



COVID-19 research UMC Utrecht Observational studies

Coordination:

5.1.2e

5.1.2e

New studies can be reported via:  @umcutrecht.nl
en  @umcutrecht.nl

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We strive to learn from every COVID-19
patient!

Through multidisciplinary collaboration we
realize high-quality research...

... to improve the treatment of COVID-19
patients or prevent infection.

Overview observational studies COVID-19 (1)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O1	Uniforme data verzameling	ISARIC eCRF (CAPACITY-COVID) voor uniforme data verzameling	5.1.2e	Data ptn	UMCU-breed	Afgerond (Niet-WMO plichtig)	Enrolling	
O2	Uniforme data verzameling	Nethoss/INOSS systeem		Data ptn (zwangeren & pasgeborenen)	Perined.nl/NVOG; INOSS	Afgerond (Niet-WMO plichtig)	Enrolling	NL: 124; Global:750
O38	Registry	ISACS STEMI COVID-19		Data patiënten	database	Niet-WMO verkregen	Data acquisitie	54
O44	Registry	Value-Dx, PPAS Corona		Registratie contacten	Registratie, 17 Europese landen	Niet-WMO verkregen	Enrolling	2126
O4	Modelling	Mathematical modeling COVID-19		Data ptn	Juliuscentrum	NA	Ongoing	
O3	Pre-klinisch	CLEAR-COVID-19		Ptn materiaal + organoids	UMCU-breed	METC/TCBIO patiënten aanwezig; METC aanvraag voor HCW moet nog ingediend		
O20	Pre-klinisch	RNA-methylatie & SARS-CoV-2		Cellijn, virus	CTI/BSL3 (MMB)	nvt	Preparation	
O29	Preklinisch, mechanisme, predictie/beloop	COVID-Immune, prognostic and mechanistic Immune phenotyping		Pt materiaal (Plasma, PBMCs), data	Standard of care (CTI/KI)	Biobank (20175)	Enrolling	150
O7	Predictie/beloop	Innate immune phenotyping		Pt materiaal	Standard of care (CTI/KI)	nWMO; TcBio uitgifte protocol 20-175	Enrolling	>400 ptn; >800 smpl; >1600 data points

Overview observational studies COVID-19 (2)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)	
O33	Preklinisch, mechanisme, predictie/beloop	META-COVID (linked to O29)	5.1.2e	Plasma	Standard of care (CTI/KI)	Biobank (20175), MARS	Enrolling	150	
O31	Preklinisch, mechanisme, predictie/beloop	MB COVID-microbiome		Viral swabs, data	MMB/KI	Nvt	Preparation	60	
O40	Preklinisch	How antibodies and complement contribute to COVID-19 pathogenesis		Plasma	MMB/CTI	afgerond			
O5	Genomics	HG-COVID-19: Human Genetic Predisposition to Severe COVID-19 Infections		Ptn materiaal	MARS (IC)	MARS amendement, goedgekeurd	Ongoing	9	
O32	Etiologie	IMPACT - EPIC			Cohorten (EPIC-NL, Nightingale, AMIGO, PIAMA, SMART, Hoom)	nWMO toetsing ingediend	Enrolling		
O14	Diagnostiek	Heracles		Medewerkers	Cohort	Permission obtained	Recruitment finished; closure 22 May	300	
O39	Diagnostiek	COVID-RED (IMI)			Wearable, app				
O25	Diagnostiek	POCUS DVT bij longembolie			ptn		Afgerond, nWMO	Enrolling	0



Overview observational studies COVID-19 (3)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O6	Predictie/beloop	Predicteonderzoek	5.1.2e	Data ptn	ISARIC eCRF (UMCU), RECOVER household, primary care and hospital study	Afgerond	Preparation	
O35	Predictie	COVID@HEART		Plasma	Cohorten (ERGO, MAASTRICHT, LRGP) en Huisartseninformatiesystemen	Niet-WMO verkregen 8/5/20	Indiening bottom up ZonMw, anders geld van NHS/DCVA	2000, incl 200 bevetigd COVID19
O8	Predictie/beloop	COVIP		Data ptn IC	Observationeel	Afgerond (niet-WMO-plichtig): 20-229/C	Enrolling	
O23	Predictie/beloop	COVPACH: Covid-19 Patient Characteristics		Data ptn	ISARIC eCRF (UMCU), CAPACITY studie	Afgerond (nWMO, 20-284)	Enrolling	172
O27	Predictie/beloop	ML Covid: Machine learning voor het beloop en de behandeling van COVID-19 patiënten		data ptn (IC)	database	Afgerond (niet WMO-plichtig): 20-251/C	Preparation	100?
O28	Predictie/beloop	ProVent: preactise in ventilation in COVID-19 patients		data ptn (IC)	database	Afgerond (niet WMO-plichtig): 20-257/C	preparation	
O24	Predictie/beloop	COVID-19 in chirurgische patiënten		Data ptn	ISARIC eCRF (UMCU)	nWMO	Enrolling/finishe d	1495
O36	Predictie beloop	Gevolgen van uitgesteld operatie bij IBD pt wegens COVID		Data ptn	ISARIC eCRF (UMCU)	nWMO	Enrolling	500

