

## **MATRIX** Housekeeping

- 4th to last monthly meeting!
  - Three remain: let me know if you want to lead one
- MATRIX Solutions webinar: 15th September
  - Opportunity to present dashboards/websites
  - Two slots available
- Dashboard information centre (DIC) <a href="https://sva-se.github.io/MATRIX-dashboards/">https://sva-se.github.io/MATRIX-dashboards/</a>
  - Reflect over what should be added/changed
  - Let me know how you can contribute to the content ©
  - The DIC will be "glossarified" by OHEJP Glossary
- Deliverables
  - Everyone contributing with a dashboard: please write ~1 page describing its purpose, developments, pros and cons, etc





# Communicating surveillance at SVA: now and in the future

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MATRIX June meeting, 2022-06-28





### Structure



**Daily Surveillance Communication** 



**Annual Surveillance Report** 



**Looking Forward: Disease Dashboards** 





## **Daily Surveillance Communication**

- SVA is Sweden's largest veterinary laboratory
  - Microbiology, pathology, NGS
- Large amounts of daily data
  - Needs to be summarised and translated into actionable information
- SVA's mission: disease surveillance and knowledge communication
  - Maintain disease freedom
  - Keep disease control experts and animal owners informed
  - Give the public insight into our epidemiological situation





### **Daily Surveillance Workflow**

### 1. Azure cloud environment

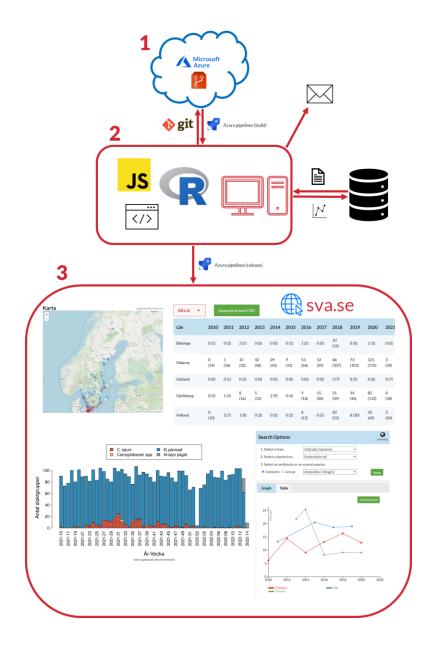
Version control of code and content templates, management of automatic pipelines

### 2. On-premise computing

Development of R packages and templates, execution of pipelines for generating content (build pipelines) and publishing (release pipelines), connection to databases, email notifications

### 3. Rich web content

Maps, tables, graphs, "mini-dashboards" <a href="https://www.sva.se/smittlage">https://www.sva.se/smittlage</a>







