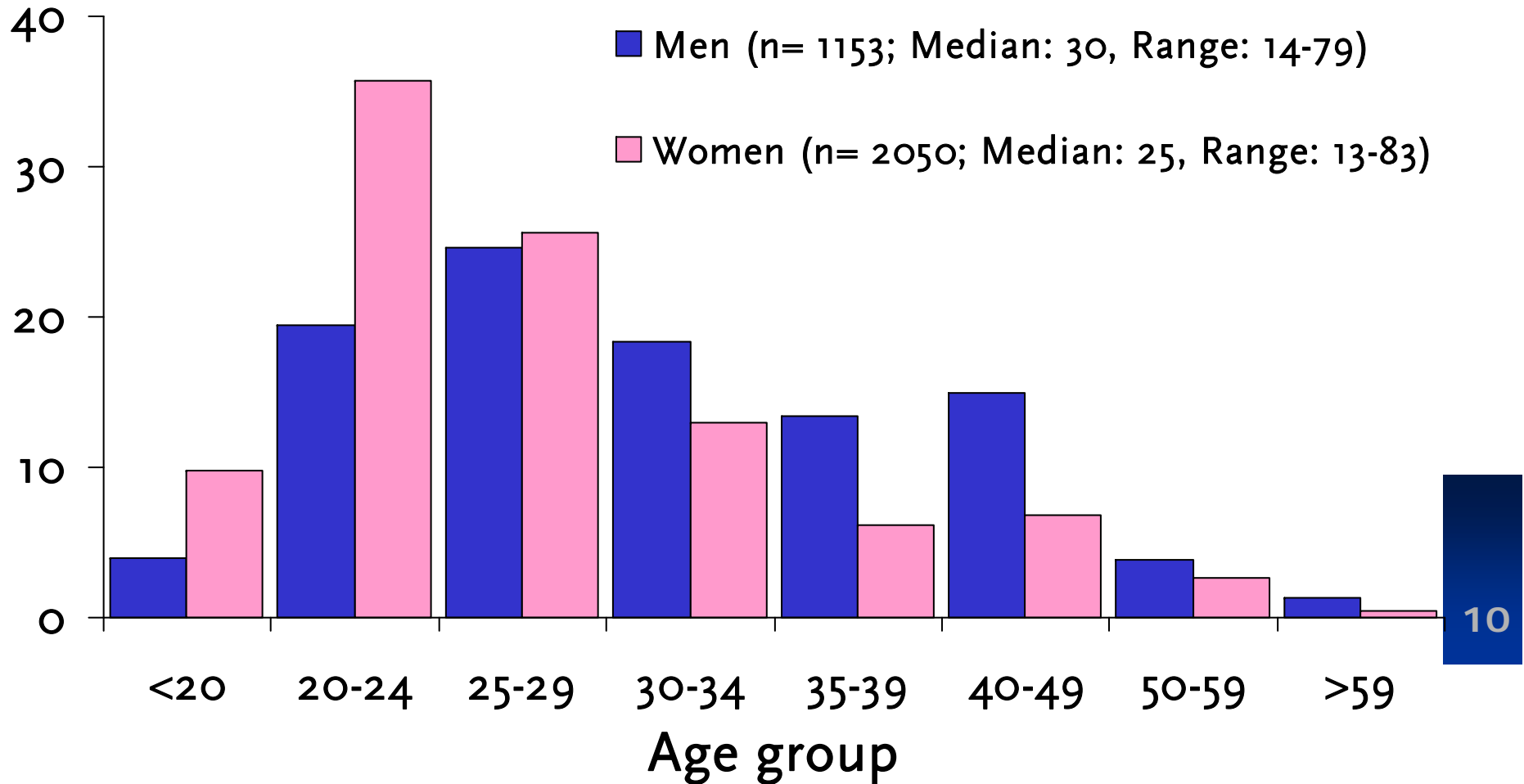
Total  
n= 3.220

Proportion	36,1 %	63,9 %	100 %
Median age (Years)*	30	25	27
Migrants*	32,1 %	63,1 %	51,9 %
MSM	45,4 %	--	16,4 %
Sexworker*	7,7 %	70,0 %	47,5 %
i.v.- drug-user <sup>#</sup>	0,3 %	0,9 %	0,7 %
History of STI*	30,0 %	19,2 %	23,1 %

\* statistically significant difference in gender (p<0,001); #p<0,05; 1 transsexual and missing ages excluded

