Infectious disease surveillance information for action

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About me

- Medical studies in Göttingen
- Small hospital in Berlin
- Robert-Koch-Institute
- Ministry of health
- Local public health office

Public health office Reinickendorf

What we do

- contact tracing for infectious diseases
- school entrance exams
- coordinate psychiatric patients
- hygiene control in hospitals
- water safety
- ...

Online Texteditor

What do you percieve as a global health problem?

What action could you take?

What information do you need?
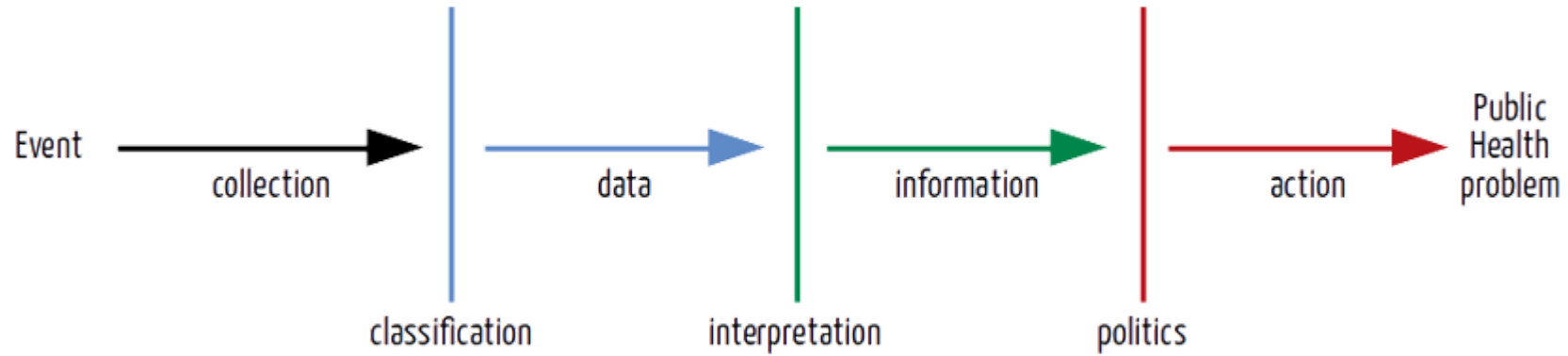
What data do you need to get that information?

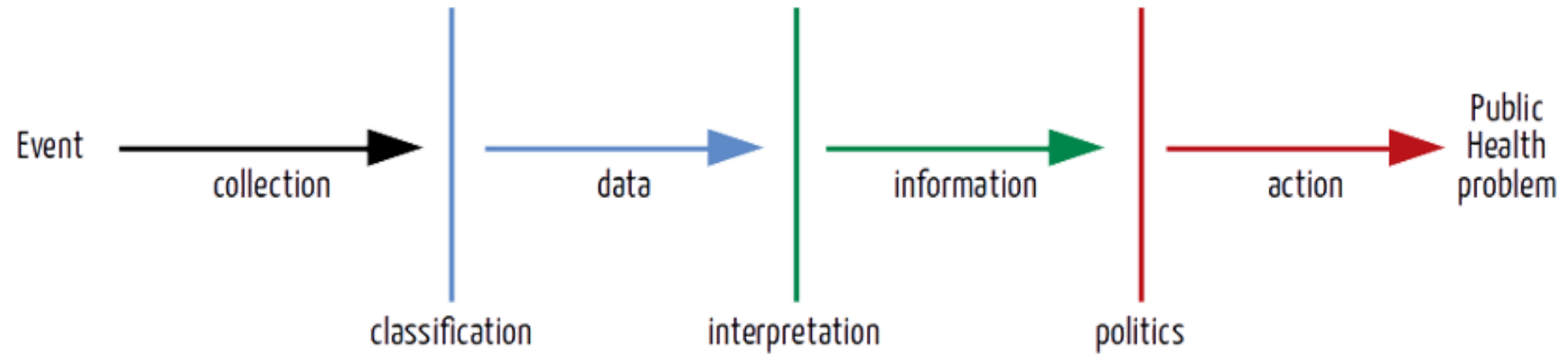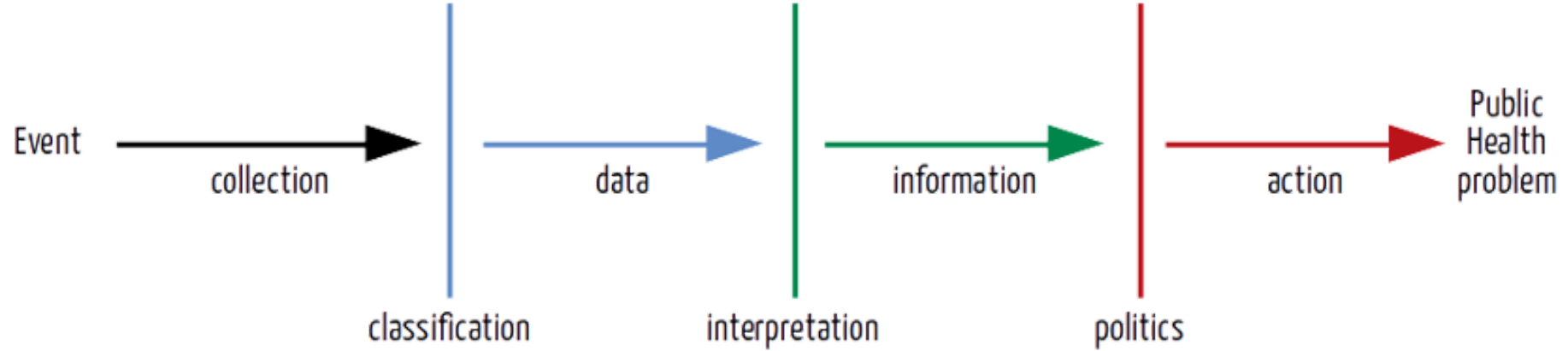How can we collect that data?

