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CORONAVIRUS DISEASE 2019 UPDATE (340): ANIMAL, CHINA, ENVIRONMENTAL MONITORING, NETHERLANDS (NORTH BRABANT), MINK, SPREAD

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A ProMED-mail post
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In this update:
[1] China: environmental monitoring policy/program, markets
[2] Netherlands: mink, North Brabant, 27th outbreak

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[1] China: environmental monitoring policy/program, markets
Date: Fri 31 Jul 2020
Source: Reuters [abridged, edited]
https://www.reuters.com/article/us-health-coronavirus-china-markets/china-orders-regular-coronavirus-tests-at-wholesale-markets-idUSKCN24V1KP

China's National Health Commission (NHC) has urged local authorities to strengthen monitoring for the coronavirus at major wholesale markets that can cover extensive neighbouring areas, especially those with stands selling frozen and refrigerated meats and seafood, or with moist and closed spaces, according to a notice published on the commission's website.

The guideline comes after China's capital city Beijing reported in early June [2020] a cluster of coronavirus infections that centred around a major wholesale market.

Local working groups in charge of coronavirus control and prevention must collect samples once a week from major wholesale markets, especially those selling meats and seafood, for coronavirus tests. However, smaller wholesale markets can do testing once a month.

Areas and objects at the markets that should be tested for the coronavirus include knives used at major stands, workers' clothing surfaces, freezers, meats and seafood, sewage, restrooms, garbage trucks, and offices, according to the NHC notice [see comment].

China has already started COVID-19 testing on imported meats and seafood and at domestic meat processors. It has also banned shipments from a list of meat-processing plants overseas.

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[The exhaustive official notice, "Technical Specifications for Environmental Monitoring of the New Coronavirus in the Agricultural Trade (Market Trade) Market," is available at http://www.gov.cn/zhengce/zhengceku/2020-07/30/content_5531368.htm (in Chinese). It includes 5 main chapters covering the various aspects of this ambitious policy/program and its application, with detailed descriptions of activities, equipment, methods, etc., including laboratory biosafety requirements and the labs' hierarchy. The tests to be performed are RT-PCR (reverse transcription polymerase chain reaction) and next-generation sequencing (NGS "deep sequencing").

Chapter 3, "Sample collection," specifies the following samples to be collected, summarised as follows:

1. Swab samples from throat, hands, clothes, and other objects of "practitioners";
2. Food surfaces (food to be separated carefully, stored in a clean sampling bag before collecting swab samples);
3. Sewage samples (according to the distribution of drainage systems in the market, focusing on the internal pipe network collection, downstream of the water-flow direction, or the connection with the municipal pipe network);
4. Animal samples (from live animals: body surface swabs, oropharyngeal swabs, and anal swabs, as well as excrement or secretion samples; from animal samples that have undergone skinning: body surface and body-cavity swab samples);
5. Swab samples or liquid samples from "other equipment" (e.g., animal cages, fish tanks);
6. Aerosol samples in local trading areas, offices, restrooms, and other environments where people are gathered and poorly ventilated.

The inclusion of animal sampling is of particular significance, probably indicating the possible integration of animal-health agencies beside the public-health-oriented agencies involved in the sampling (and control?) activities spelled out in the program. The handling of the animals kept at the Huanan Seafood market in Wuhan when it was closed down, suspected to harbor the main and initial cluster of COVID-19 patients (31 Dec 2019 / 1 Jan 2020), was less than optimal, to say the least.

The head of the Chinese Center for Disease Control and Prevention (China CDC), immunologist Gao Fu, said in an interview with CCTV (China Central Television) News Channel on 23 Jan 2020: "After the outbreak of the epidemic, the Chinese Center for Disease Control and Prevention quickly found the source, the South China Seafood Market. Although it is called seafood, there are actually illegally traded wild animals. We have found the genome of the virus and the virus through monitoring of environmental samples from stalls that illegally operate wild animals. We were able to isolate the virus from this environmental sample. In other words, the virus was not only seen in the infected person's body, but also in the stalls that illegally sold wild animals. . . . Of course, we also have limitations. The market closed quickly, and we did not find out what kind of wild animal it was."

The lacuna in information on the animals kept during the critical period in Wuhan's Huanan Seafood market, which was "closed quickly," has been underlined recently in a Q&A with China's coronavirus expert, Shi Zhengli, published by Science magazine (20200727.7617582):

"Q. Do you know whether anyone tested animals from the market? If not, why not?
A: Under the deployment of Hubei Provincial Government, our team, alongside researchers from Huazhong Agricultural University, collected environmental samples and frozen animal samples in Huanan seafood market. We detected SARS-CoV-2 nucleic acids only in the environmental samples such as roller shutter door handles, the ground, and sewage, but not in the animals.
Q. Were you ever given environmental or animal samples from the market to test yourself? If so, what did you find? If not, what do you know about the market samples tested?
A: We detected SARS-CoV-2 nucleic acids in environmental samples from the Wuhan seafood market, including on rolling door

handles, on the ground, and in sewage, but the detected numbers of viral genome copies were very low."