# Chlamydia patients – Age distribution

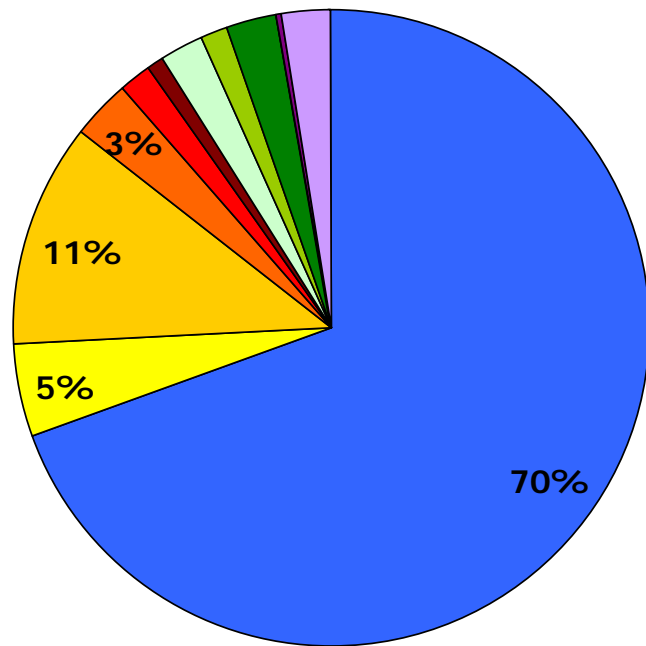
Percent



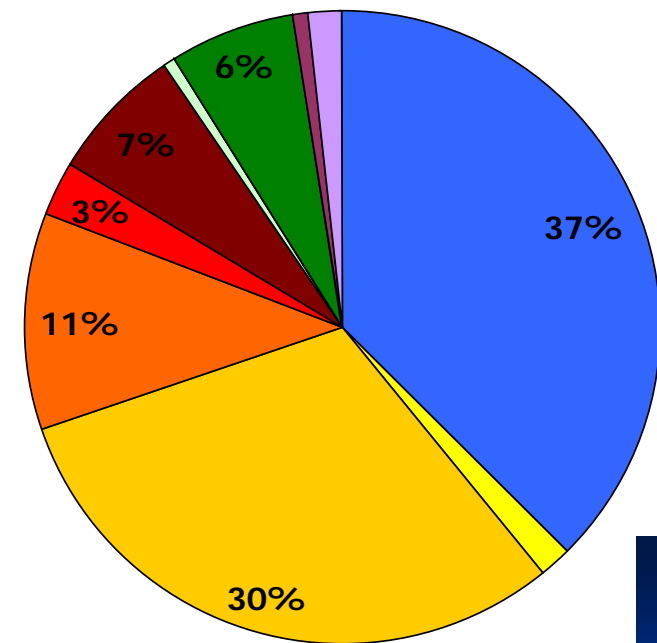
# Origin of chlamydia-patients

n=3220

## Men



## Women



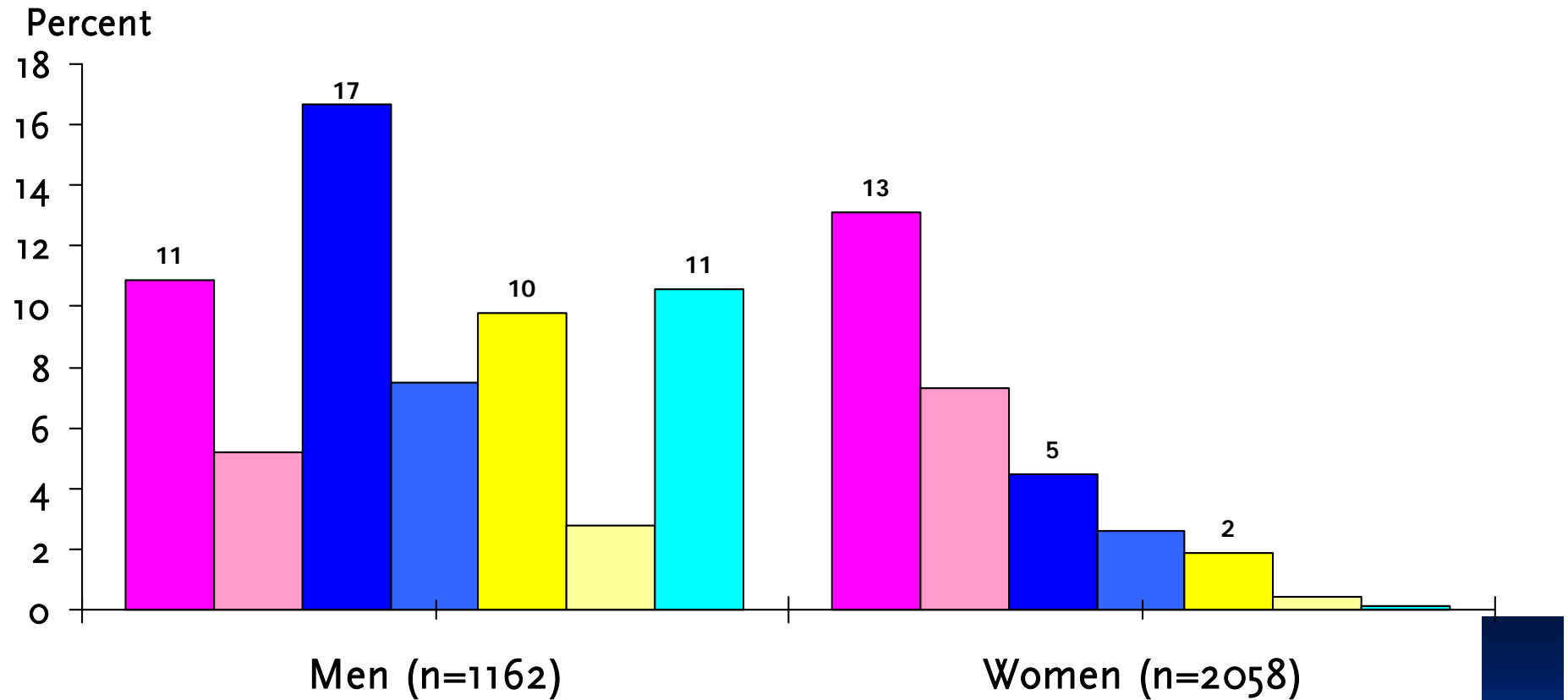
- Germany
- Western Europe
- Central Europe
- Eastern Europe
- Sub-Saharan Africa
- Asia
- Middle East
- North America
- Latin America
- Australasia
- 'abroad'
- no data