Key questions

- What health problem?
- Is there **action** that helps?
- What **information** do we need?
- What **data** do we need?
- How can we **collect** data?
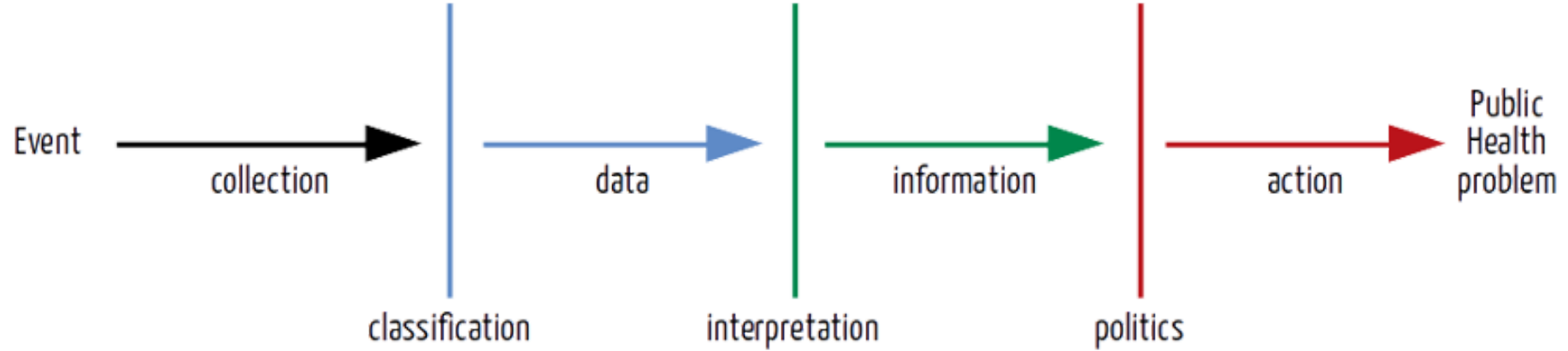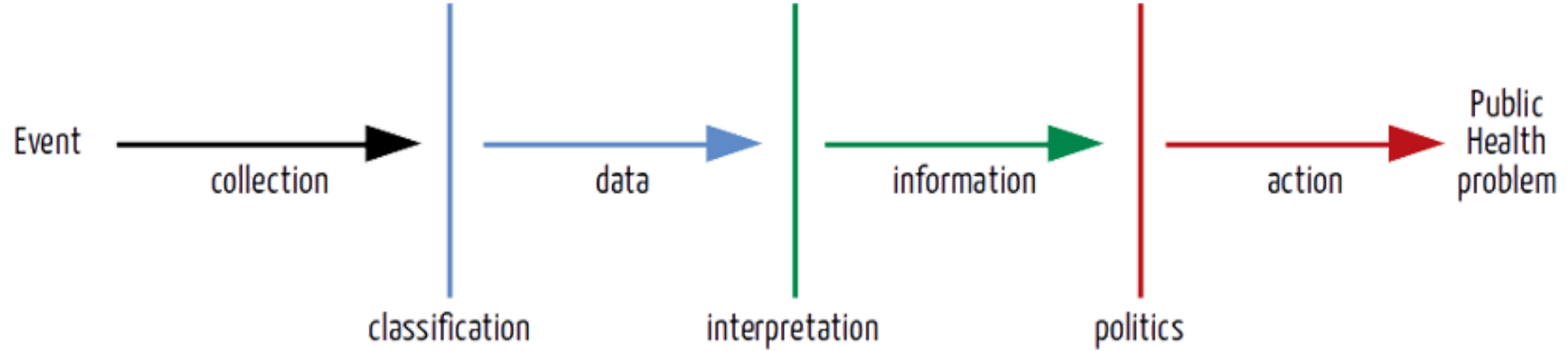
What is a surveillance system?