Overview observational studies COVID-19 (4)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O37	Predictie beloop	Impact van COVID-19 op de kinderchirurgie	5.1.2e	Data ptn	ISARIC eCRF (UMCU)	nWMO	Enrolling	100
O22	Klinisch beloop	Longembolieën in COVID-19 patiënten		Data ptn, beelddata	ISARIC eCRF (UMCU)		Preparation	
O41	Klinisch beloop	COVID-19 delirium case serie met behulp van DeltaScan EEG		Data patiënten IC	Database, DeltaScan EEG	Afgerond, nWMO	Wordt opgestart	
O47	Observationeel, klinisch beloop	PRO-COVID-19 (ZonMW)		Patient data, serology	Pts in GP with complicated respiratory tract infections	WMO-plichtig, moet nog ingediend worden	Preparation	
O18	Epidemiologie, transmissie	COCON (ZonMW): Control of COVID-19 in hospitals - sero-epidemiology in health care workers		Data ptn & medewerkers	nvt	Afgerond; 20-241	Site initiation visits begonnen	-
O19	Transmissie	CoKids (ZonMW)		Gezinnen materiaal en data	Kindercohorten (RESCEU, MUIS, Generation R)	Amendementen moeten nog ingediend	Preparation	
O11	Transmission	CovidCord		Ptn materiaal, Data patiënten	Perined.nl, Parelsnoer Obstetrie/ Biobank Navelstreng bloed	Afgerond	Enrolling	1
O12	Transmission	RECOVER-CoronaThuis		Ptn, gezinscontacten, materiaal, data	COMBACTE netwerk	Afgerond (20-185)	Enrolling	

Overview observational studies COVID-19 (5)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O10	Klinisch beloop	RECOVER	5.1.2e	Ptn materiaal, Data ptn	COMBACTE netwerk	Afgerond	Enrolling	
O43	Klinisch beloop, Predictie	RECOVER, SOS-COVID		Data patiënten	Inclusie, 6 Europese landen	Niet-WMO verkregen	Enrolling	237
O45	Social Science	RECOVER Social Science Primary Care		Interviews	RECOVER	Niet-WMO verkregen	Enrolling	20
O9	Social Sciences	RECOVER-Perceptions healthcare workers		Data medewerkers	COMBACTE netwerk	Afgerond (Niet-WMO plichtig)	Enrolling	190
O15	Kwaliteitsverbetering Zorg	Continuous Monitoring		Data	D2West	Moet nog ingediend (niet WMO plichtig)	Preparation	
O16	Kwaliteitsverbetering Zorg	Intubate COVID airway provider registry		Data medewerkers	Cohort anesthesiologen en intensivisten	Afgerond (Niet-WMO plichtig)	Enrolling	
O30	Zorg/haalbaarheid	TEMECO: Telemedicine bij herstellende COVID-19 patiënten		Data ptn, app, saturatiemetingen	vragenlijst	Afgerond voor deel 1 (nWMO 20-248). (Deel 2+3: aanvraag in voorbereiding)	Preparation	0
O46		Validation national Corona Check app		Extended dataset	Retrospectieve app gebruikers database	nWMO wordt ingediend		
O42		Feasibility analysis of an EU infrastructure for COVID-19 vaccine monitoring						

Overview observational studies COVID-19 (6)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O17	Werkbeleving	Leveraging Entrustment to Alternative Professionals (LEAP)	5.1.2e	Data medewerkers	Cohort artsen & verpleegkundigen	Moet nog ingediend	Preparation	
O26	Social science	Psychological effects COVID-19 measures in patients with psychiatric diagnosis		Ptn psych	Psych database (UMCU)	nWMO toetsing ingediend	Preparation	
O34	Social science	Impact van COVID-19 op gezinnen met kinderen met Spinale Musculaire Atrofie		SMA ptn	SMA Expertisecentrum	afgerond (niet WMO-plichtig)	Enrolling	
O47	Observationeel, klinisch beloop	PRO-COVID-19 (ZonMW)		Patient data, serology	Pts in GP with complicated respiratory tract infections	WMO-plichtig, moet nog ingediend worden	Preparation	
O48	Observationeel, werkbeleving	LEAP2 (Leveraging Entrustment to Alternative Professionals part 2)		Data medewerkers	Cohort artsen & verpleegkundigen	afgerond (niet WMO-plichtig)	Ongoing	40-60
O49	Klinisch beloop, Prognose	COVID PREDICT DB (immuungeoïmpromitteerden)		Patient data	Pts in ICU and wards	afgerond (niet WMO-plichtig)	preparation	

