

Gain control of virus in the sow herd

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SEGES
INNOVATION

Gain control of virus in the sow herd

Why is virus a problem?

Influenza, PRRS and PCV2

Zoonoses

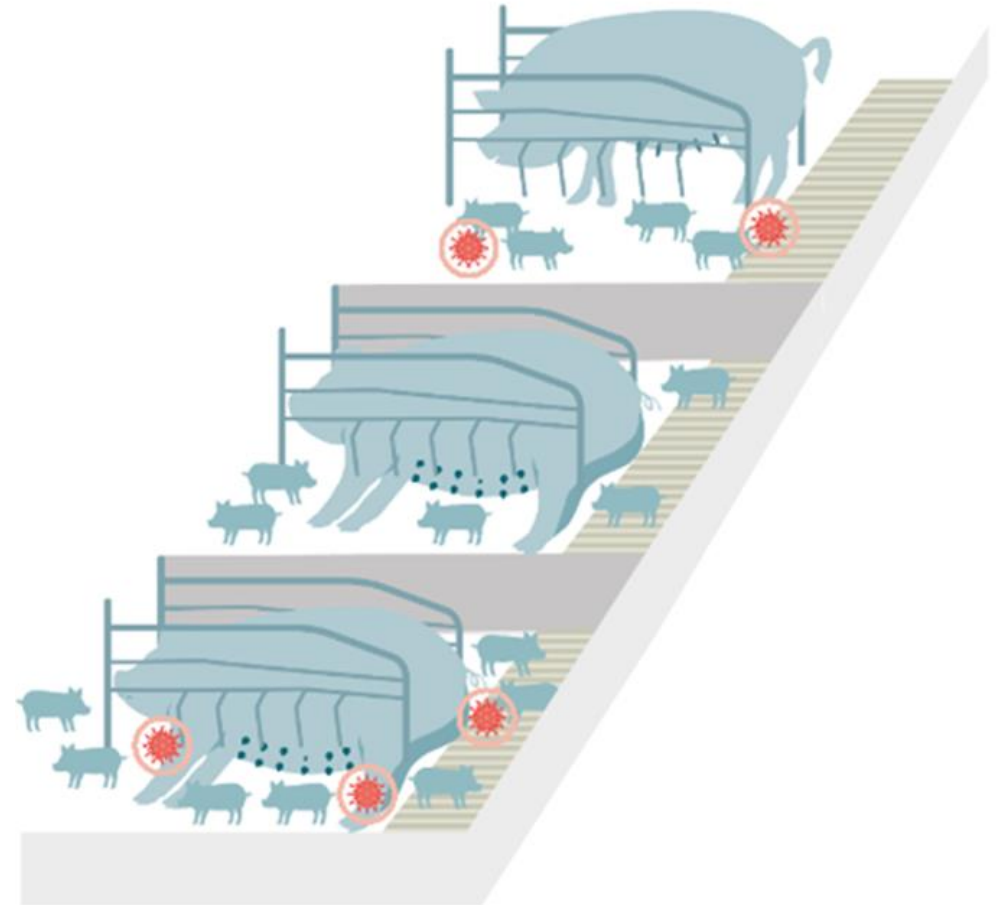
Consequences of a virus outbreak?

How can we gain control of virus?

Infection stop – in your herd

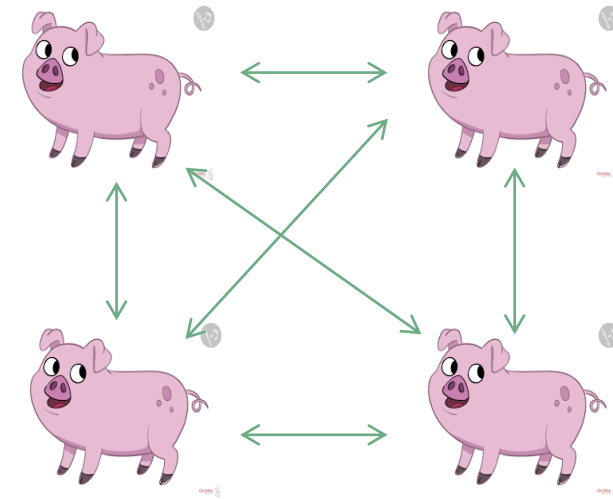
Get an influenza vaccine

Take home message



Have the virus problems increased?

- Factors that have had a negative impact
 - Larger holdings
 - Greater trade
 - Larger litter
 - Cross fostering – generally more moving of pigs
 - Better diagnostics
- Factors that have had a positive impact
 - Higher level of sectioning
 - More vaccinations
 - The SPF system
 - Eradication of specific viruses
 - Focus on external biosafety – locally and nationally



Velkommen til vores bedrift
Hjælp os med at beskytte vores og andres dyr mod smitte:

NB: DIT BESØG KRÆVER EKSTRA FORHOLDSREGLER, DA VI HAR SALMONELLA I BESÆTNINGEN

Ring på tlf. _____ for adgang til besætningen, hvis du ikke har en aftale.

Besøg os sidst på turen.

Skift til besættningens overtrækstøj og støvler.

Tag kun udstyr med ind, som er vasket og desinficeret.