Event → collection → classification → data → interpretation → information → politics → action → Public Health problem

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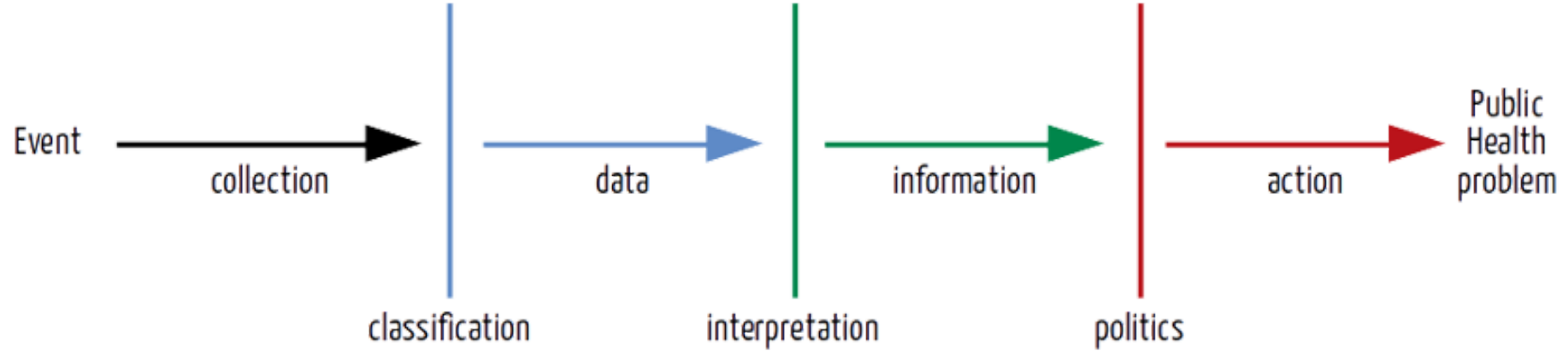
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- **information**: data with meaning, trends, outbreaks...
- **action**: interventions, policy change, resource planing..