## **The Annual Surveillance Report**









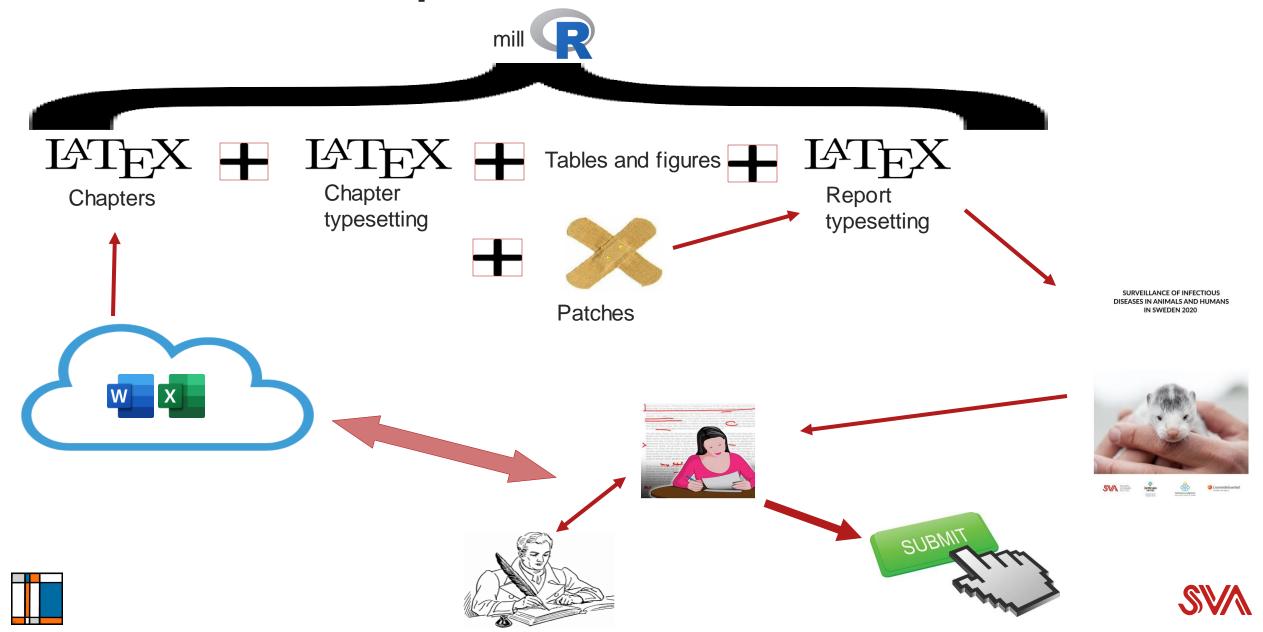


- Annual surveillance summary for >30 diseases and AMR
  - Clinical as well as active surveillance
  - One chapter per disease, chapters authored by experts
- Focus on animal health but includes many zoonoses
  - One Health perspective
- Collaboration between agencies





## **Surveillance Report Workflow**



### **Surveillance Report Workflow**

## Pandoc (www.pandoc.org)- A document converter

### Shigatoxin producing Escherichia coli

### Background

Shigatoxin producing Excherichia coll (STEC) or, synonymously, verotoxin producing Excherichia coll (VTEC), may cause serious intestinal infections in humans. The toxin can be durided into two main groups, shigatoxin 1 (SEX1) and shigatoxin 2 (SEX2), and the genes encoding the toxins can be further divided into several subtypes, for example, stx1a. Often the strains associated with severed disease carry the stz2 gene.

STEC was only sporradically detected in Sweden before 1995, when 114 human cases of STEC 015747 we entitled. In 1996, STEC 0157 was isolated in Sweden before the first time and human STEC 0157 infection was traced to a cattle herd. Cattle are the main carry the organism Not only foods of bovine origin but also we speak left food little carry the organism Not only foods of bovine origin but also wegetable food little drinking water have been implicated in outbreaks. The infection can also be transmitted through driver or indirect animal contact, via the environment or person-to-person

Since 2005, between 230–890 cases (2.4–8.7 cases per 100000 inhabitants) of STEC infections have been reported in Sweden annually, of which 50%-80% are domestically acquired. Most of the domestic cases are reported during the period luly to September.

### Disease

Animals

Animals do not develop clinical disease.

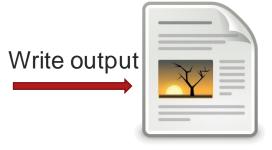
The clinical picture can vary from asymptomatic infection to non-hasmorrhagic or hasmorrhagic darbos associated with abdominal ramaps. Not patients findly recover. However, a severe complication of the disease is hasmorrhagic uremic syndrome, NUS. HUS is characterised by such resulf failure, frombeotyopenia, and microangiopathic haemolytic anasemia; a condition that may lead to death. In recent years, approximately 3% of the cases in Sweden have developed HUS. Alarge proportion of the patients are young clidren, and

During 2015 to 2021, 146 cases with STEC were reported to develop HUS (n=146/488), 32%), When analysing withis recryopes and they profiles that have been associated with HUS during 2015 to 2021 the most prevalent servope was the domestic servope 0.1574HV. HUS during 2015 to 2021 the most prevalent servope was the domestic servope 0.1574HV with 162 axes (2.648 with 49 (3.956) cases, followed by 0.26 with 21 (1.956) cases (0.1547 with 8 cases (5.669) and 0121 with 7 cases (4.948), (Table [tab.HUS-servoppes-2015-2021]). Almost 30 percent of the HUS cases did not have an isolate for typing.