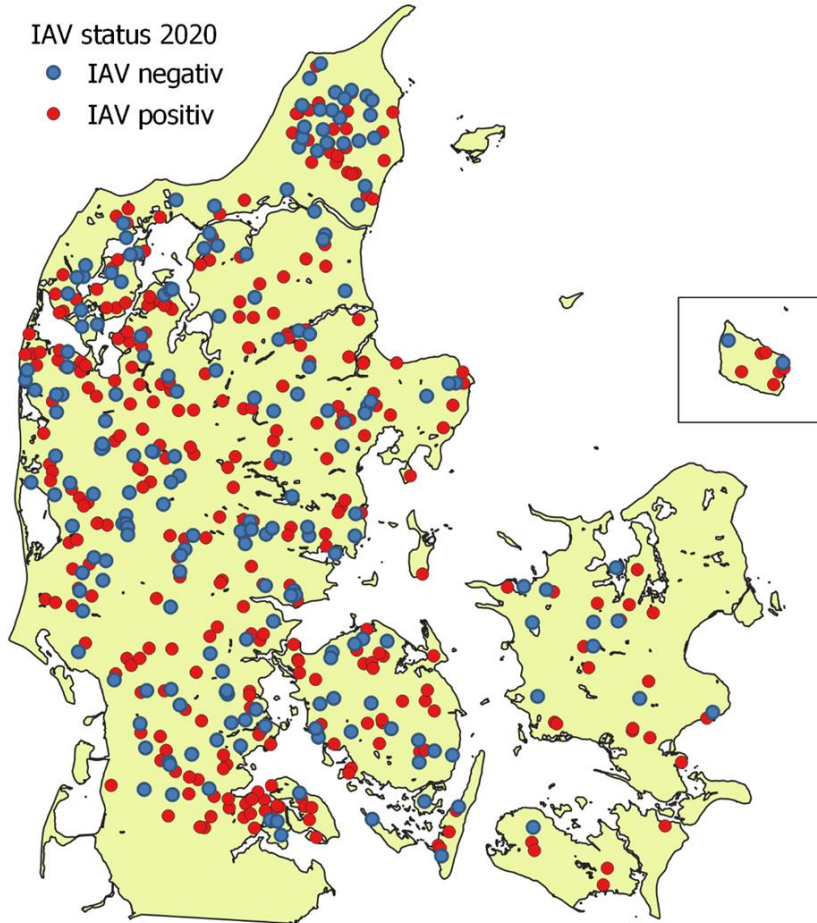
Tak for hjælpen

Mælkeafgiftsfonden Kvægaftiftsfonden **SEGES** INNOVATION

Influenza viruses are everywhere

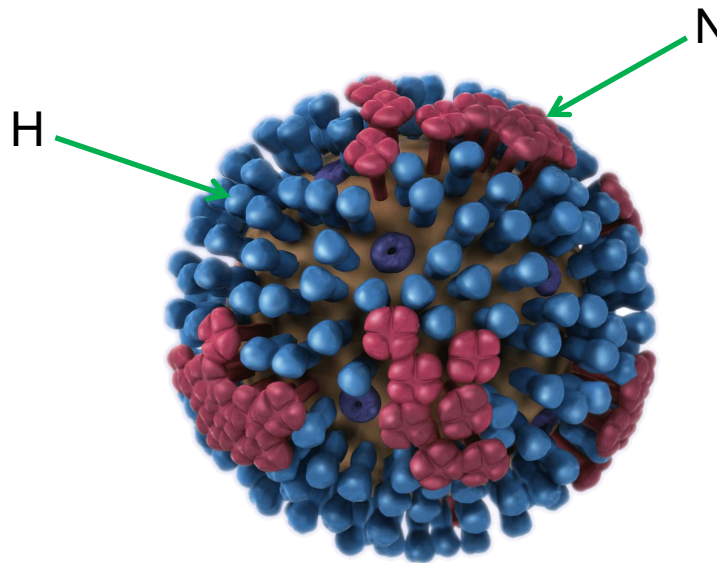
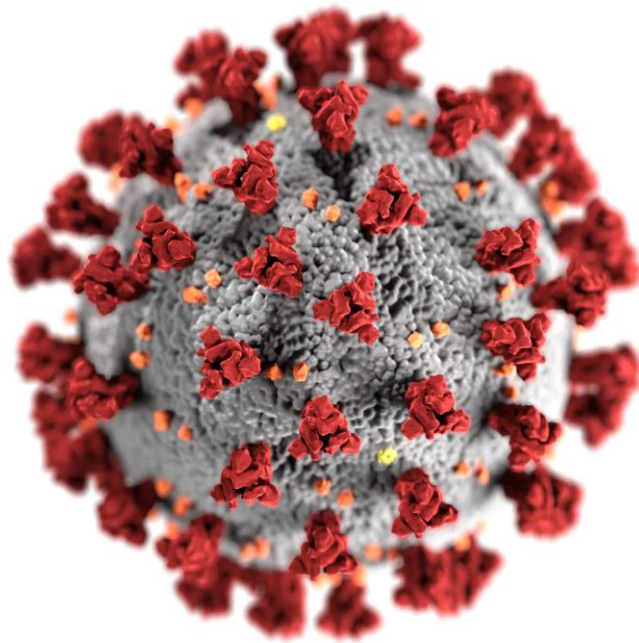
IAV status 2020

- IAV negativ
- IAV positiv



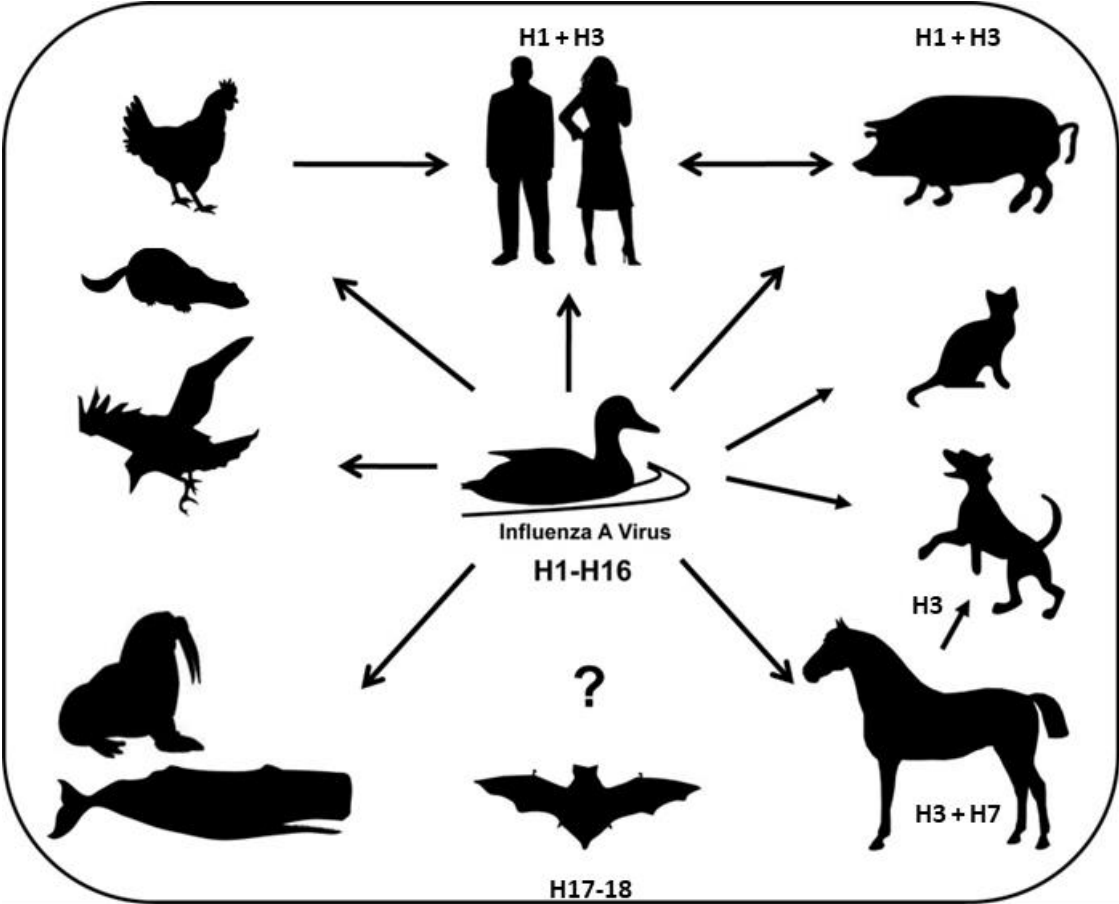
Influenza virus basic

- Virus: nanoparticles that require living cells to replicate in
- Virus cannot be treated – only prevented



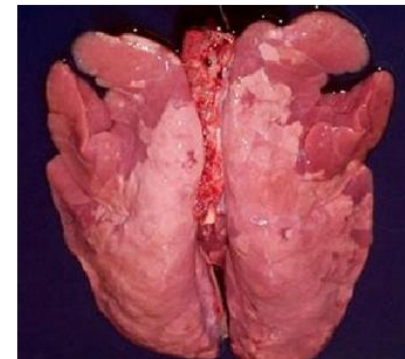
Ex H1N1, H1N2, H3N2

Influenza A virus hosts

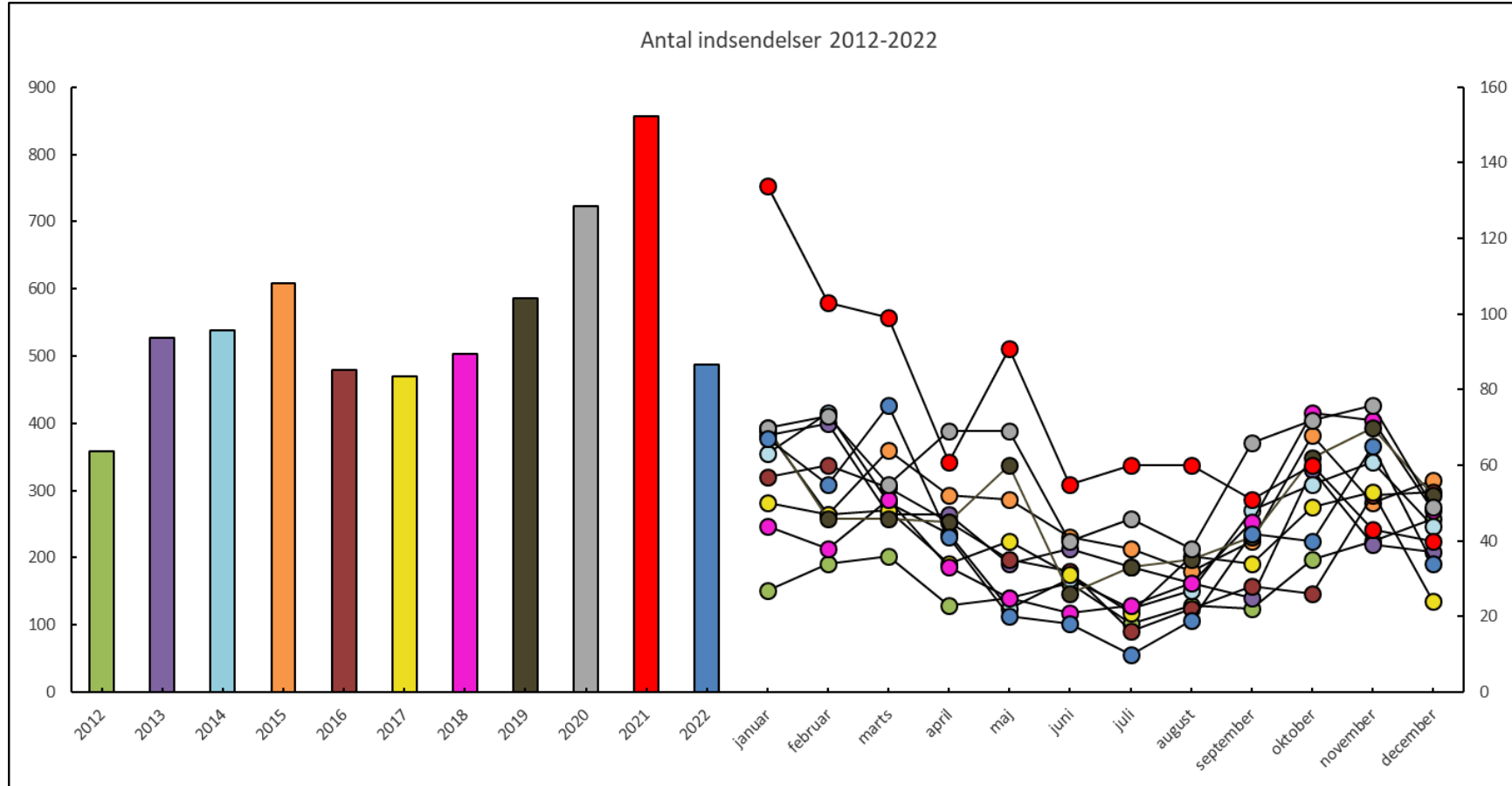


Influenza in the herd

- All age groups from day 3 ->
- Sheds flu for 1 week (up to 3 weeks)
- One pig infects 3-7 other pigs
- Classic flu symptoms
- Reproductive problems
- Dead of pregnant sows
- Part of the "lung problems" in piglets
- Infections without you noticing