# History of STI and Co-infections in chlamydia patients

Data from 3221 diagnosis questionnaires  
(Dataset: 30.4.2010)

# History of STI in chlamydia patients in %



History of STI:

- CT total
- GO total
- SY total
- HIV
- CT within the last 12 months
- GO within the last 12 months
- SY within the last 12 months

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# Co-infections in chlamydia patients

n=3220

Jan 2003 – Dec 2009

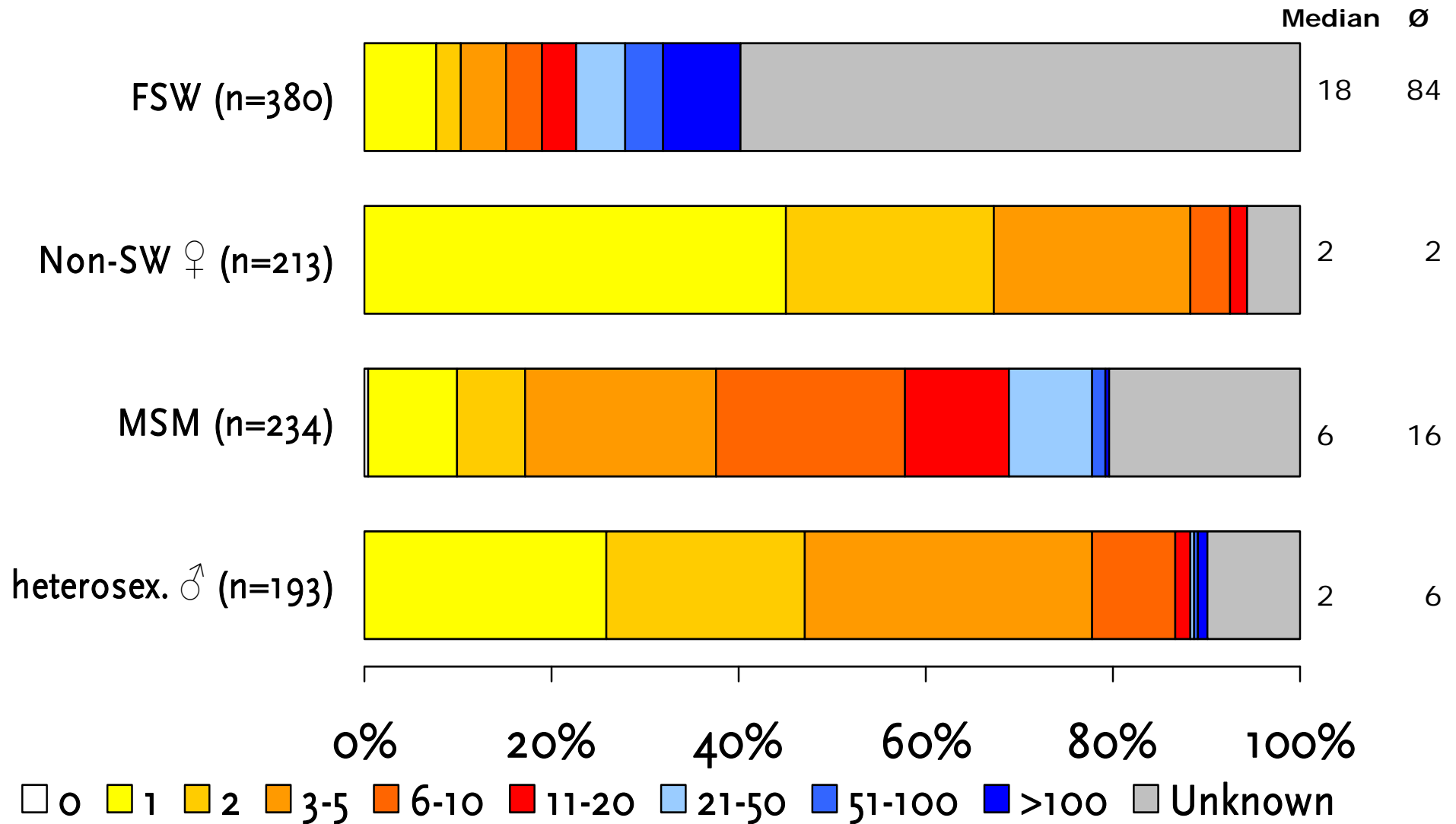
	GO	SY	HIV	Trich
CT total	10%	1.5%	0.9%	1.8%
CT Men (n=1162)	13,9% (161/1162)	3.7% (43/1162)	2,3% (27/1162)	0.5% (6/1162)
CT Women (n=2058)	7.8% (160/2058)	0.2% (4/2058)	0.1% (1/2058)	2,5% (52/2058)



