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# Semmelweis & Childbed Fever

PHIL 101

Self, World, & God

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# Childbed Fever

- Identified by the Greeks
- Puerperal fever
  - *puer* - child
  - *parere* - to bring forth
- Ignorance of the etiology
  - Ignorance of the causal origins
  - Ignorance of the causal progression
- t<sub>1</sub>. Lochial discharge theory
- t<sub>2</sub>. Lactescent fluid theory
- t<sub>3</sub>. Miasma
- Modern hospitals
- Obstetrics

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**Ignác Fülöp Semmelweis**

- 1818-65
- Law, then medicine at University of Pest and University of Vienna
- Graduated 1844 and named assistant in maternity division.
- After his discovery
- His death



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**Vienna General Hospital**

- Youth and scientific discovery
- Entrenched older generation
- Three younger mentors
  - Karl von Rokitansky
  - Josef Skoda
  - Ferdinand von Herba

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## What Was Known

H

e<sub>1</sub>. Two maternity division – as much as 10 as many deaths in the First Division.

I

e<sub>2</sub>. Obstetricians and students in the First, midwives in the Second.

L

e<sub>3</sub>. No seasonal or weather related patterns.

I

e<sub>4</sub>. Correlation between trauma to cervix and uterus and childbed fever.

O

e<sub>5</sub>. Closing the ward would result in drop in mortality after reopening.

I

e<sub>6</sub>. Babies of infected mother often developed childbed fever.

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## Differences in the Wards

H

- Hempel and mini-experiments
- “like a drowning man clutching at a straw”

I

t<sub>4</sub>. Birth position

L

e<sub>7</sub>. Change in birthing position made no difference.

I

t<sub>5</sub>. Rough handling

e<sub>8</sub>. Change in number of examinations a short term difference, but not long term.

O

t<sub>6</sub>. Deathbed priest

I

e<sub>9</sub>. Change in entrance made no difference

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## “Fortuitous” New Data

- Semmelweis’s vacation
  - Kolletscha’s accident and death
  - Reading the pathology report
  - Quote from Semmelweis
  - New data
- $e_{10}$  • Death and pathology report
- New theory
- $t_0$  • Cadaver particles hypothesis

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## The Big “Experiment”

- Clinician/researcher
  - “Ideal” experiment
  - Animal experiment
  - Semmelweis’s clinical order
- $e_{11}$  • Disinfection in chlorinated lime
- $e_{12}$  • Death rate drops to less than  
Second Division

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## Semmelweis's Evidence

$e_1$   
.  
.  
 $e_{12}$   
===  
 $t_0$

- Rivals
- Rank order
- Clearly the best explanation

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## More New Data

$e_{13}$ • Breast cancer incident.

$e_{14}$ • Infected knee incident.

- Expanded theory

$t_7$ • Cadaver particles and "putrid matter derived from living organisms."

- Neglect of these cases in clinical reports
- Missed opportunity

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## **Tragedy of Semmelweis**

- Not renewed for his assistantship
- Failure to write
- Ignorance of good experimental technique
- Ignorance of microscopy
- End of his career
- Death

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## **Scientific Revolution**

- Paradigms
  - Learning and training
  - "Normal science"
  - Anomalies
  - Revolution
- Germ theory of disease
- Pasteur
- Lister

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