Influenza is present all year round in pigs

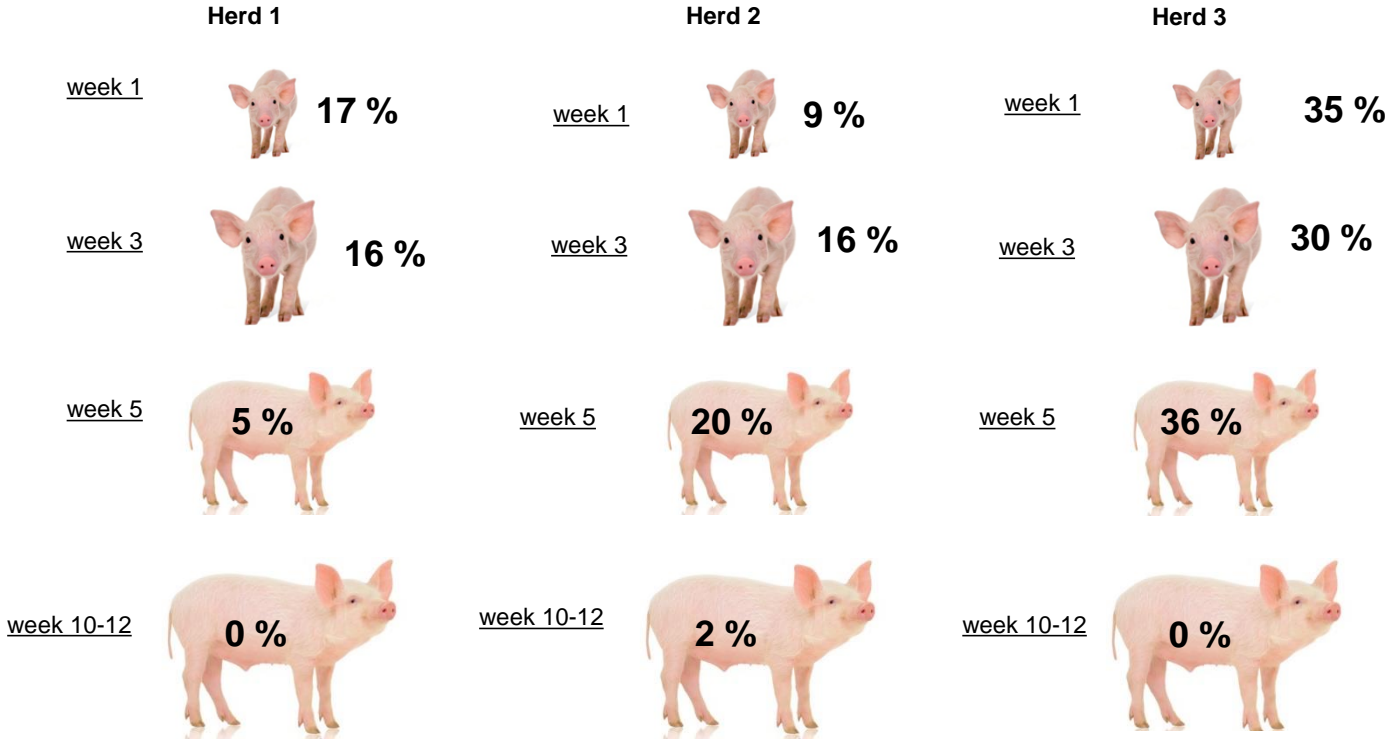


Influenza virus transmission

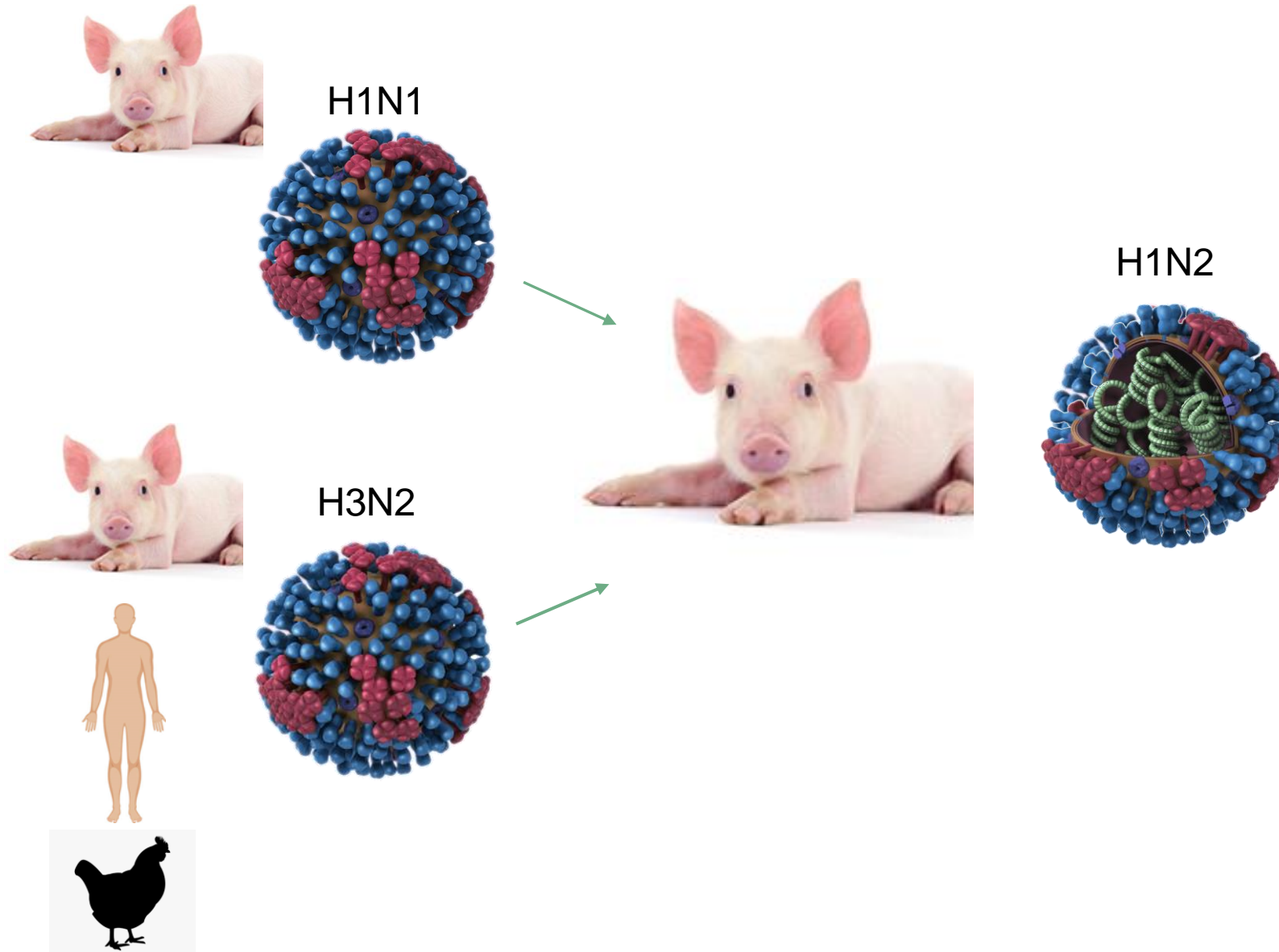
- **How does influenza enter the herd?**
 - Pigs (between sites, herds and countries)
 - People
 - Equipment
 - The air
- **How does influenza spread within the herd?**
 - Pigs! (mixture of pigs)
 - People
 - Equipment
 - The air