Whats NOT a surveillance system

Surveillance
ongoing
problem known
no intervention
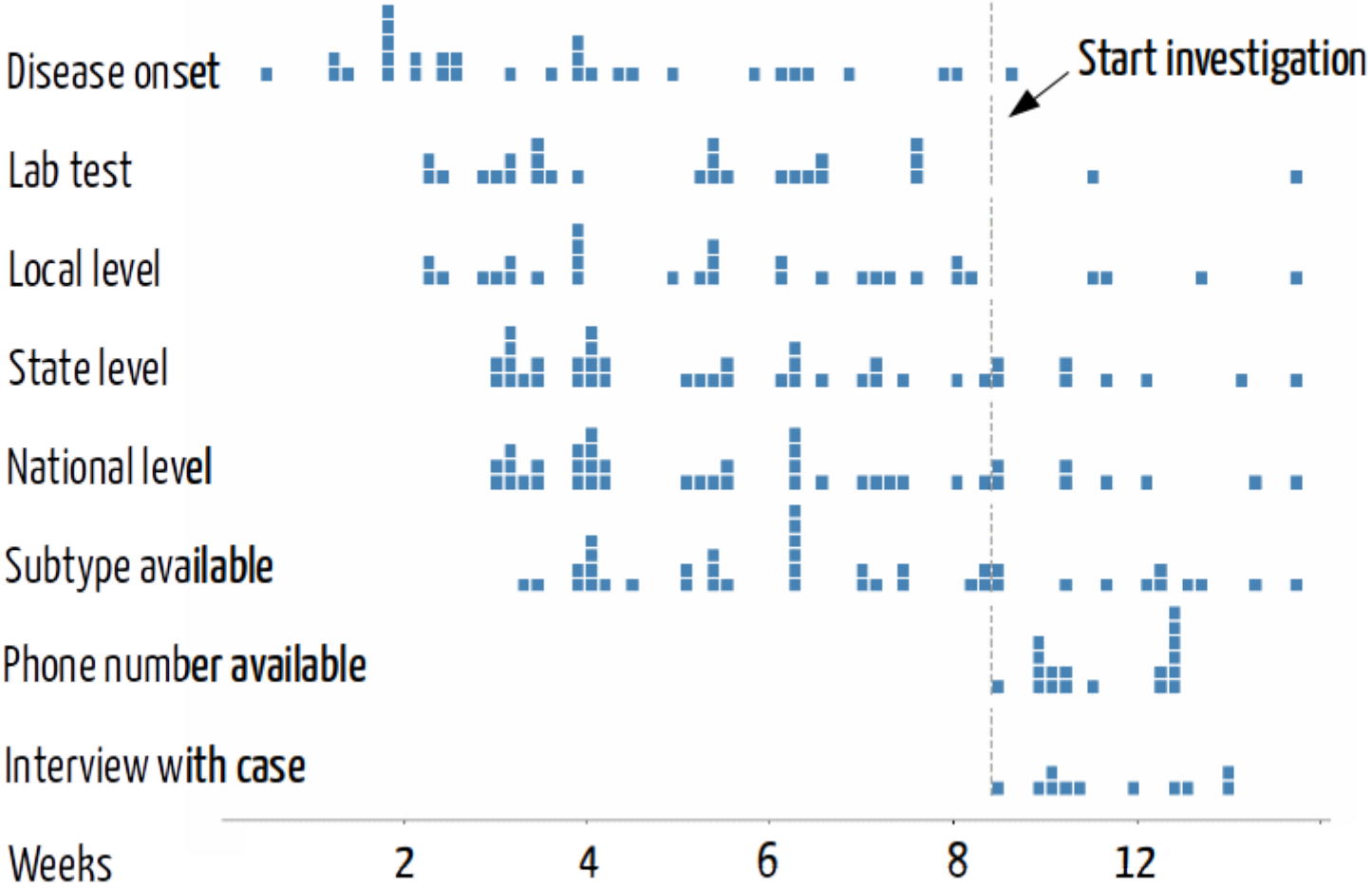action driven

Science
temporary
problem unkown
intervention
hypothesis driven

Typical problem: underreporting

EU
nation
state
reported to local level
getting diagnosed
test taken
seeking healthcare
getting ill
Infected

Typical problem: timeliness

Typical problem: event definition

- norovirus causes gastroenteritis

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Solutions tried:

- Monitor lab reports as well
- Analyze the system often

Typical problem: change

- Surveillance systems dont like change
- Example: people see less doctors --> less cases

Solutions tried:

- Create resilient systems

Typical problem: costs and motivation

- No reimbursment -> no reporting
- Lots of reimbursment -> invented cases

Solutions tried

- Establish a strong legal system
- Sentinal surveillance

Typical problem: unkown event

- New events are difficult to monitor
- Example Anatoxin A

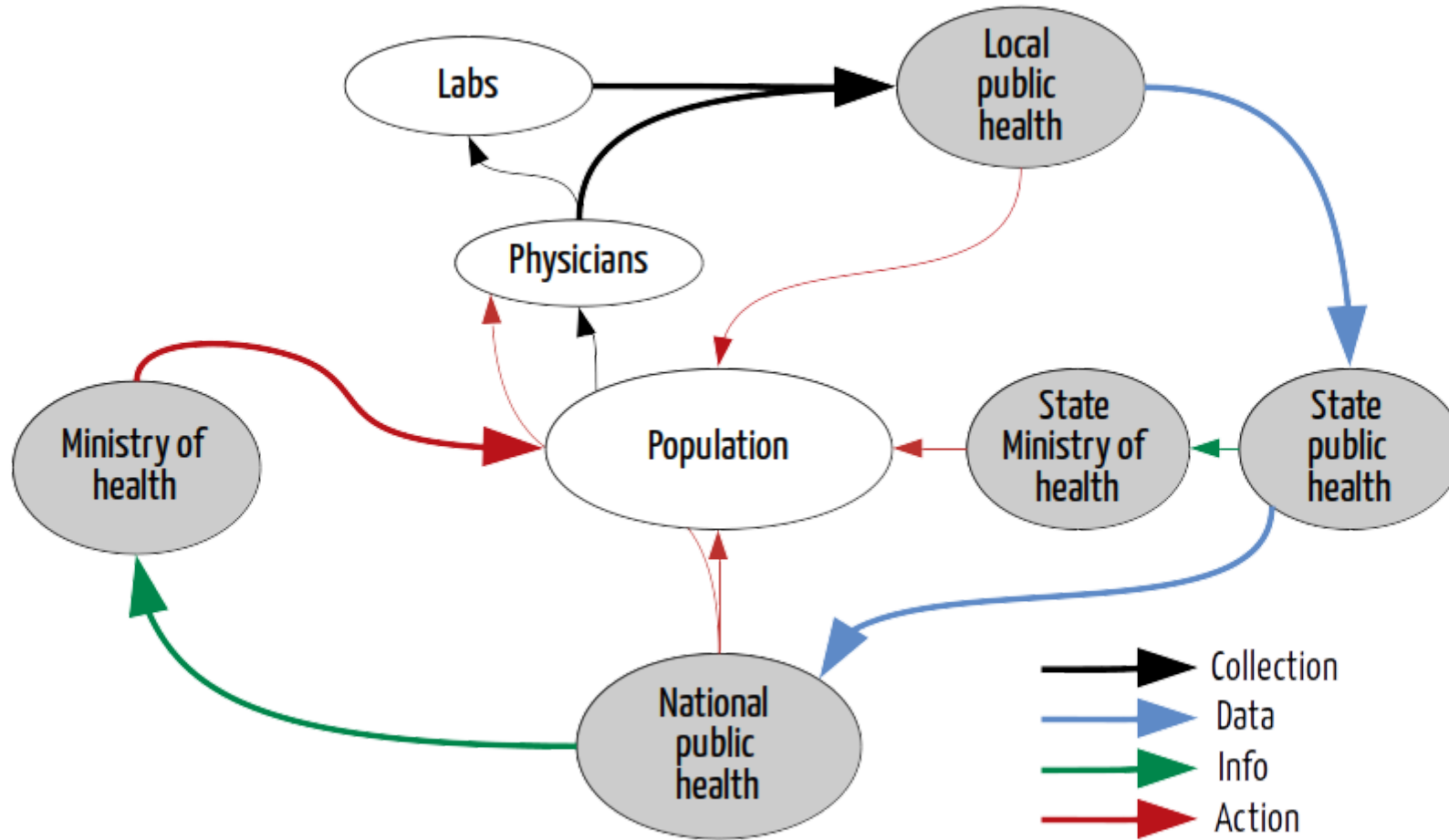Solutions tried:

- invest in networks
- event based surveillance

Typical problem: close to elimination

- nearly eliminated diseases increase false alarms
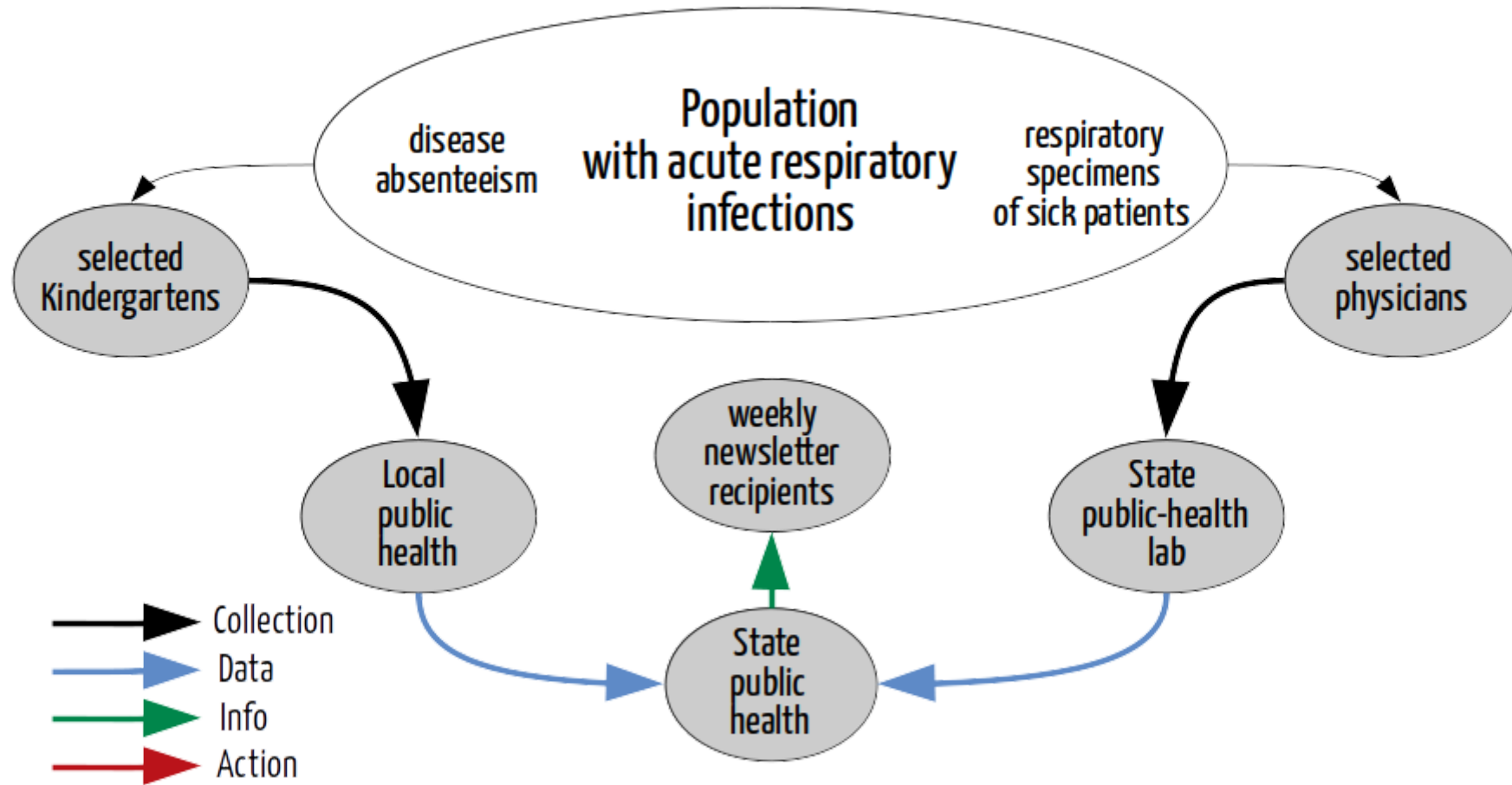- example measles: 80% false alarms

Solutions tried:

- adjust case definition

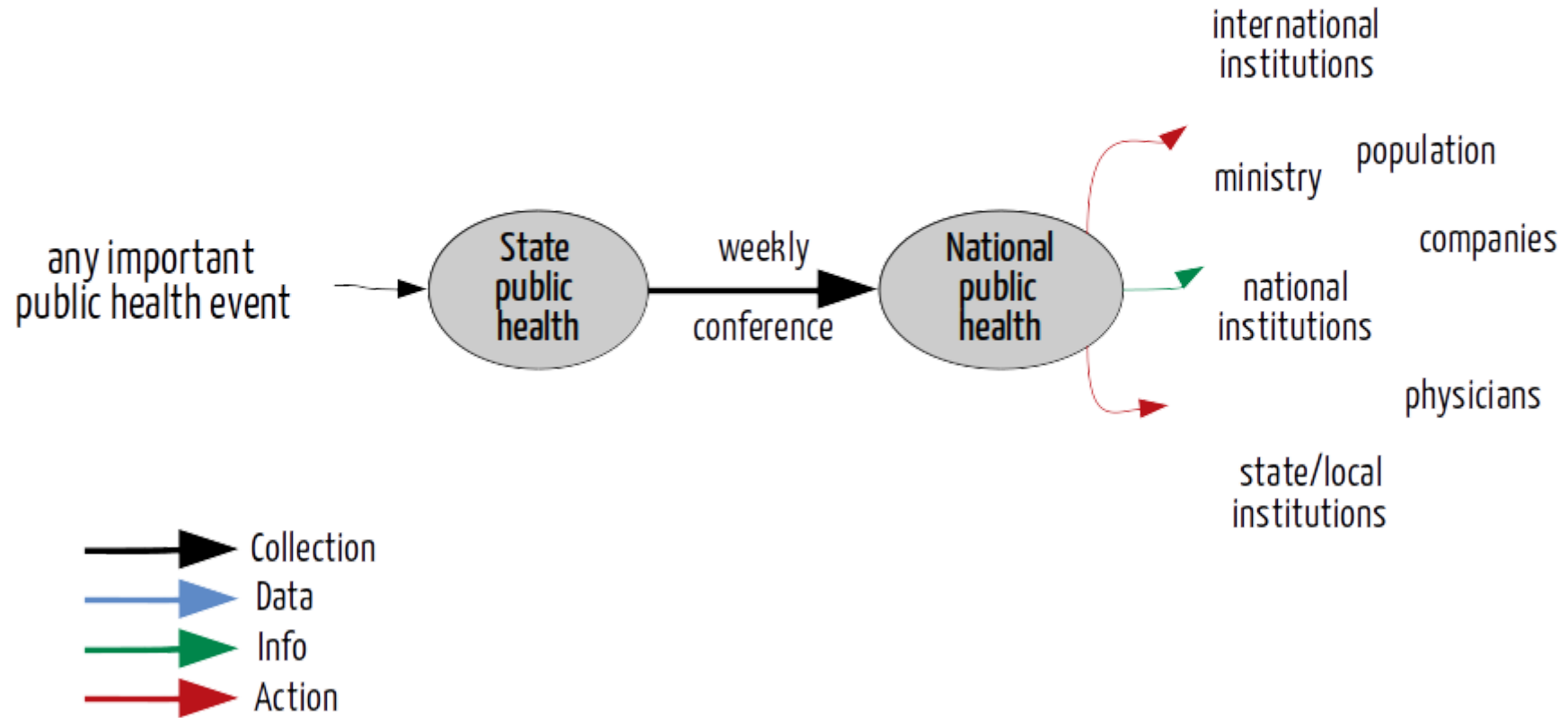# Example 1: <u>German surveillance system</u>

