Exposure assessment

"***Exposure Assessment*** The qualitative and/or quantitative evaluation of the degree of intake likely to occur"

- Identify the exposure pathways via which resistance determinants on human pathogens reach humans and cause adverse health effects;
- Look at the frequency and magnitude of these exposures; and
- Design of monitoring programs
- Consider how changing the use of antimicrobials and other possible risk management actions (e.g. irradiation) would affect the exposure

General exposure pathways: origins

Food

Water

Humans

Animals

Exposure pathways: particular origins

Food	**Chicken** **Turkey** **Beef** **Pork** **Produce**
Water	**Sewage** **Litter**
Humans	**Community** **Hospital** **Food worker**
Animals	**Livestock** **Pets** **Wildlife**

Salmonella

Food	**Chicken** **Turkey** **Beef** **Pork** **Produce**
Water	**Sewage** **Litter**
Humans	**Community** **Hospital** **Food worker**
Animals	**Livestock** **Pets** **Wildlife**

Staphylococcus aureus

Food	**Chicken** **Turkey** **Beef** **Pork** **Produce**
Water	**Sewage** **Litter**
Humans	**Community** **Hospital** **Food worker**
Animals	**Livestock** **Pets** **Wildlife**

Salmonella

		Community	Hospital
Food	**Chicken**		
	Turkey		
	Beef		
	Pork		
	Produce		
Water	**Sewage**		
	Litter		
Humans	**Community**		
	Hospital		
	Food worker		
Animals	**Livestock**		
	Pets		
	Wildlife		

Salmonella

Community Hospital

Food	**Chicken** **Turkey** **Beef** **Pork** **Produce**
Water	**Sewage** **Litter**
Humans	**Community** **Hospital** **Food worker**
Animals	**Livestock** **Pets** **Wildlife**

Goal is to rank exposure pathways based on frequency and magnitude of exposures

Salmonella

Community Hospital

Food	**Chicken** **Turkey** **Beef** **Pork** **Produce**
Water	**Sewage** **Litter**
Humans	**Community** **Hospital** **Food worker**
Animals	**Livestock** **Pets** **Wildlife**

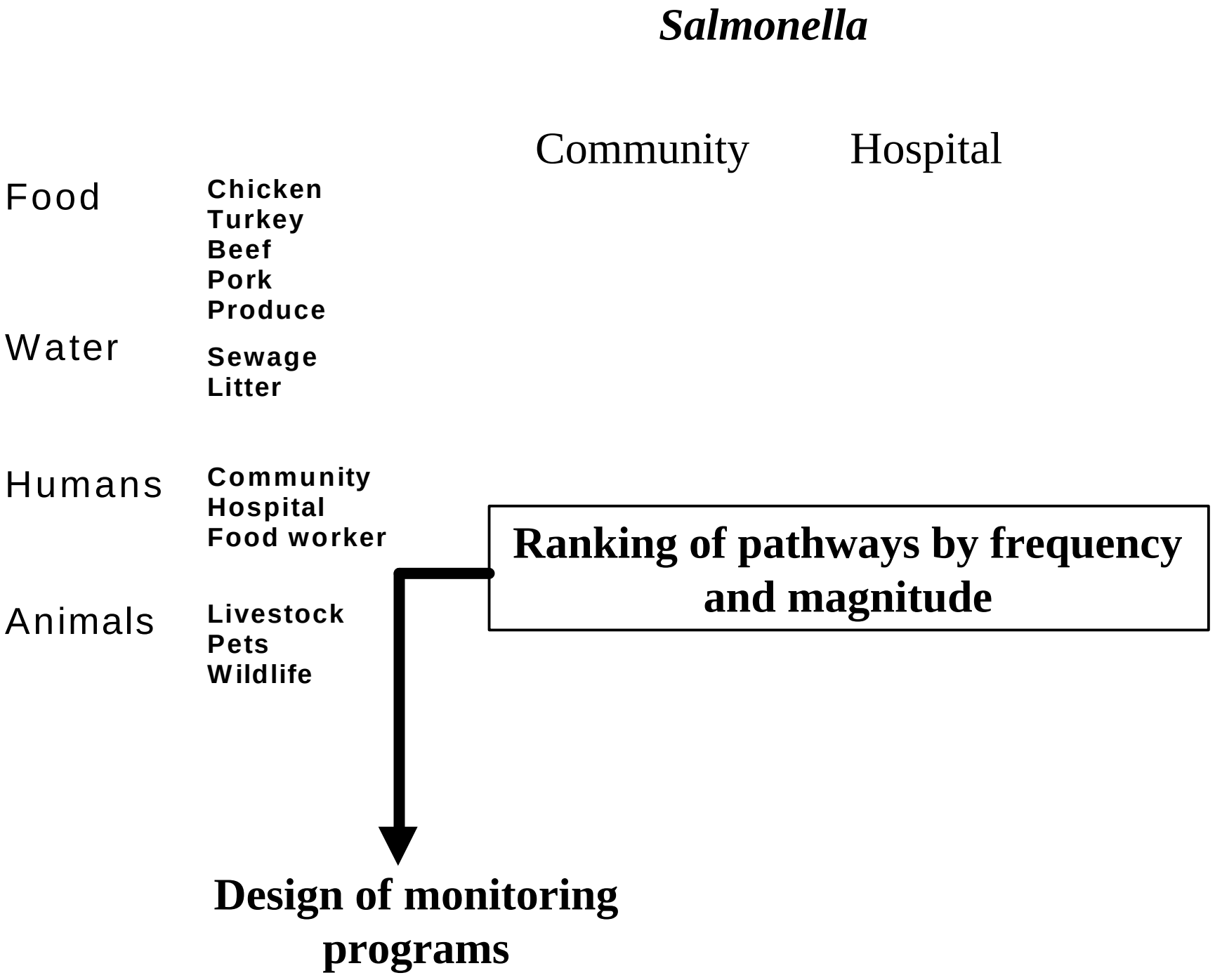
Goal is to rank exposure pathways based on frequency and magnitude of exposures:

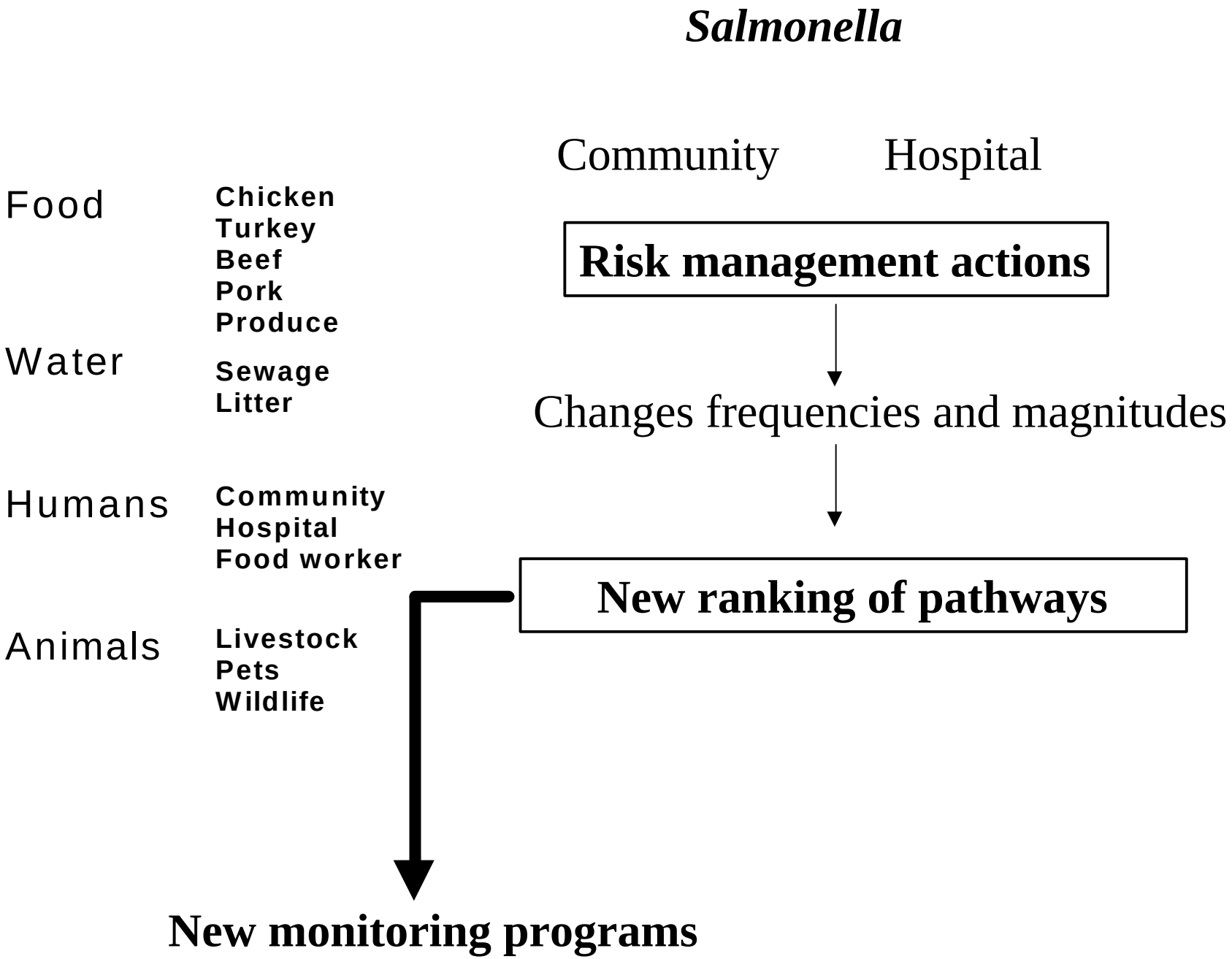
- prevalence of bacteria

- prevalence of resist. determinants

- bacterial load

- degree of interaction (consumption/contacts)


Salmonella
Community
Hospital
Food
Chicken
Turkey
Beef
Pork
Produce
Water
Sewage
Litter
Humans
Community
Hospital
Food worker
Animals
Livestock
Pets
Wildlife
Ranking of pathways by frequency and magnitude
Design of monitoring programs


Salmonella
Community
Hospital
Food
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Produce
Water
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Humans
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Hospital
Food worker
Animals
Livestock
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Wildlife
Risk management actions
Changes frequencies and magnitudes
New ranking of pathways
New monitoring programs

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