Transmission with-in the herd

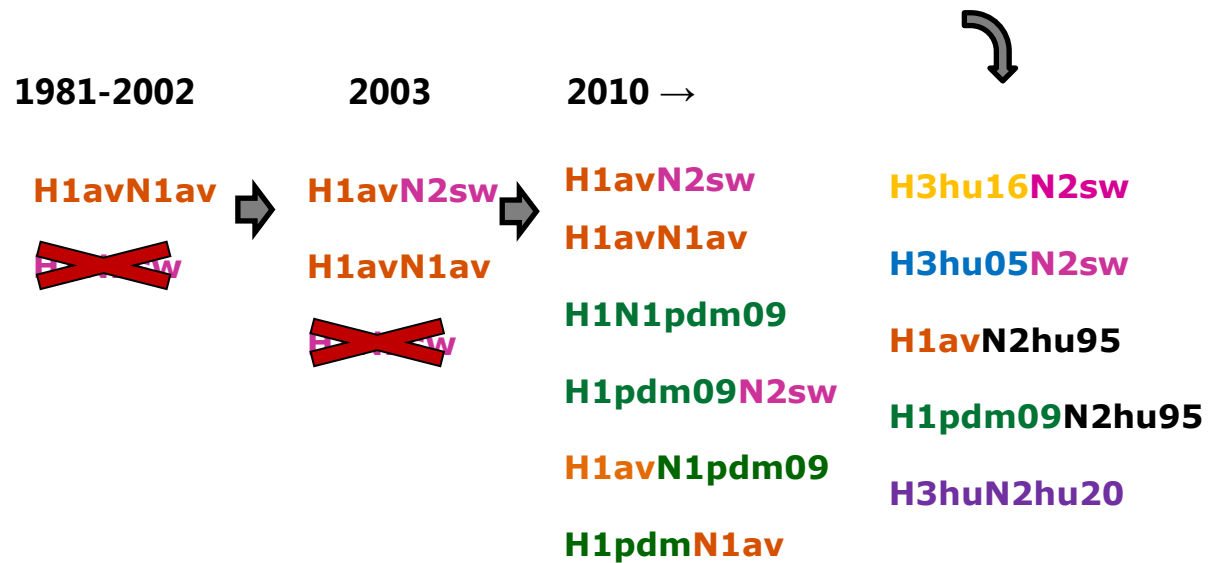


How do new influenza viruses emerge



The number of different influenza viruses in Danish pigs has exploded

Human sæson influenza: **N2hu95**, **H3hu05**, **H3hu16**, **H3huN2hu20**

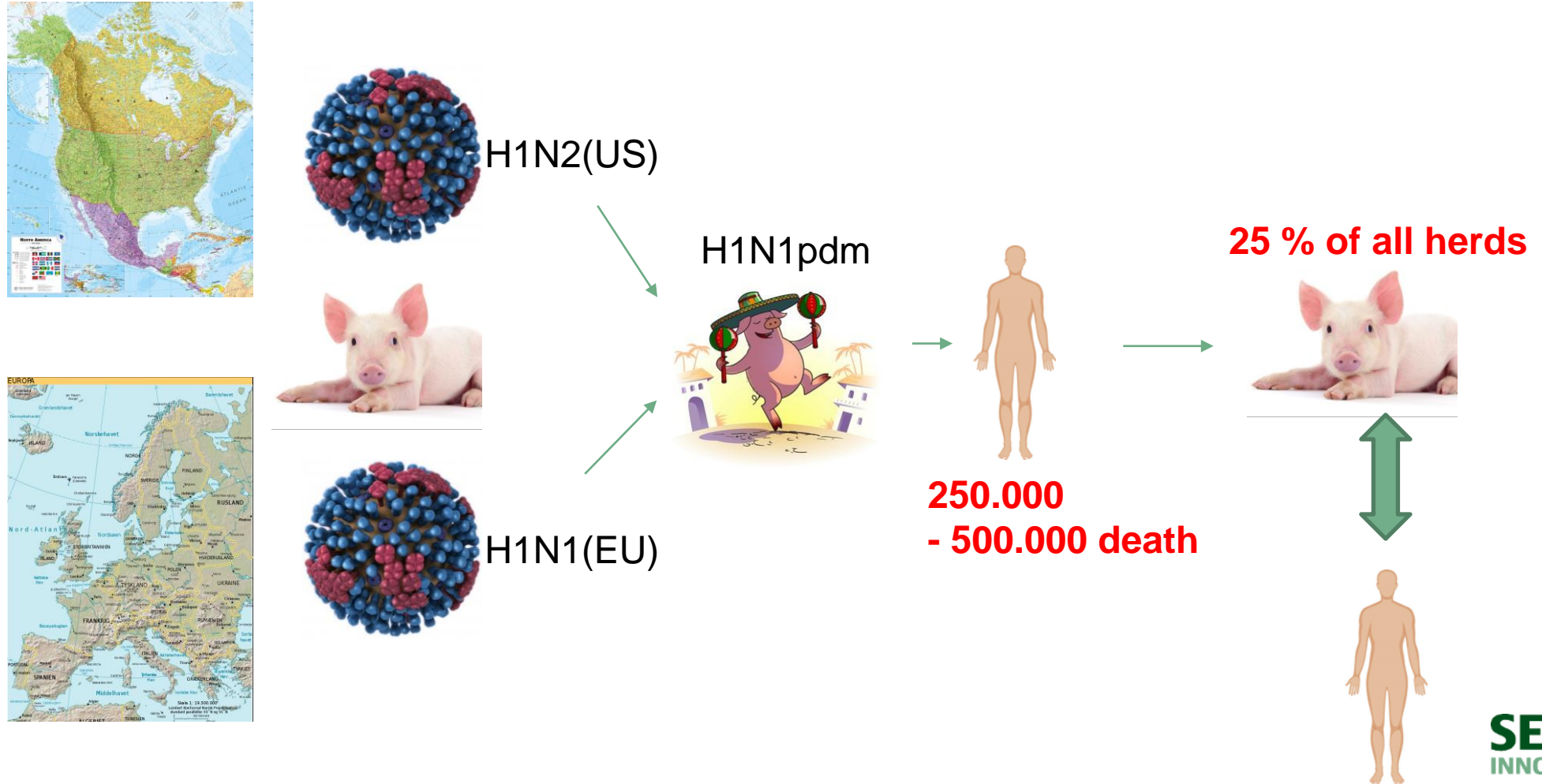


Russian gene roulette!

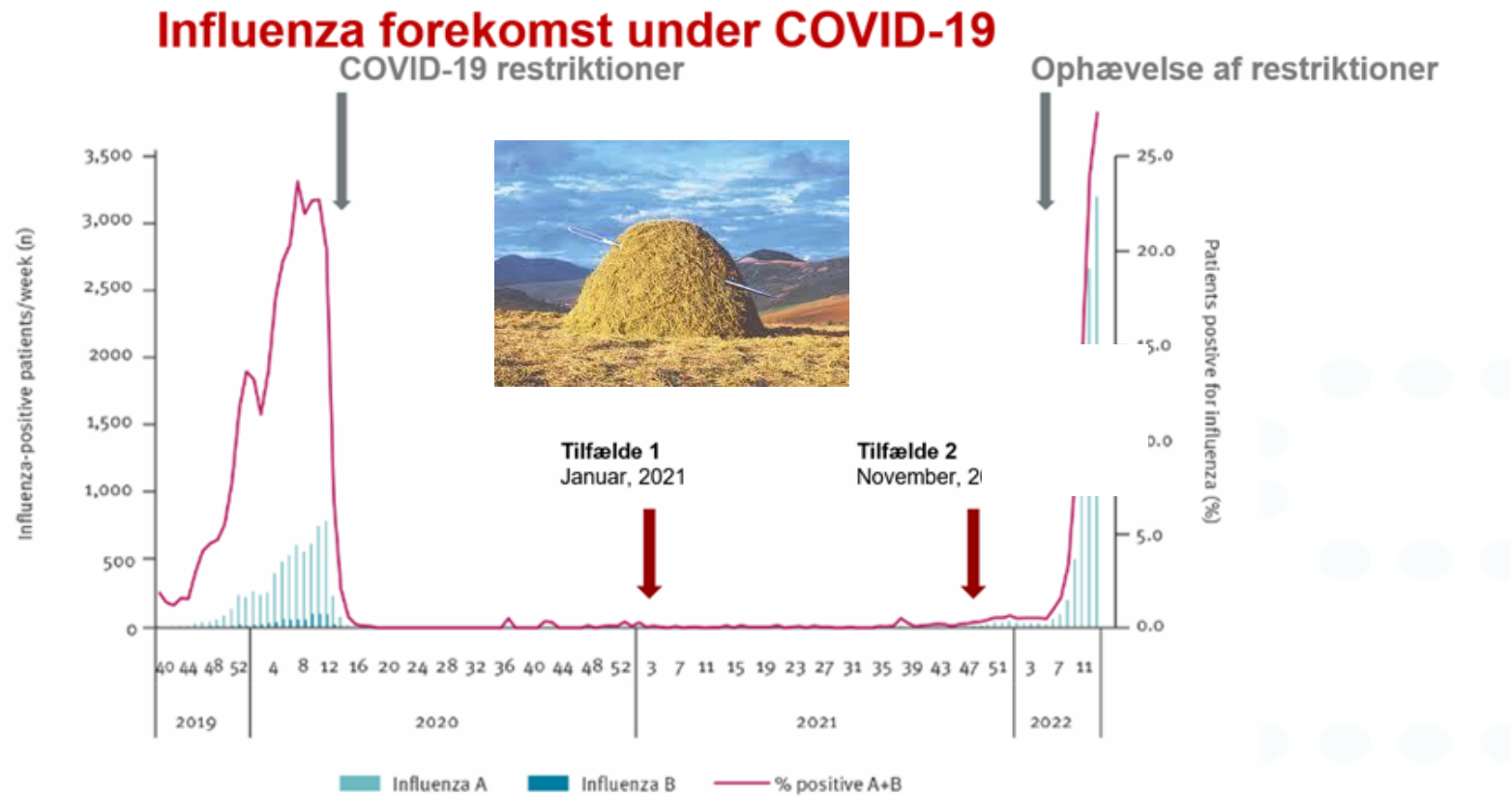


12

Influenza in pigs as a zoonosis: What happend in 2009?