# Sexual behaviour in chlamydia patients

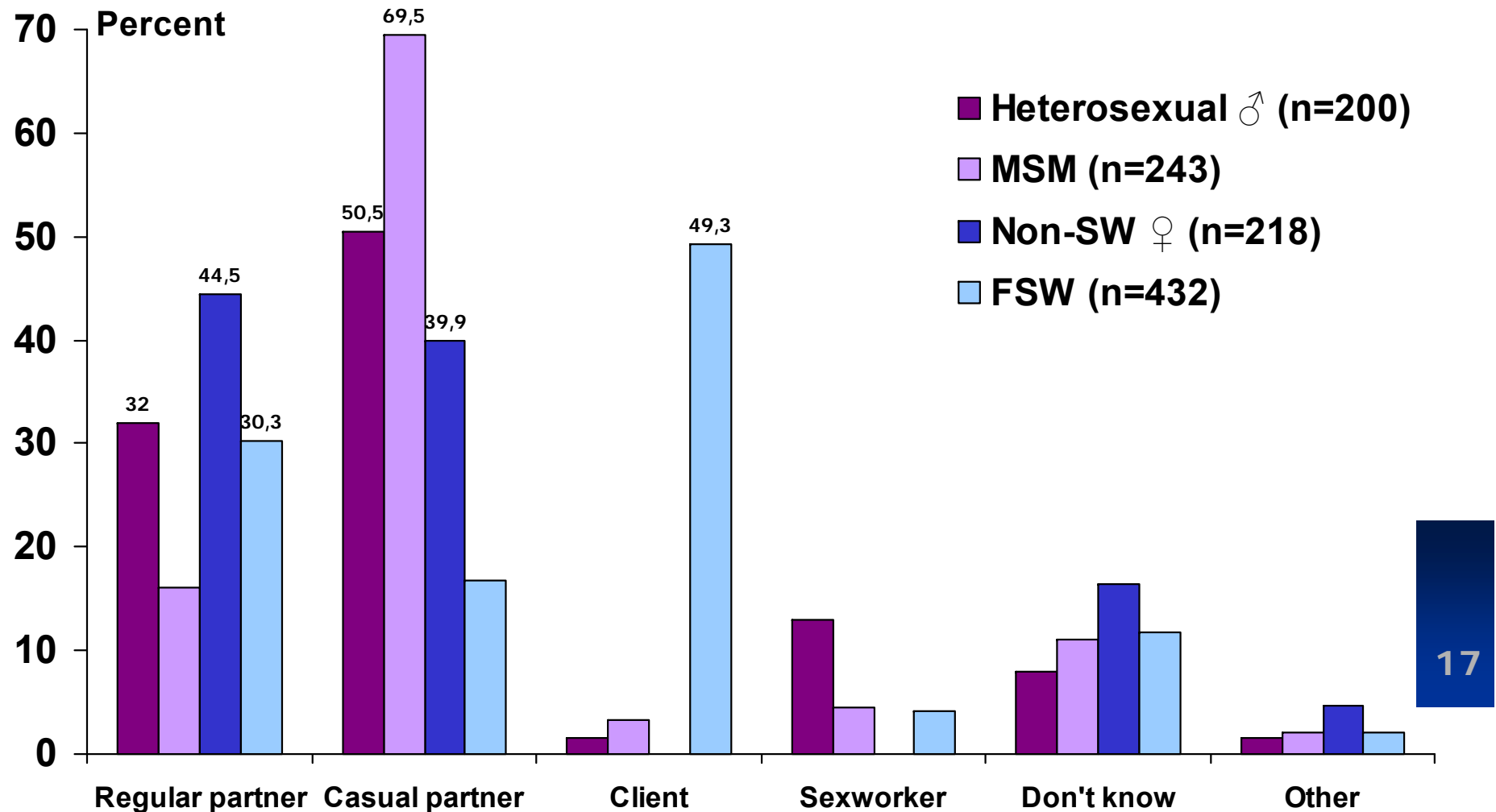
Data from 1126 patient questionnaires  
(Dataset: 30.4.2010)