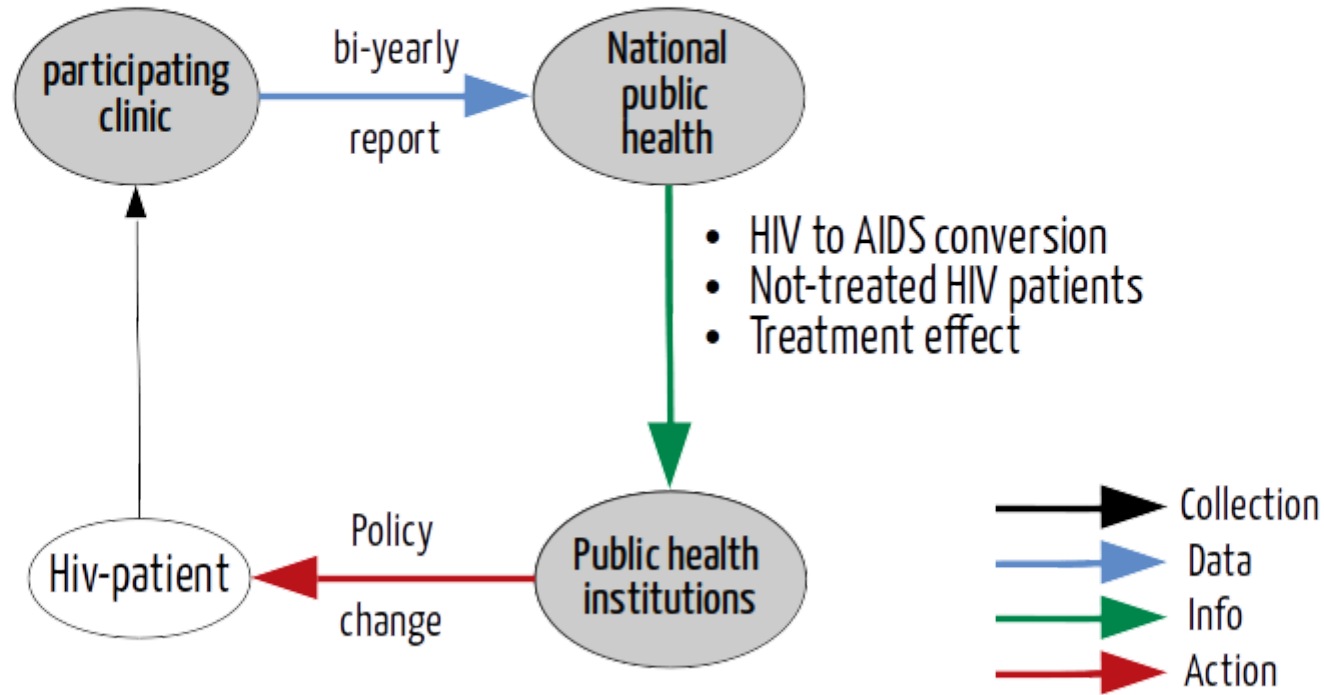# Example 2: <u>kindergarten surveillance</u>
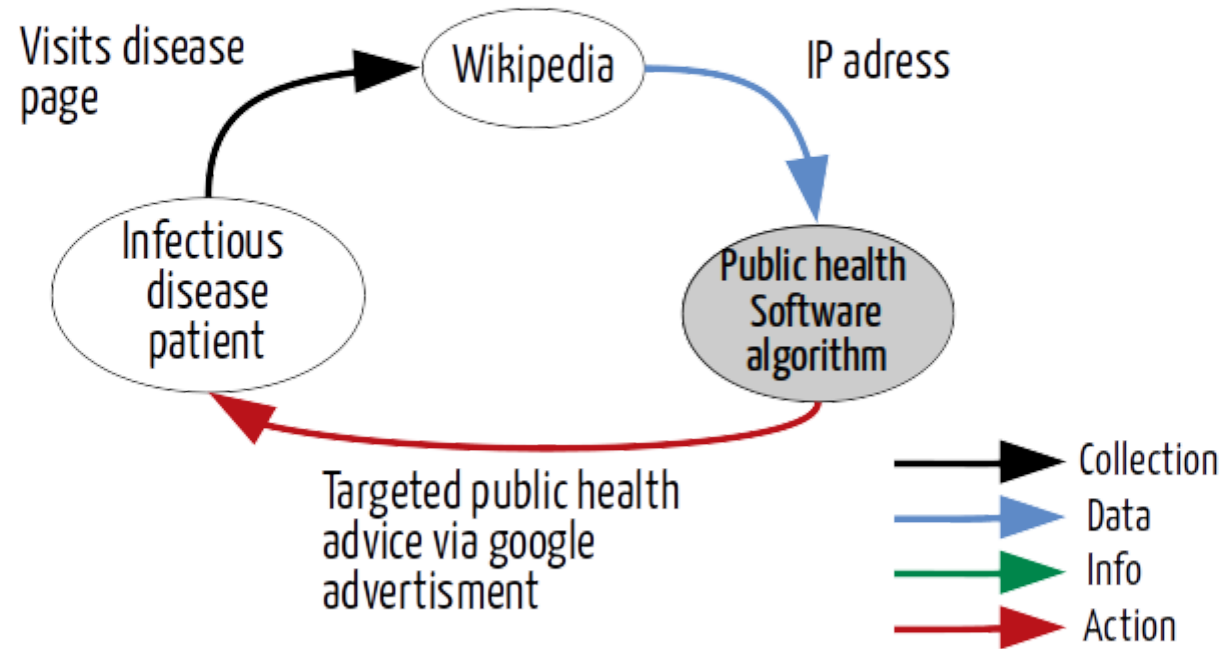
Example 3: <u>event conference</u>

Example 4: HIV-Sentinal-Surveillance

Example 5: Wikipedia surveillance

Online resources

Database

- ECDC surveillance atlas
- Promed
- WHO SDG Monitoring

Learning

- Field Epidemiology Manual

Key questions

- What global health problem?
- Is there action that helps?
- What information do we need?
- What data do we need?
- How can we collect data?

Thank You!

Questions to jakob.schumacher@web.de