Two cases of infection from pigs to humans detected in Denmark in 2021!



Reference: Hanne-Dorthe Emborg, Ramona Trebbien et al Statens Serum Institut

Could influenza from pigs seed the next pandemic?


Berlingske

NYHEDER OPINION BUSINESS ADK

VIDENSKAB

Tanken, næsten ingen tør tænke: En ny pandemi, før coronaen er kvalt

Det er ikke usandsynligt, at en ny pandemi begynder at hænge kloden, før coronavirusen er kvalt. Vores svin udgør en særlig smittefare og er søn tikkende bombes, understreger dansk ekspert. For grise er i stigende grad nærmest perfekte sfabrikker til fremstilling af nye influenzavirusser, der kan hoppe på os - og som vores immunforsvar ikke kan genkende.



LIDLAND

Ny virus med potentiale til at blive en pandemi er fundet

Virussen er fundet i Kina. Foto: Esteban Biba / Ritzaui Scanpix

Mens coronakrisen stadig står på, har forskere fundet en ny type virus blandt slagterimedarbejdere i Kina.

En ny type virus med potentiale til at blive en pandemi er fundet i Kina. Ifølge kinesiske forskere fra Nottingham University i Storbritannien er virusset fundet i grise, men kan og har allerede spredt sig til mennesker. Det skriver de britiske medie [BBC](#).



Information

KUNSTEN AT HOLDE SIG VARM
Fjällrävens nye 1974 Expedition-kollektion

Forskere frygter, at influenzavirus i svin kan udløse ny pandemi hos mennesker

Tyske forskere har fundet influenzastammer i den europæiske svineproduktion, der kan føre til pandemi hos mennesker. Flere af virusstammerne er fundet i danske svin. Ekspertes betegner risikoen for en ny svineinfluenzapandemi som alvorlig

Jo flere dyr, der er samlet, desto flere virusser kan spredde sig, desto flere mutationer sker der i virusserne, desto større er risikoen for, at to virusser, der er mestret i hver sin retnings, finder sammen til et rekombinant virus, som ingen kender i forvejen. Det er risikoen ved moderne, industrielt husdyrproduktion, siger professor Hans Jern Kolmos.

Sigrid Nygaard



MEST SETE

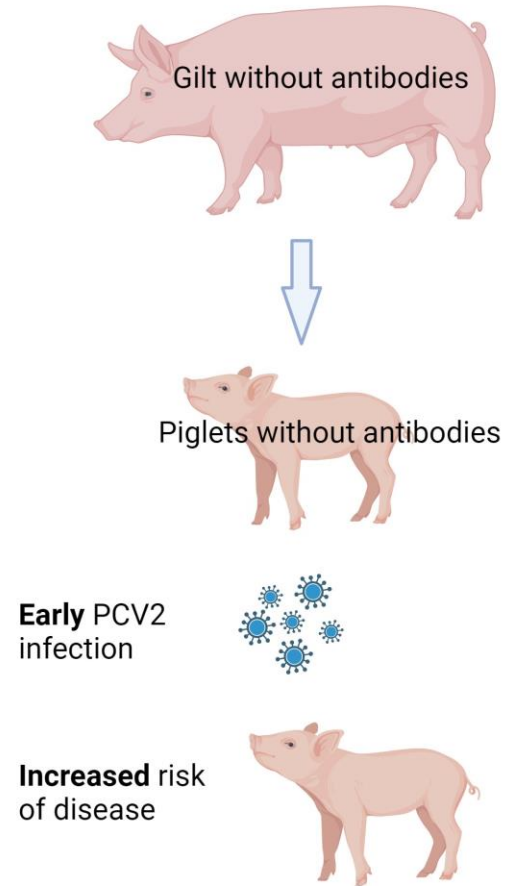
Kommentarer (7)

Now to something different – Circovirus (PCV-2)

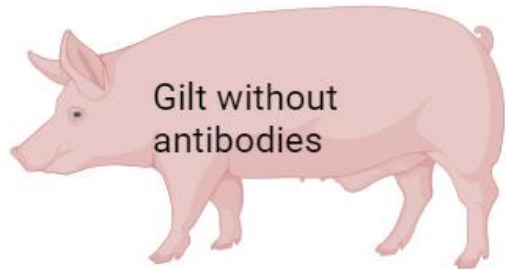
- Wasting disease (PMWS) is not often seen anymore
- Does that mean that PCV-2 is no longer a problem?



PCV-2 nowadays – impact for small pigs



PCV2 infection of sows



PCV2 infection during pregnancy



Målt på

Return to estrus
 Reduced abortions
 Live piglets per litter
 Wean piglets per litter