Overview observational studies COVID-19 (6)

Ref. nr.	Type research	Title	Coordinator*/team	Needed	Infrastructure	METC	Status	N (Current)
O50	transmission	SARS-CoV-2 transmission in secondary schools and the influence of indoor environmental conditions	5.1.2e		Scholennetwerk VO-raad	Niet-WMO verklaring	wordt aangevraagd	
O51	diagnostics	SARSLIVA		75 COVID-19 patienten en gezinsleden	GGD, huisartsen, Spaarneziekenhuis	WMO-plichtig, ingediend en afgerond	verkregen	10

Observational studies

O1. ISARIC-eCRF/CAPACITY COVID, uniforme dataverzameling

Rationale:

International initiative of ISARIC-WHO to standardize data collection of all highly suspected/positive COVID-19 patients

- ISARIC: International Severe Acute Respiratory and Emerging Infection Consortium
 - <https://isaric.tghn.org/covid-19-clinical-research-resources/>
- CAPACITY: Cardiac complicaTions in Patients with SARS Corona vIrus 2 regisTry for more information
 - please see: www.capacity-covid.eu

Domain: Patients with highly suspected and ultimately proven COVID-19 (PCR) admitted to the hospital

Methods:

- Standardized data collection through REDCap. REDCap environment hosted by the Netherlands Heart Institute – Durrer Center
- ISARIC-WHO CRF (with an extension of various Data Collection instruments on cardiac history, cardiovascular risk factors, ECG, echocardiography, cardiac MRI, cardiac complications and follow-up at 7- and 30-days (for admitted patients).

For other researchers

- Non-WMO declaration by METC for ISARIC-WHO/CAPACITY
- Data Processing Agreement with Durrer Center arranged
- Possibility to extend REDCap environment with additional Data Collection Instruments for research initiatives from other departments

Contacts: 5.1.2e (JC/VF), 5.1.2e (Card)



O2. Nethoss/INOSS systeem, uniforme dataverzameling

Rationale/Hypothese: The International Network of Obstetric Survey Systems (INOSS), a multinational collaboration of organizations conducting population-based studies of severe disorders in pregnancy, seeks to examine the effects of the Covid-19 pandemic on pregnant women and newborns in 17 countries on 4 continents using a standardized methodology. Nethoss (Netherlands Obstetric Surveillance System) is member.

Domain: INOSS: data collected from all hospitalized Covid-19 confirmed pregnant women and their newborns. Nethoss: data collected from Covid-19 confirmed pregnant women and their newborns (including hospitalized women)

Research questions: 1) what is the severity of Covid-19 illness in pregnant women (i.e. rates of pneumonia, thromboembolism, ICU admission, death) and their newborns (i.e. NICU admission, death); 2) does illness severity differ by pregnancy trimester and specific risk factors; 3) what medications influence the course of illness in pregnant women; 4) does intrauterine or peripartum transmission occurs; and 5) is it safe for infected women to breastfeed and care for their newborns.

Methods/approach: real-time, population-based data collection for Covid-19 in pregnancy, using the same methodology (i.e. protocol, data collection form) For countries who don't have the opportunity to have their own database, OpenClinica database for data entry is available through United Kingdom's UKOSS (Oxford University) for INOSS members.

In progress; datasharing agreements for INOSS and WHO. Biobanking of maternal, cord blood and Placentatissue

Contacts:

5.1.2e

Chair Nethoss/INOSS



O3. Respiratory epithelial culture models and treatment effects, preclinical

The use of live respiratory epithelial culture models to investigate individual variation in disease and treatment effects of medication in infection with SARS-CoV2.

Research questions:

1. Are there differences in respiratory epithelium between absence and presence of SARS-CoV2 in people with a difference in COVID-19 disease severity or vulnerable groups (e.g. CF)?
2. Can pharmacological interventions aimed at inhibiting SARS-CoV2 replication in airway cells be defined?

Regulatory procedure:

- The UMCU Airway biobank (TcBio 16-586) allows storage and long term growing of samples obtained after IC in people with respiratory diseases through targeted nasal swab procedure or from residual material (restmateriaal). This way materials can be included in the biobank.
- Issuance of these materials for preclinical research is currently being prepared (Beekman, Nijhuis) in an issue document that needs to be reviewed and approved by the TcBio.