# Number of sexual partners within the last 6 months in patients with chlamydia



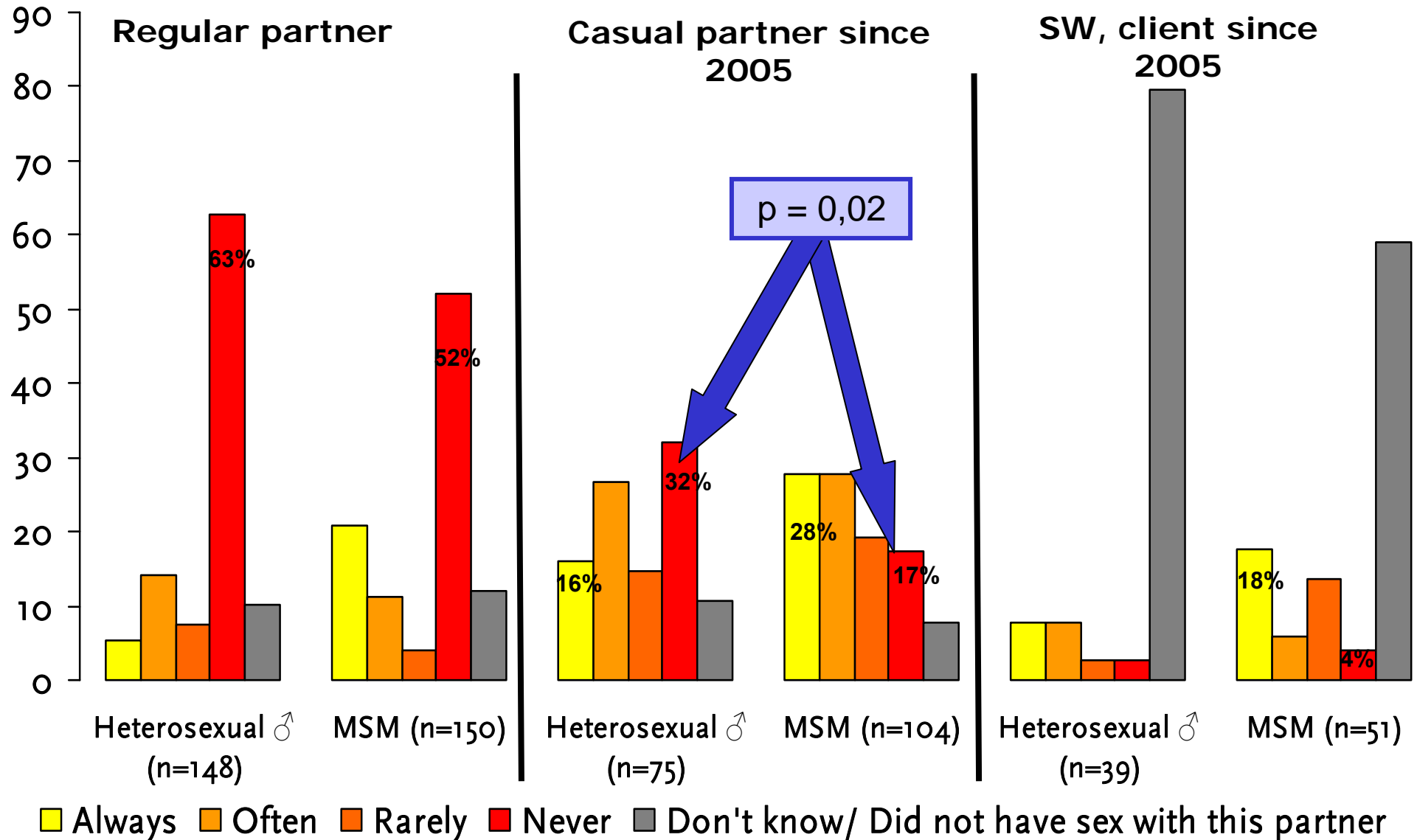
# Possible source of infection

(stated by patient)