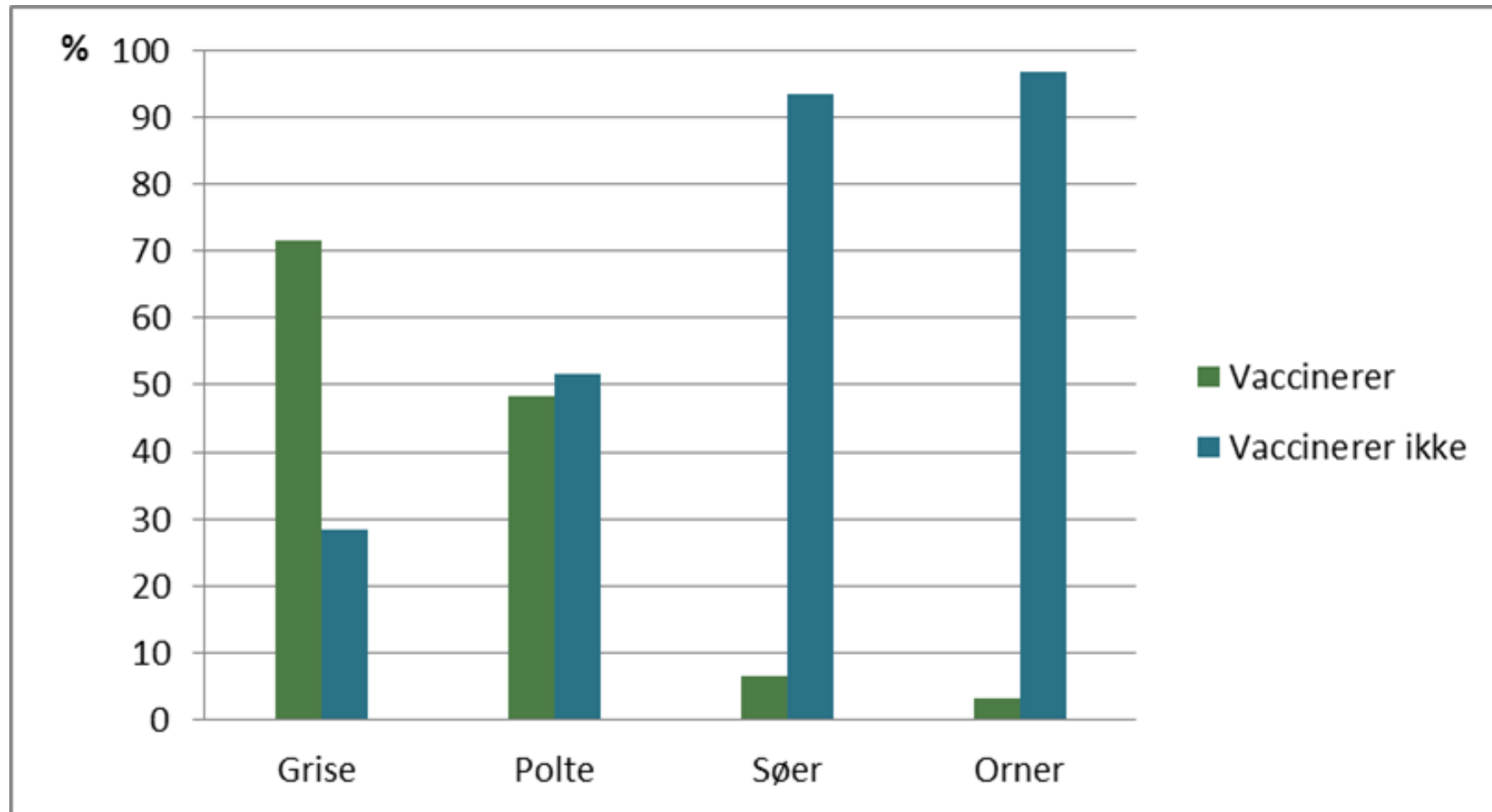
Effekt

4,47-4,56%
 0,47-1,12 pigs
 0,2-1,6 pigs
 0,9-1,3 pigs

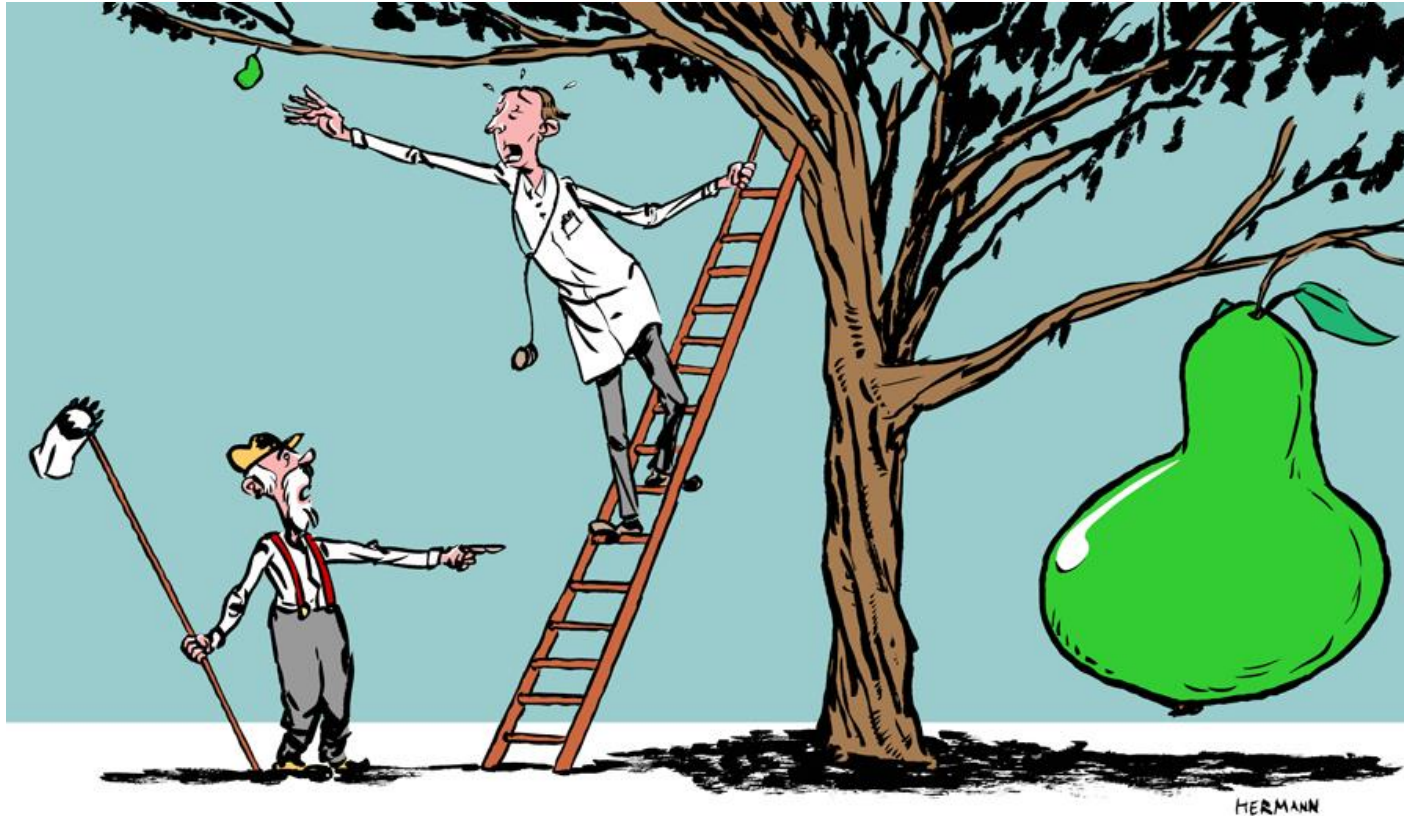
Maja Kobberø, KU

Are PCV2 vaccines used for sows?

- 59 herds in a project (2016)



PCV-2 vaccination of sows: low-hanging fruits?



Gain control of virus in the sow herd

Why is virus a problem?

Influenza and PCV2

Zoonoses

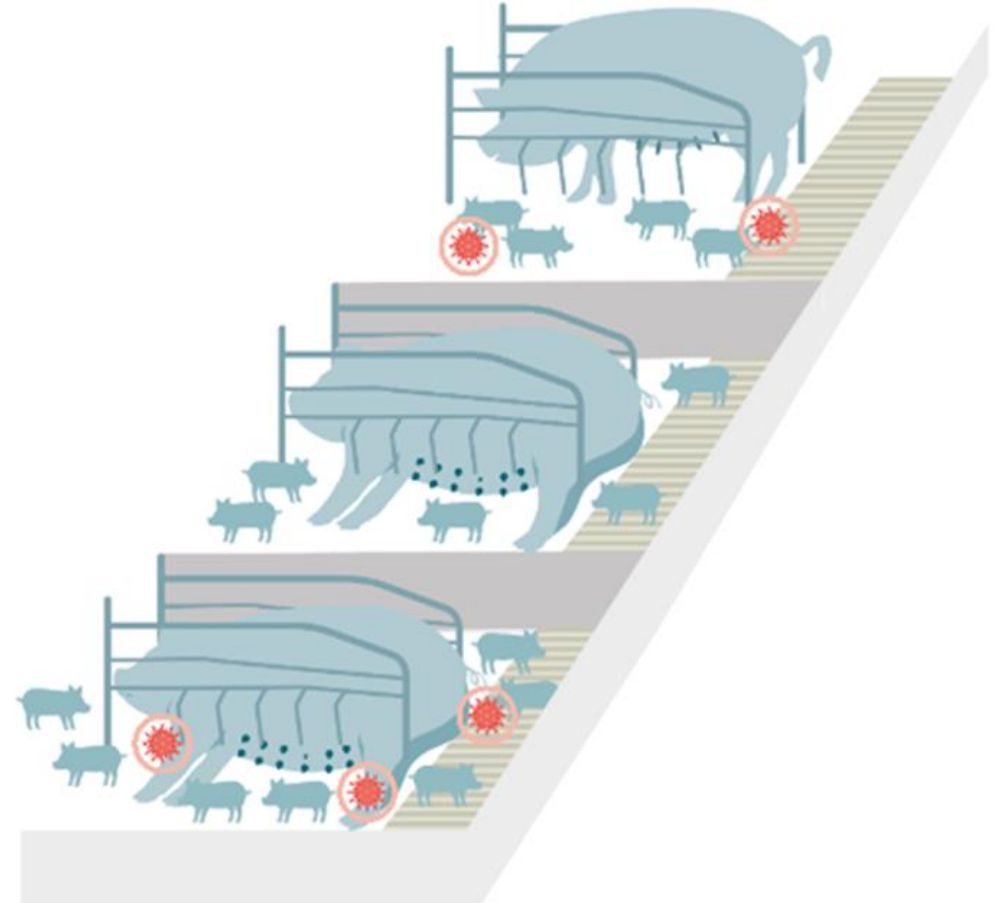
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Get an influenza vaccine

Take home message



What are the consequences of a virus outbreak?

- Virus generates disease and lowers immunity
- May enhance other disease problems
- Costs vary between herds
- and over time

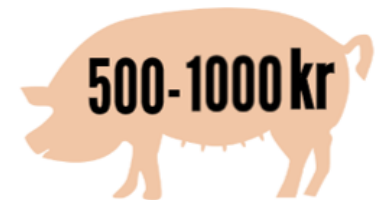
Grise, Økonomi og ledelse

Beregning af økonomi ved sanering for luftvejssygdomme i griseproduktionen

SEGES Innovation har udviklet et regnearksprogram, som kan beregne økonomi ved sanering for de 3 hyppigst forekommende luftvejssygdomme i dansk griseproduktion.

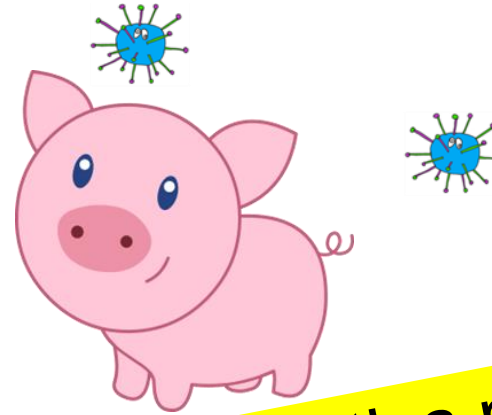
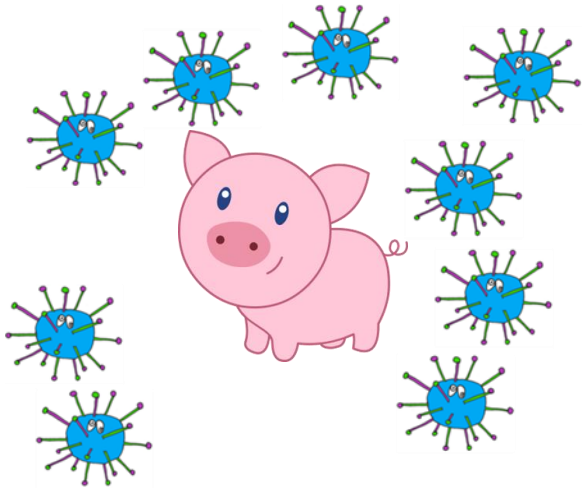


PRRS



How can we gain control of virus?