O4. Mathematical modeling COVID-19

Preprints:

- *Impact of self-imposed prevention measures and short-term government intervention on mitigating and delaying a COVID-19 epidemic.* A. Teslya, T.M. Pham, N.G. Godijk, M.E. Kretzschmar, M.C.J. Bootsma, G. Rozhnova
<https://www.medrxiv.org/content/10.1101/2020.03.12.20034827v1> (PLoS Medicine, in press)
- *Isolation and contact tracing can tip the scale to containment of COVID-19 in populations with social distancing,* Mirjam E Kretzschmar, [REDACTED], Michiel E van Boven
<https://www.medrxiv.org/content/10.1101/2020.03.10.20033738v1>
- *Time is of the essence: impact of delays on effectiveness of contact tracing for COVID-19.* Mirjam E Kretzschmar, [REDACTED], Maarten Bootsma, Michiel E van Boven, Janneke van de Wijgert, [REDACTED]
<https://www.medrxiv.org/content/10.1101/2020.05.09.20096289v1>
- *De rol en het gebruik van modellen voor het voorspellen van opnames met COVID-19.* Bastiaan Van der Roest, Noor Godijk, [REDACTED], [REDACTED], Martin Bootsma. Submitted.

Proposals:

- Real Time National Policy Adjustment and Evaluation on the basis of a computational model for COVID19 (Retina COVID19), Martin Bootsma, [REDACTED], [REDACTED]
- Characterising transmission parameters of SARS-CoV-2 in a peri-urban setting in Mozambique using populationbased surveillance and a high-throughput sero-assay. EDCTP, [REDACTED]

Work in progress:

- Investigating the impact of interventions on healthcare demand (i.e. ICU bed capacity) in the Netherlands, [REDACTED], [REDACTED], [REDACTED], [REDACTED]
- Investigating possible within hospital transmission of COVID-19 and implications for cohorting and testing of health care personnel, [REDACTED], [REDACTED], [REDACTED]
- Investigating fatigue in social distancing and impact on transmission, [REDACTED], [REDACTED], and others
- Investigating effectiveness of contact tracing for containment when lifting social distancing measures, [REDACTED], [REDACTED], [REDACTED]

Contacts:

[REDACTED]



05. HG-COVID-19: Human Genetic Predisposition to Severe COVID-19 Infections, pre-klinisch

Hypothesis: Severe COVID-19 infections, at least in some individuals, can result from inborn errors of immunity

Study design: Observational, addendum MARS-protocol

Approach:

Critically-ill COVID-19 patients without co-morbidity

- Whole exome sequencing
- Genome wide analysis for disease-causing mutations
- Functional characterization candidate gene(s)

Contacts: 5.1.2e as part of international consortium
COVID-HGE (www.covidhge.com)

O6. prediction

- **Rationale/Hypothese:** coordination prediction research where "predictor of interest" is considered in the entire context of the patient
- **Domein:**
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts:**

5.1.2e

5.1.2e

07. Innate immune phenotyping, predicitebeloop

Rationale: The mortality of COVID patients is at least in part due to hyperactivation of the innate immune system.

Hypothesis: Early derailment of the innate immune system is a prognostic marker of late inflammatory complications.

Methods: Longitudinale follow-up study to monitor the innate immune system in all patients that come to the ER and/or are hospitalized in the UMCU. The innate immune characterization is performed by fully automated flowcytometry. Data are available within 20 min in GLIMS.

Research questions:

1. Does early hyperactivation of granulocytes at presentation at the SEH or ward predict a severe clinical cause?
2. Does depletion of granulocytes in patients at the ICU predict worst case scenario?

Contacts:

5.1.2e

O8. COVIP: Outcome of “elderly” COVID patients on the ICU, predictiebeloop

Previous publications:

- see <https://vipstudy.org/vip-papers/>
- *The contribution of frailty, cognition, activity of daily life and comorbidities on outcome in acutely admitted patients over 80 years in European ICUs: the VIP2 study. Intensive care medicine, 10.1007/s00134-019-05853-1.*

Research question: what variables are associated with a poor outcome of COVID-19 patients?