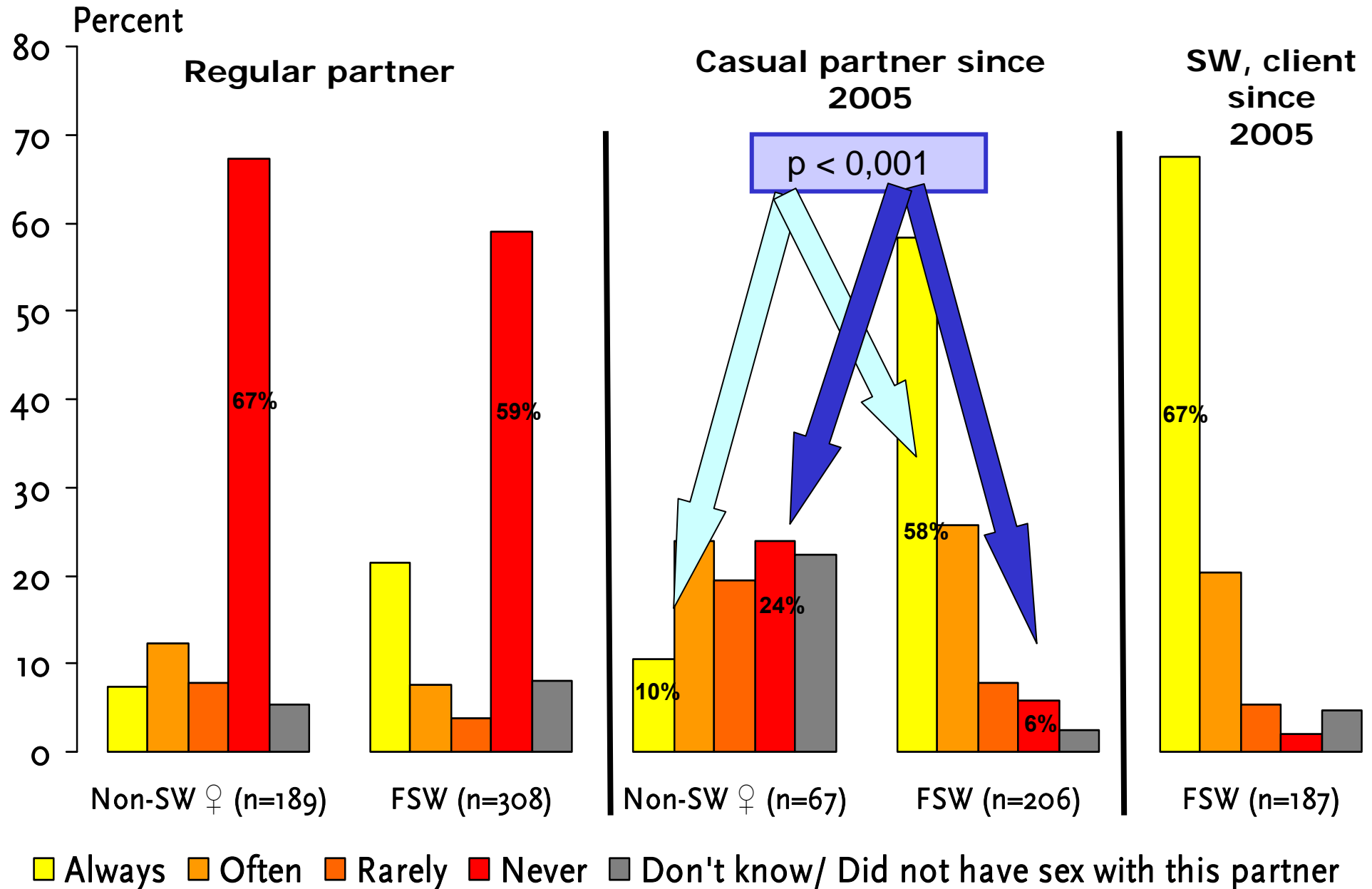


# Condom usage within the last 6 months – Men with CT

Jan 2003 – Dec 2009



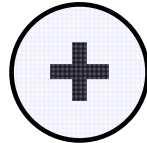
# Condom usage within the last 6 months – Women with CT



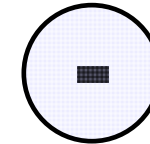
# Summary

- German STD-Sentinel:
  - 6% chlamydia positive of all examined clients
  - High percentage of
    - Migrants (63% of women and 32% of men)
    - Sex workers (70% of women)
    - MSM (45% of men)
  - Infection rates not representative for the general population
- Sentinel-patients with *Chlamydia trachomatis* infection:
  - 64% of all patients with chlamydia women
  - Women: 20-24 years
  - Men: 25-29 years
  - High re-infection rates
  - High co-infection rates

# Pros and Cons – German STD-Sentinel



- Relatively cheap
- Relatively easy
- Quality of data
- Geographical coverage
- Linkage of biological with behavioural data
- Information on core groups
- Well established network of various health-care providers
- Possibility for additional sub-studies (PARIS, LGV-subtesting)



- Not representative for general population
- No denominator → no incidence rate
- Data depending on sample of health-care providers
- Timely trends have to be interpreted cautiously
- Motivation of health-care providers without incentives sometimes difficult
- Behavioural data only of infected persons

# Chlamydia screening in Germany

# Chlamydia screening in Germany

- **Sept. 2007:** The Federal Joint Committee (G-BA): Opportunistic Chlamydia Screening Programme
  - Sexually active women < 25 years
  - Costs covered by statutory health insurance
  - Yearly
  - Urine, cervical swab (only in 2008)
  - NAT , EIA (only in 2008)
  - Pooling up to 5 specimens possible
- **Jan. 2008:** Start of the Chlamydia-Screening in Germany
  - **No concomitant national data collection!**