Clearly, live animals were not tested; the species of the frozen animals is not given. According to elementary veterinary provisions, in such circumstances, all (live!) animals within the affected premises/facility should be immediately identified, isolated, sampled, and -- pending test results -- released (less likely), put under strict quarantine, or culled (and undergoing PM). More severe actions are required if a zoonosis is suspected. As it appears, none of these have taken place.

China has already proven its ability to conduct effective countrywide monitoring activities in relation to zoonotic pathogens, as testified by its continuing influenza projects in pigs and in poultry (including markets). The new COVID-19 monitoring policy, when implemented, will hopefully become a tremendous step forward for China's disease prevention and early-detection capacity, hopefully preventing similar scenarios in the future. On top of this, it may equip China's scientific community with a powerful tool that may enable them to detect, in the future, emerging, yet unfamiliar, potentially zoonotic viruses at an early stage of their emergence. - Mod.AS

HealthMap/ProMED-mail map:
China: https://promedmail.org/promed-post?place=7635820,155]

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[2] Netherlands: mink, North Brabant, 27th outbreak
Date: Thu 30 Jul 2020
Source: Blik on Nieuws [in Dutch, trans., edited]
https://www.blikopnieuws.nl/gezondheid/282879/opnieuw-coronabesmetting-geconstateerd-op-nertsenbedrijf.html

An infection with SARS-CoV-2 has been detected at a mink farm in Boxmeer. "It is a company with 12 500 dams. The contamination was brought to light by means of the early warning monitoring system with which cadavers are tested weekly for the virus. The company will be culled as soon as possible," the ministries of Health, Welfare and Sport, and Agriculture, Nature and Food Quality report on Thursday [30 Jul 2020].

A total of 27 mink farms in the Netherlands have now been declared infected. All animals were culled at 26 farms where SARS-CoV-2 has previously been established. Ministers Hugo de Jonge (Health, Welfare and Sport) and Carola Schouten (Agriculture, Nature and Food Quality), together with the fur farming sector and experts, have tightened up the hygiene protocol. There is also a national transport ban, and the Faculty of Veterinary Medicine is conducting in-depth research into possible routes of contamination.

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[Prior to the start of the COVID-19 event in the Dutch mink industry, 127 active mink farms were active in the Netherlands, ranging in size from 500 to 120 000 mink per farm. The total adult mink population given was 2.32 million. This means that more than 21% of the Dutch mink farms have already been found infected. Most of them did not experience clinical signs in the animals: minks are readily infected, remaining subclinical. This may be indicative of the possibility that in mink-producing countries that do not practice lab-backed surveillance, CoV-SARS-2 may be circulating without being noticed/reported. So far, 2 additional countries -- Denmark and Spain -- have reported COVID-19 in farmed minks.

Information on the COVID-19 situation in minks is of particular importance in China, one of the 2 leading mink producers, globally (the other one is Denmark). The potential role of farmed minks as intermediate host of CoV-SARS-2 deserves to be excluded in China, the world's origin of COVID-19. Since infections could have taken place in any point in time, this would require the surveillance to be serological.

For updated, exhaustive information on China's mink industry, subscribers are referred to https://www.actasia.org/wp-content/uploads/2019/10/China-Fur-Report-7.4-DIGITAL-2.pdf. - Mod.AS

HealthMap/ProMED-mail map:
North Brabant, Netherlands: https://promedmail.org/promed-post?place=7635820,1250]