Pandoc

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### Shigatoxin producing Escherichia coli

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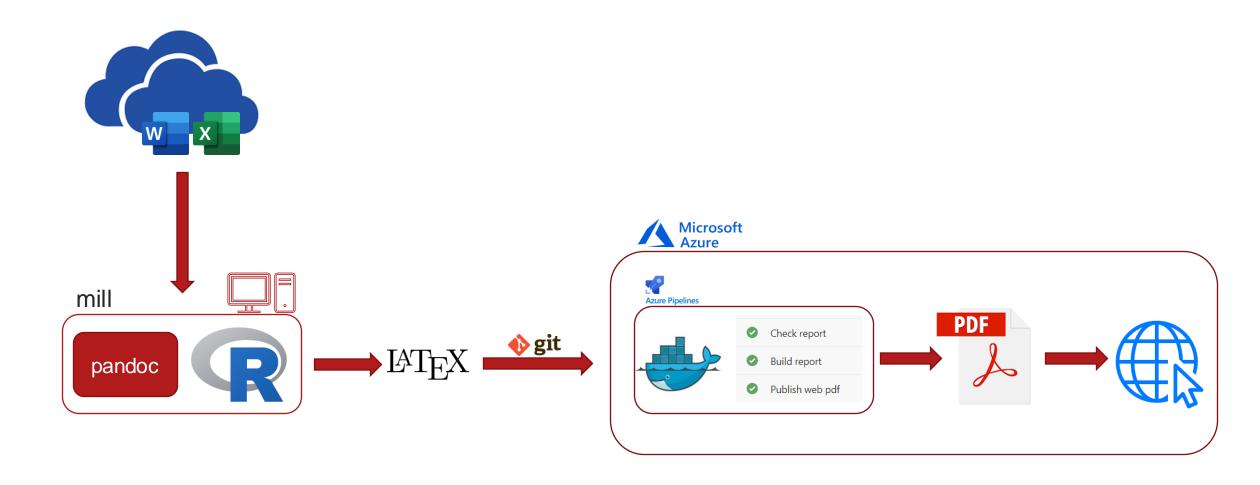
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## **Surveillance Report Workflow**







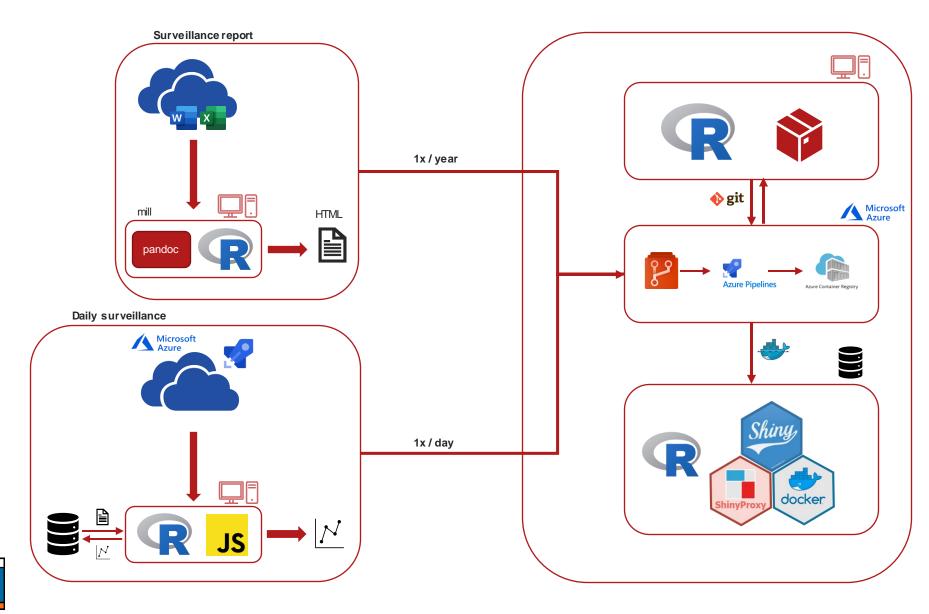
## **Looking forward: Disease Dashboards**

- "One stop shops" for all surveillance results for specific hazards
  - Annual summaries, daily lab data, syndromic surveillance, ...
- Combines and expands upon existing content
- Controlled access
  - Some parts public, others for experts only
- One templade, many hazards
  - Reusable dashboard structure → saves time and work





### **Disease Dashboards Workflow**







### First Dashboard Pilot: Salmonella

- Currently under development
  - Pilot in fall
- Will have one section per species of interest
  - Cattle
  - Pigs/wild boar
  - Poultry
- Animal focus for now
  - Potential One Health aspect later, collaboration with public health
- Closed access for now (within SVA)
  - Will be used as a tool for surveillance experts
  - Public access later







## Thank you for listening!

Any questions?