Virus control = Vaccination + Infection stop



Antibiotics not effective
against virus

Influenza, PRRS and PCV2 vaccines



Example of vaccinations against virus and bacterial disease

	Tidspunkt for vaccination	Vaccine
Polte og orner	Ved indsættelse i polte-stald (20-26 uger)	Ingelvac PRRS, 2 ml Porcilis PRRS ID, 0,2 ml Ingelvac Mycoflex, 1 ml Ingelvac Circoflex, 1 ml Respiporc FlupanH1N1, 2 ml Porcilis Glässer, 2 ml
	3 uger efter indsættelse i polte-stald	Ingelvac PRRS, 2 ml Porcilis PRRS ID, 0,2 ml Respiporc FlupanH1N1, 2 ml Porcilis Glässer, 2 ml
	Polte mindst 26 uger Polte mindst 26 uger + 3 uger	Eryseng Parvo, 2 ml Eryseng Parvo, 2 ml
Alle søer, gylte og orner	Uge 30 2020. Herefter november, marts, juli	Porcilis PRRS ID 0,2 ml
Gylte	6 uger før faring	Suiseng, 2 ml
Drægtige søer og gylte	3 uger før faring	Suiseng, 2 ml, 1.-4. læg Eryseng Parvo, 2 ml, 1.-4. læg Respiporc FlupanH1N1, 2 ml 1.-4. læg
Smågrise, fravæning	Mindst 14 dage gamle	Porcilis PCV ID 0,2 ml

Gilts

PRRS 1

PRRS 2

PCV2

Influenza pandemic

Mycoplasma pneumonia

Glässer

Erysipelas

Before farrowing

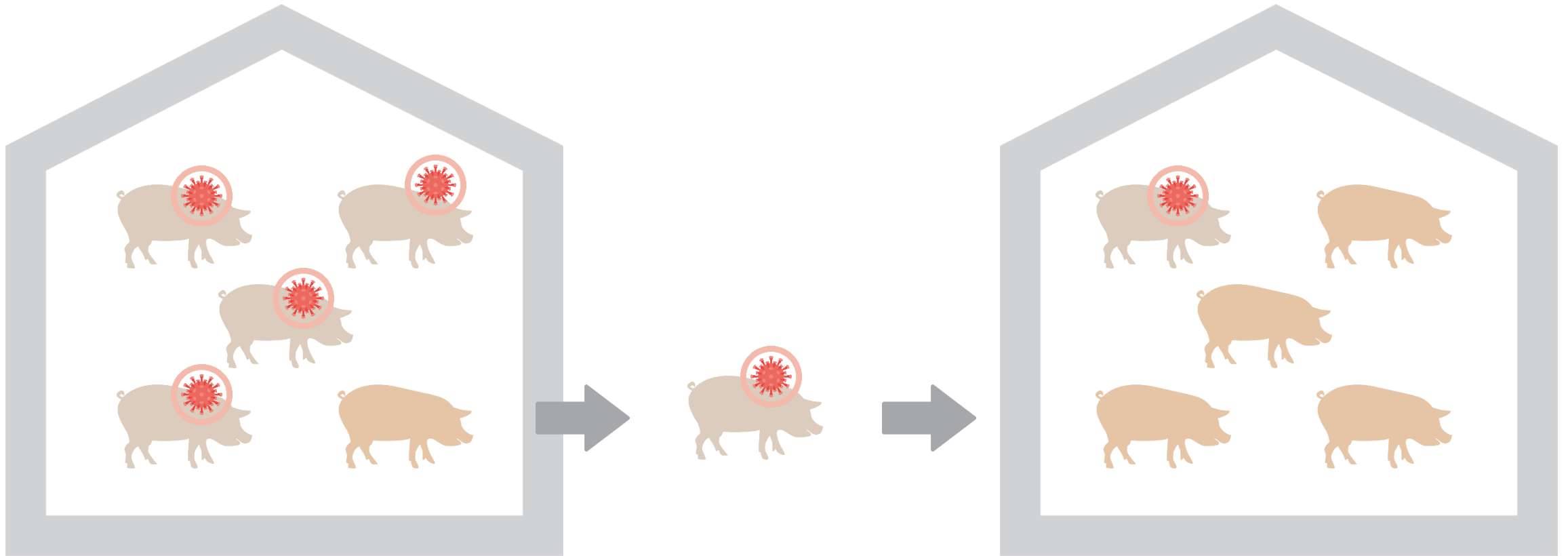
E.coli and necrotising enterocolitis

Parvovirus

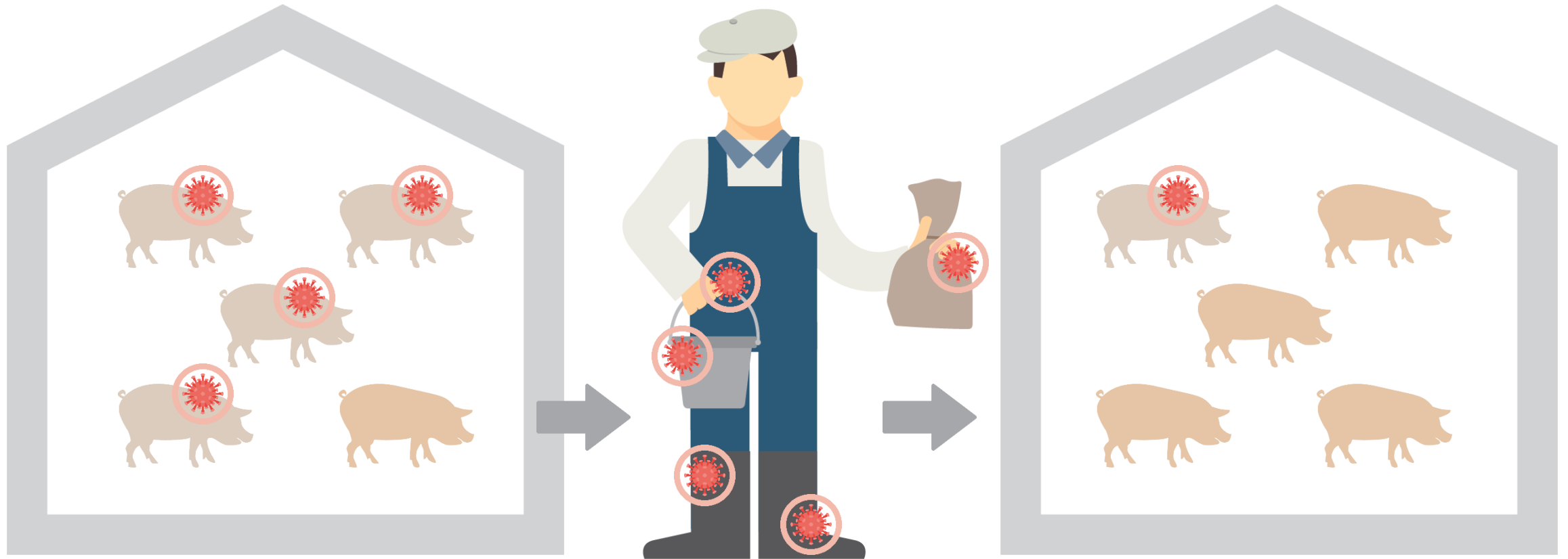
Weaned pigs

PCV2

Pigs can transmit virus



You can transmit virus



A study showed that it took only 2 days for PRRS virus to be transmitted to the healthy pigs

Infection stop in the farrowing unit



Move pigs as little as possible – only move excess pigs

Do not make nurse sows after 48 hours

Handle pigs in the pen – avoid transmitting infection through carts/boxes

Change needles between each litter

Treat sick pigs in the pen

Wean all pigs in a batch on the same day

Infection stop – nurse sows



- Move the nurse sow into the farrowing section with the newborn pigs
- If you move newborn pigs to a section with older pigs, the older pigs may transmit virus to the newborn pigs
- Move the nurse sow's own pigs out of the farrowing unit immediately