See Also

COVID-19 update (334): animal, Netherlands, mink, spread, UK, cat, 1st rep, OIE 20200727.7617582
COVID-19 update (319): Spain (AR) animal, farmed mink, 1st rep 20200717.7584560
COVID-19 update (317): Netherlands (NB) animal, farmed mink, spread 20200716.7578453
COVID-19 update (322): USA (SC) animal, dog 20200719.7588843
COVID-19 update (312): China, SARS-CoV2 origin, animal reservoir, WHO mission 20200711.7565035
COVID-19 update (308): USA (TX) animal, dog conf. 20200708.7554832
COVID-19 update (299): USA (GA) animal, dog conf 20200703.7535112
COVID-19 update (284): Denmark (ND) animal, farmed mink, spread, dog 20200624.7506728
COVID-19 update (281): Netherlands (NB, LI) farmed mink, spread, animal, global 20200623.7502849
COVID-19 update (280): animal, pangolin, research 20200623.7502805
COVID-19 update (267): animal, domestic, wild, cat, research 20200617.7480013
COVID-19 update (266): Denmark (ND) animal, farmed mink, 1st rep 20200617.7479510
COVID-19 update (251): Netherlands (NB, LI) animal, farmed mink, spread, culling 20200610.7453845
COVID-19 update (248): Netherlands (NB, LI) animal, mink, spread, culling, cat 20200609.7446478
COVID-19 update (238): USA (MN) animal, cat 20200605.7429133
COVID-19 update (236): Netherlands (NB, LI) animal, farmed mink, spread, culling 20200604.7427849
COVID-19 update (231): USA (NY) animal, dog conf. 20200602.7420541
COVID-19 update (230): Netherlands (NB, LI) animal, farmed mink, spread, control 20200602.7420433
COVID-19 update (227): animal, cat, dog, research, experimental infection 20200601.7416648
COVID-19 update (215): Netherlands (NB) animal, mink-to-human, epidem., control 20200527.7385049
COVID-19 update (212): Russia (Moskva) animal, cat, OIE 20200526.7379578
COVID-19 update (209): Netherlands (NB) farmed mink, animal-to-human, cat, epid 20200525.7375359
COVID-19 update (198): Netherlands (NB) farmed mink, animal-to-human infect susp 20200520.7359976
COVID-19 update (189): Netherlands (NB) animal, farmed mink, research, cat, dog 20200517.7344274
COVID-19 update (183): Japan/USA, animal, research, cat, experimental infection 20200514.7337185
COVID-19 update (181): Germany (BY), France (AC), cat, OIE animal case definition 20200513.7332909
COVID-19 update (177): Netherlands (NB) animal, farmed mink, Spain (CT) cat susp 20200512.732858
COVID-19 update (174): Netherlands (NB) animal, farmed mink, comment 20200511.7323845
COVID-19 update (169): Netherlands (NB) animal, farmed mink, spread, rabbit susp 20200509.7316646
COVID-19 update (154): Netherlands (NB) animal, farmed mink, research 20200503.7294846
COVID-19 update (146): Netherlands (NB) animal, farmed mink, epidemiology 20200501.7286113
COVID-19 update (143): USA (NY) animal, zoo, tiger, lion, tests 20200430.7284183
COVID-19 update (141): India, animal, wild tiger, susp, clarification, RFI 20200430.7281768
COVID-19 update (138): India, animal, wild tiger, fatal 20200428.7275765
COVID-19 update (135): Netherlands (NB) animal, farmed mink 20200427.7272289
COVID-19 update (130): USA (NY) animal, zoo, tiger, lion, new cases 20200425.7266556
COVID-19 update (124): USA (NY) animal, cat, lion, OIE 20200423.7259119
COVID-19 update (123): USA (NY) animal, cat, conf 20200422.7256272
COVID-19 update (113): USA (NY) cat, animal, susp, RFI 20200418.7240811
COVID-19 update (88): Germany, animal, research, pig, chicken, bat, ferret 20200407.7196506
COVID-19 update (85): USA (NY) animal, tiger, OIE 20200406.7191480
COVID-19 update (84): USA animal, tiger 20200406.7191352

COVID-19 update (76): China (HU) animal, cat, owned, stray, seropositive 20200403.7179946
COVID-19 update (75): China (Hong Kong) animal, cat, OIE 20200403.7179945
COVID-19 update (70): China (Hong Kong) animal, cat, pets & stock 20200402.7173286
COVID-19 update (58): Belgium, animal, cat, clinical case, RFI 20200327.7151215
COVID-19 update (56): China (Hong Kong) animal, dog, final serology positive 20200326.7146438
COVID-19 update (50): China (Hong Kong) animal, dog, 2nd case PCR positive, OIE 20200323.7129951
COVID-19 update (45): China (Hong Kong) animal, dog, 2nd case PCR positive 20200319.7112693
COVID-19 update (37): China (Hong Kong) animal, dog, prelim. serology negative 20200312.7081842
COVID-19 update (30): China (Hong Kong) animal, dog, susp, serology pending 20200306.7057595
COVID-19 update (25): China (Hong Kong) animal, dog, susp, OIE 20200302.7040373
COVID-19 update (22): companion animal, dog susp, RFI 20200229.7036661
COVID-19 update (17): China, animal reservoir, wildlife trade & consumption 20200225.7024245
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin susp 20200220.7009213
COVID-19 update (08): companion animal, RFI 20200218.7002276
COVID-19 update (06): animal reservoir, intermediate hosts 20200217.6997782
Novel coronavirus (40): animal reservoir, pangolin poss intermediate host, RFI 20200210.6972104
Novel coronavirus (28): China (HU) animal reservoir 20200201.6943858
Novel coronavirus (22): reservoir suggested, bats 20200129.6930718
Novel coronavirus (20): China, wildlife trade ban 20200127.6922060
Novel coronavirus (18): China (HU) animal reservoir 20200125.6915411
Novel coronavirus (15): China (HU) wild animal sources 20200123.6909913
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI 20200114.6887480
Novel coronavirus (01): China (HU) WHO, phylogenetic tree 20200112.6885385
Undiagnosed pneumonia - China (HU) (10): genome available, Hong Kong surveill. 20200111.6883998
Undiagnosed pneumonia - China (HU) (07): official confirmation of novel coronavirus 20200108.6878869
Undiagnosed pneumonia - China (05): (HU) novel coronavirus identified 20200108.6877694
Undiagnosed pneumonia - China (01): (HU) wildlife sales, market closed, RFI 20200102.6866757
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Undiagnosed pneumonia - China (HU): RFI 20191230.6864153
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