Combating antimicrobial resistance in Iceland

Public Health

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Topics

• Antimicrobial use in Iceland (humans)
• Epidemiology of zoonotic diseases
  – Campylobacteriosis
  – Salmonellosis
• Antimicrobial resistance
• Official strategies
  – Report of a working group
  – Recommended actions
Antimicrobial use -humans-

Total sale
-Nordic countries-

DDD/1000 inhab/day

years


Denmark  Norway  Sweden  Finland  Iceland

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Food and waterborne/zoonotic diseases in Iceland

- Campylobacteriosis
- Salmonellosis
  - Shigellosis
  - Giardiasis
  - EHEC (enterohemorrhagic E. coli)
- Legionnaire’s disease
- Cryptosporidiosis
  - Toxoplasmosis
  - Listeriosis
  - Yersiniosis
  - Anthrax
  - Botulism
  - Trichinosis
Campylobacteriosis
- humans -

- ECDC/EFSA summary report 2017
- Antibiotic use and -resistance in Iceland
  Annual reports
Campylobacteriosis

Campylobacter infections by origin - Iceland -

- Domestic
- Imported
- Unknown

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<th>Domestic</th>
<th>Imported</th>
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- ECDC/EFSA summary report 2017
- Antibiotic use and resistance in Iceland Annual reports
Campylobacteriosis

Campylobacter antimicrobial resistance -2015-

- ECDC/EFSA summary report 2017
- Antibiotic use and –resistance in Iceland Annual reports
Salmonellosis - humans -

- ECDC/EFSA summary report 2017
- Antibiotic use and resistance in Iceland Annual reports
Salmonellosis

Salmonella infections by origin - Iceland -

- Domestic
- Imported
- Unknown

• ECDC/EFSA summary report 2017
• Antibiotic use and resistance in Iceland Annual reports
Salmonellosis
-humans-

Salmonella antimicrobial resistance
- 2015 -

- ECDC/EFSA summary report 2017
- Antibiotic use and resistance in Iceland Annual reports
Invasive E. coli -humans-

Invasive E. coli antimicrobial resistance
-2015-

• ECDC/EFSA summary report 2017
• Antibiotic use and –resistance in Iceland Annual reports
Invasive staphylococcus aureus -humans -

Methicillin resistance - 2015 -

- ECDC/EFSA summary report 2017
- Antibiotic use and resistance in Iceland Annual reports

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Conclusions

• Human antimicrobial consumption high
• Incidence of zoonotic diseases low
• Incidence of salmonellosis and campylobacteriosis low
• Antimicrobial resistance lower/similar than in neighbouring countries/EU
  – Especially strains of domestic origin
• Official strategy = „One Health“
  – To reduce/minimize the spread of AMR bacteria
  – (reduce/minimize the risk of zoonotic diseases)
Official strategy
-to control AMR-

- Working group created in 2016 by the Ministry of Health
  - Thorolfur Gudnason Chief Epidemiologist
  - Sigurborg Dadadottir Chief Veterinary Officer
  - Vala Fridriksdottir Head Division of Bacteriology, Parasitology and Pathology, Keldur
    - Expert consultations
    - Report delivered on April 12th 2017
Greinargerð starfshóps um aðgerðir til að draga úr útbreiðslu sýklalyfjaónæmra baktería á Íslendi

Starfshópur velferðarráðuneytis

Sigurborg Daðadóttir, yfîðyrælaeknir
Vala Friðriksdóttir, delidarstjóri Keldum
Pórólur Guðnason, sóttvarnalæknir

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Final report

• Spread of AMR complex (many risk factors) and not fully understood

• Risk factors
  – Antimicrobial consumption (humans/animal)
  – Food chain
  – Animal-human interaction
  – Tourists/travellers
  – Environment
• Recommendations on AMR (One Health approach)
  1. National strategy/goals for the next 5-10 years
     • Prevention-surveillance-response
  2. Annual reporting of AMR and Ab consumption
     • Expanded
  3. Rational (decrease) antimicrobial use in humans
     • Strama approach
     • Antibiotic stewardship in hospitals
Final report

5 (of 10) recommendations related to humans cont.

• Recommendations (One Health approach)
  9. Screening for AMR in hospitals and health care institutions
     • Existing protocol at Landspitalinn University Hospital
  10. Improving sanitary facilities for tourists/travellers within Iceland
The One Health Triad

Healthy People

Healthy Environments

Healthy Animals

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