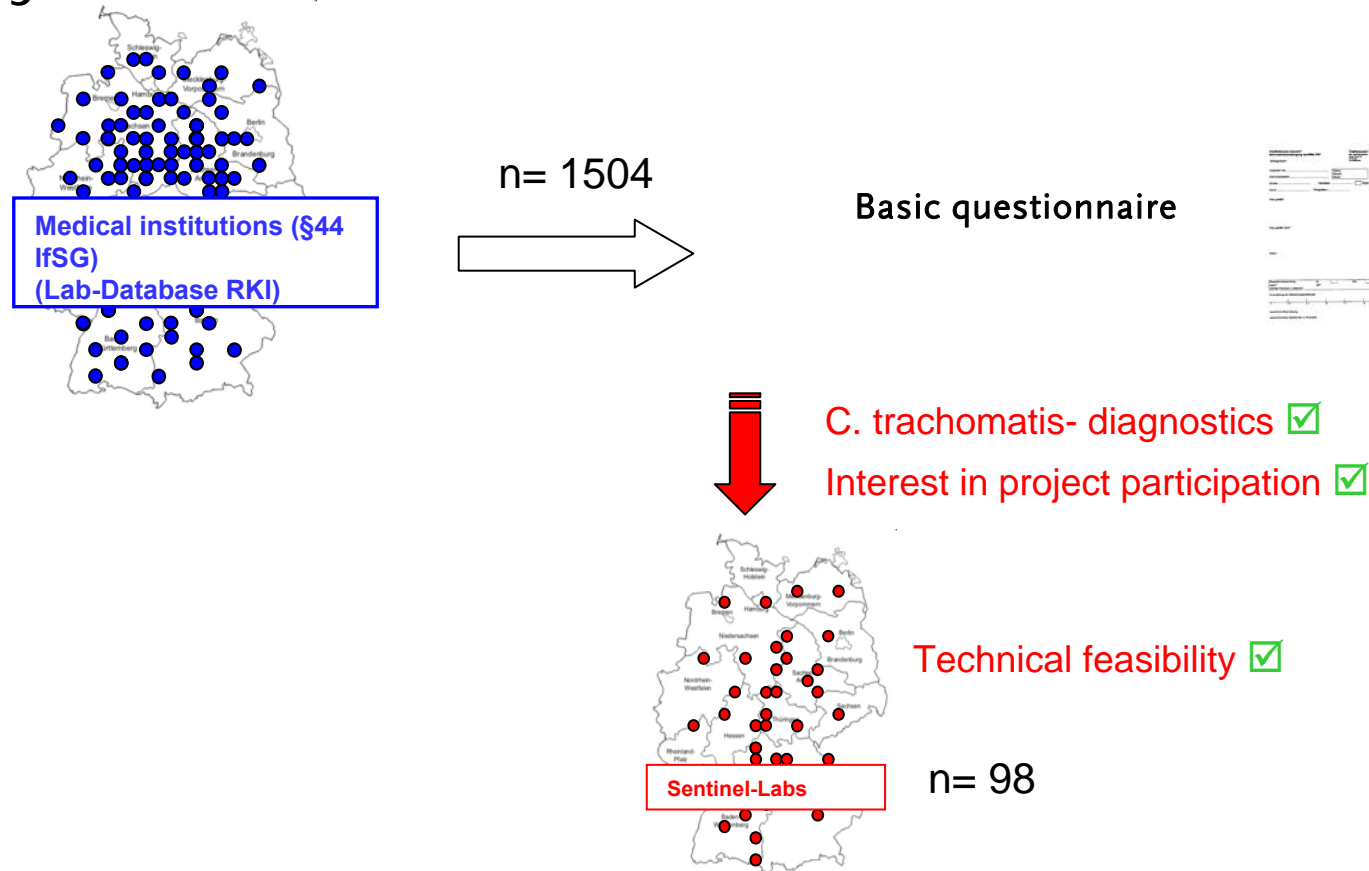
The **Federal Joint Committee** (G-BA) is the highest decision-making body of the joint self-government of physicians, dentists, hospitals and health insurance funds in Germany. It issues directives for the benefit catalogue of the statutory health insurance funds (GKV) for more than 70 million insured persons and thus specifies which services in medical care are reimbursed by the GKV. In addition, the G-BA specifies measures for quality assurance in inpatient and outpatient areas of the health care system.