Infection stop – weaned pigs, finishers and gilts

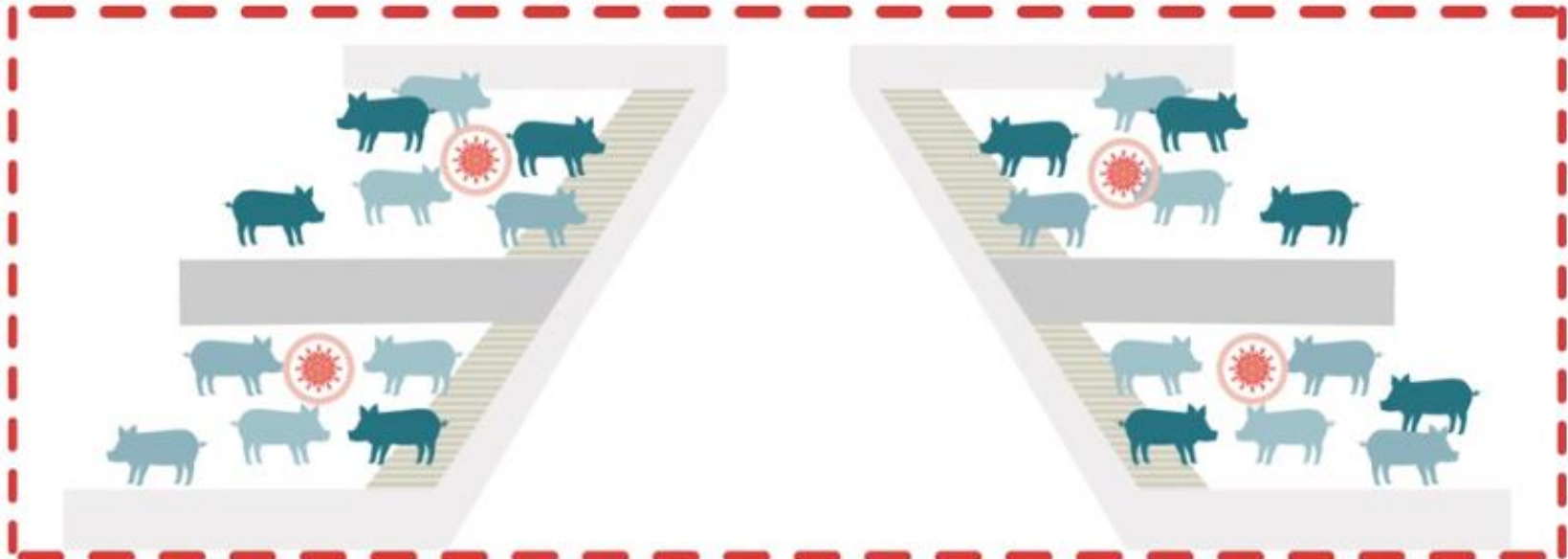


Batch management – all in-all out. Do not move pigs back in the system

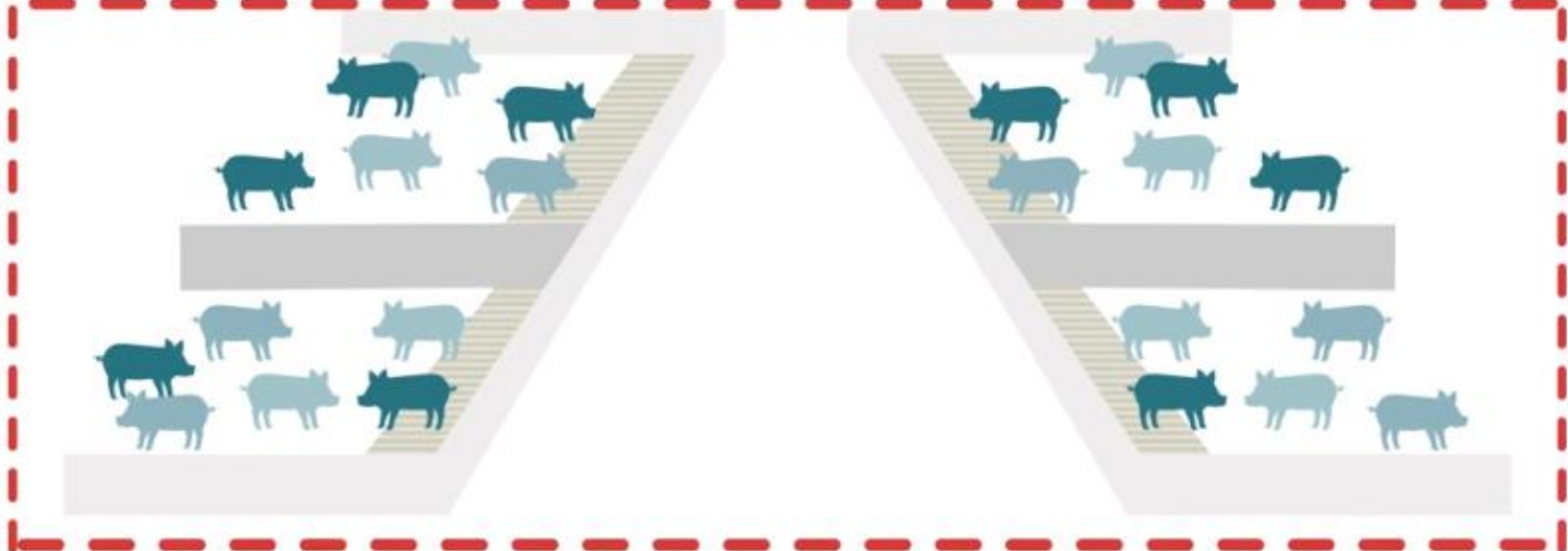
No contact between different age groups – sectioning is essential

Avoid contact between sows and weaned pigs/finishers

Always transfer gilts via quarantine – also own gilts



100% sektioneret



Free online course on infection protection available in Danish, English and Ukrainian

INFECTION PROTECTION

Learn how to keep virus out

How can you minimise and even prevent infection from spreading in and between sections

<https://kurser.seges.dk>

AVAILABLE
IN 4 LANGUAGES

FREE
ONLINE
COURSES

ONLINE COURSES ABOUT DANISH PIG PRODUCTION

ONLINE KURSER OM DANSK GRISEPRODUKTION

CURSURI ONLINE DESPRE FERMELE DE PORCI DIN DANEMARCA

ОНЛАЙН-КУРСИ ПРО ДАНСЬКЕ СВИНАРСТВО

SEGES
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Get vaccinated against influenza – it only costs roughly DKK 200



Ved Apotekerforeningens
farmaceuter

Sundhed

Influenzavaccination

SEGES
INNOVATION

Workmen and vets should be vaccinated

All visitors in the unit, eg workmen and vets, should be vaccinated to protect the pigs.

You can get vaccinated against influenza from October 1



No unnecessary visitors in the units during the influenza season (October-March)

Visitors should not be in direct contact with the pigs

For more information on influenza



6. JANUAR 2023

PODCAST-SERIE OM INFLUENZA

I fire podcasts stiller SEGES Gris skarpt på influenza A-virus i grisebesætninger. En forsker og en dyrlæge gør dig klogere på, hvad influenza er, hvordan man håndterer smitten i besætningerne, og hvordan man undgår smitte fra mennesker til grise og omvendt.

Take home message

- Influenza, PRRS and PCV2 virus are found in pigs all year round
- Virus is an entry point for other respiratory diseases
- The level of disease in a herd varies

- Vaccines can reduce disease
- Infection stop measures will reduce the circulation of virus

- People with business in a pig unit must be vaccinated against influenza once a year

THANKS
for your attention

Free courses on kurser.seges.dk in english and ukrainian



Hyppig gylleudslusning

Hyppig gylleudslusning er vigtig for at reducere udledningen af klimagasser og forbedre klimaet for medarbejdere og grise i staldene.

DKK 0,00



Jerntildeling

I dette kursus vil du lære om, hvorfor grise har behov for jerntilskud, og hvordan det gives via indsprøjtning og oralt.

DKK 0,00



Kastration

Det er vigtigt for grisen, at grisen kastreres korrekt, og man overholder lovgivning om smittebeskyttelse.

DKK 0,00



Klimaaftryk og ESGreen Tool - Gris

Lær at anvende ESGreen Tool til at beregne klimaaftrykket på din bedrift og arbejde med forskellige virkemidler til at opstille fremtidsscenarier for din...

DKK 0,00



Medicinhåndtering

Det er afgørende, at du ved, hvordan du skal give medicin til grisene.

DKK 0,00



Opdræt polte

Poltene skal opdrættes på den rigtige måde for at blive til gode søer, der både producerer mange kuld med store grise og har en høj mælkeydelse.

DKK 0,00



PRRS

PRRS er en smitsom virus-infektion i luftvejssystemet, der kan ramme alle grise.

DKK 0,00



Smittebeskyttelse

Lær at undgå at få smitte ind og ud af besætningen, samt at holde influenza ude af besætningen.

DKK 0,00



Soens og grisens cyklus

Arbejdet i stalden struktureres ud fra soens og grisens cyklus.

DKK 0,00



Tandslibning

I dette kursus vil du lære om, hvorfor grise skal have slebet deres tænder, og hvordan det gøres.

DKK 0,00