# *Chlamydia trachomatis* laboratory sentinel in Germany

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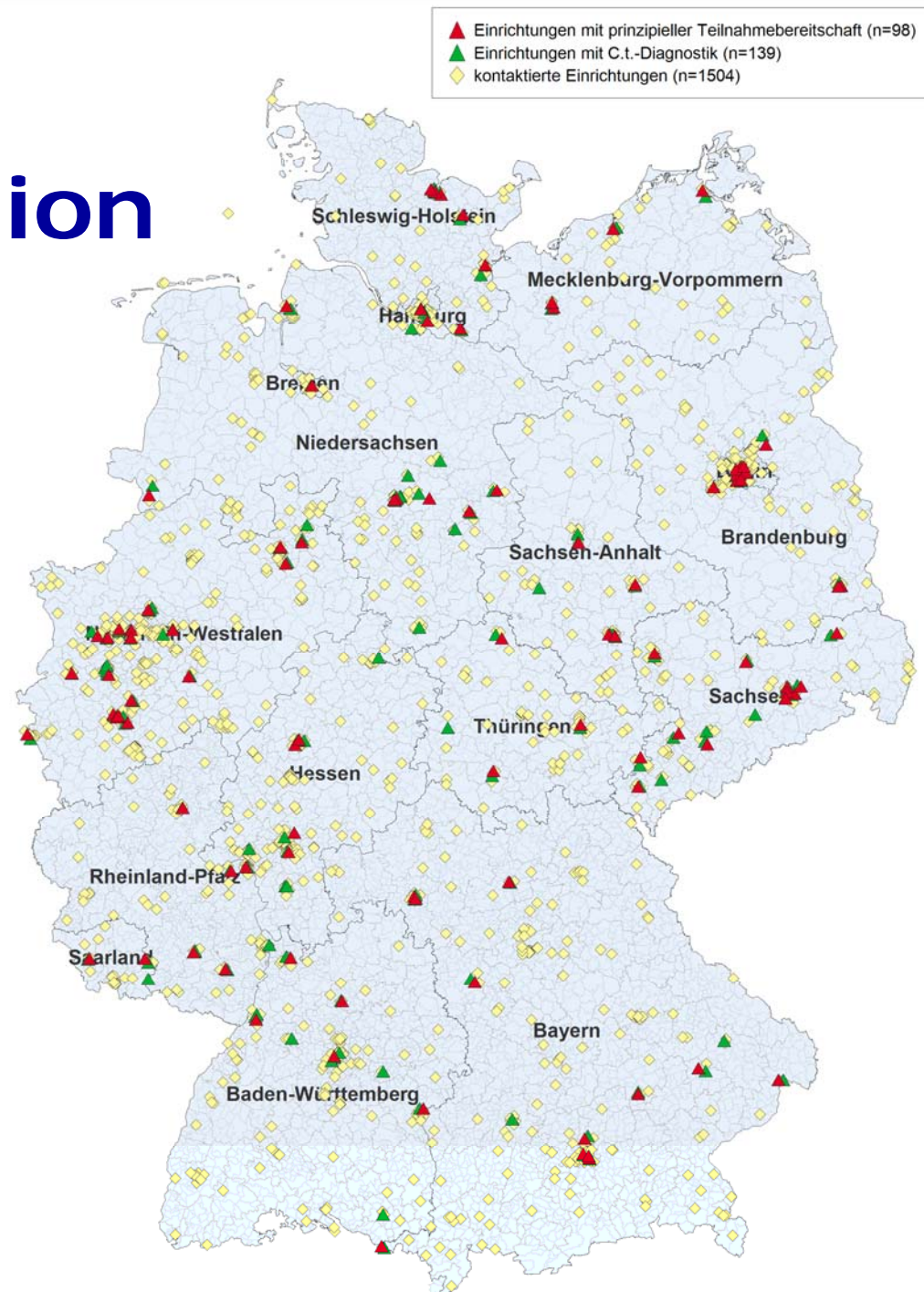
# Chlamydia lab sentinel

- Project: started in Sept. 2010 → for 3 years
- Continuous electronic collection of data that are already existent in labs



# First results: Lab distribution in Germany

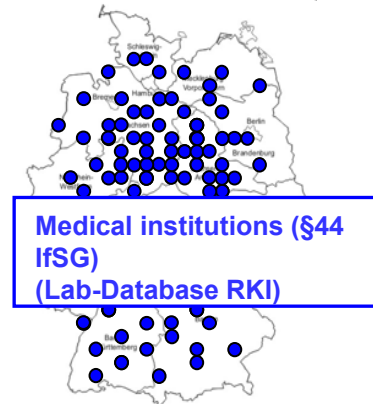
- Contacted institutions:  
n= 1504
- Response: n= 719 (48%)
- Performance of  
*Chlamydia trachomatis*-  
diagnostics: n= 139
- Interest in participation: n= 98



# Objectives and Goals

## Basic data from institutions with Chlamydia-diagnostics:

- Regional distribution and catchment
- Number of chlamydia tests/ quarter
- Testing methods
- Technical standards (Software)



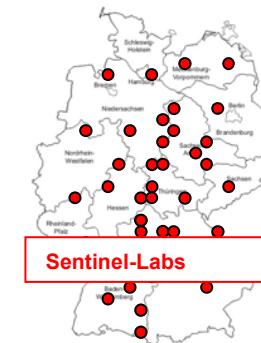
## CONTINUOUS:

### *Chlamydia trachomatis* –prevalence data:

- Number of tests
- Number of positives
- Age distribution
- Gender distribution
- Regional distribution
- Trends in positivity rate
- Specimens (Urine, Swab from...)

### Reasons for testing:

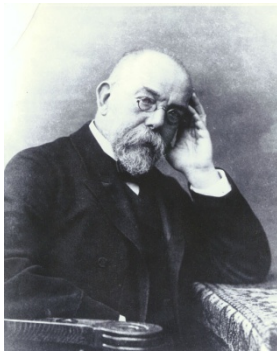
- Reasons (preventive/curative)
- Repeat testing



# Conclusions

If no mandatory STI reporting system in place:

- STD-Sentinel surveillance (= BORDERNETwork)
  - Feasible with low resources
  - Data dependent on sample of sentinel sites
  - Vulnerable/groups with risky behaviour well represented
  - Second generation surveillance
- Chlamydia lab sentinel surveillance
  - Electronic (automated) data transmission
  - Prevalence data
  - Trends visible
  - No behaviour data



# Thank you!

Andrea Sailer  
Osamah Hamouda  
Viviane Bremer  
Daniel Schmidt  
Petra Stöcker  
Alexandra Hofmann  
Ulrich Marcus  
Margot Bayer  
Gisela Enders  
Birgit Henrich  
Thomas Meyer  
Eberhard Straube  
Annett Friedrich  
All staff from sentinel sites  
All participating patients



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