Domain: elderly patients >70 years admitted to the ICU

Variables collected: demographics, comorbidities, frailty, SOFA-score, Katz-ADL, treatments given at the ICU,

Outcome: alive at day 30 (optional: QoL after 3 months)

O9. RECOVER Social sciences - Healthcare worker survey, social sciences

Perceptions of preparedness of healthcare workers regarding local infection prevention and control procedures for Covid-19

Rationale: Onderzoek tijdens eerdere epidemieën liet zien dat voorbereidheid en percepties van zorgverleners zeer belangrijk waren in het voorspellen van latere uitval van zorgverleners. Aandacht aan deze organisatorische aspecten, tezamen met emotionele en sociale aspecten is daarom van groot belang.

Domein: Europese zorgverleners (bijv. artsen, verpleegkundigen) met direct patiëntcontact

Methods: Electronische cross-sectional survey van 10-15 minuten

Vraagstellingen:

- Wat zijn de percepties en hoe voorbereid zijn Europese zorgverleners op het gebruik van infection prevention & control (IPC) procedures ter voorkoming van verspreiding COVID-19? Hebben zij voldoende training gehad?
- Hoe verschilt dit binnen subgroepen (o.a. land, ziekenhuizen die wel of geen COVID-19 patiënten behandelen, zorgverleners met wel of geen training in het behandelen van COVID-19)
- Welke IPC procedures worden momenteel gebruikt bij contact met COVID-19 verdachte/positieve patiënten en hoe verschilt dit per Europese regio?
- Emotionele aspecten, bijv. is er sprake van angst, is er sociaal stigma, in hoeverre is er sprake van plichtsgevoel, in hoeverre voelen zorgverleners zich bekwaam om deze IPC procedures te volgen?
- Hoe scoren Europese zorgverleners op emotionele gezondheid, zijn hier risico's?
- Hoe is de beschikbaarheid van individuele PPE middelen?



Contacts: 5.1.2e

O10. RECOVER, klinisch beloop

Rationale/Hypothese: determine the spectrum of SARS-CoV-2 disease and the combined influences of age, comorbidities, co-infections as well as virological and immunological profiles on the development of severe disease.

Domein: Patients hospitalized with COVID-19

Vraagstellingen: 1) To establish the prevalence, disease spectrum and severity, clinical features, management, risk factors, spread and outcomes of novel 2019 coronavirus infection (SARS-CoV-2) in Hospital Care in selected European countries; 2) To determine the risk of hospital-acquired SARS-CoV-2 infection during the COVID-19 epidemic in Europe; 3) To determine the long-term sequelae of COVID-19 requiring hospital care.

Methods/approach: Multicentre, prospective observational cohort study

Contacts:

5.1.2e



O11. CovidCord, transmission

Research question: Does transplacentaire transmission of SARS-CoV-2 occur in pregnant women with Covid-19?

Domain: pregnant women with a positive SARS-CoV-2 test

Methods: measuring viral load in serum mother + cord blood with RT-PCR with 8 different primers (including the 3 most commonly used diagnostic primers).

Results: Correlation viral load COVID-19 in cord blood with viral load mother, SWAB result child, clinical parameters child.

Contact:

5.1.2e

O12. RECOVER CoronaThuis, transmissie

Rationale/Hypothese: Transmission within households is a key process driving the epidemic of many respiratory viruses. Household studies are therefore a useful approach to obtain insight into the main determinants of transmission and to derive estimates of transmission parameters.

Domein: Households exposed to an index case with COVID-19

Vraagstellingen: Estimate key transmission parameters of SARS-CoV-2. Specifically we will infer: Household secondary attack rates; Transmission rate; Incubation period; Generation time; Susceptibility and infectiousness of different types of individuals (e.g. age, gender, disease severity, type of symptoms, viral load); Household (e.g. household size, living conditions, sanitary facilities, pets) and behavioral characteristics that influence transmission.

To characterize the views and experiences of households regarding perceptions, practices regarding infection control, and impacts of imposed isolation measures.

Methods/approach: Prospective longitudinal household study

Contacts:

5.1.2e



O13. RESCEU: burden COVID in children, transmissie

Rationale:

Burden and household transmission is unknown. RESCEU is an available healthy birth cohort.

Hypothesis:

The incidence of COVID infection in healthy infants is similar to their parents. Secondary: infant infection precedes parental infection

Methods:

Healthy birth cohort study with weekly monitoring and intensified sampling in case of RTI

Contacts:

5.1.2e

O14. Heracles: diagnosing presymptomatic COVID in health care workers, diagnostiek

Rationale:

There is a need for a screening tool for presymptomatic COVID infection among health care workers.

Hypothesis:

IP-10 and TRAIL serum levels predict onset of symptoms by COVID.

Methods:

Observational cohort study of exposed asymptomatic health care workers. Repeated blood draws are used to analyze IP-10 and TRAIL serum concentrations in relation to the risk of onset of symptomatic COVID.

Contacts:

5.1.2e

O15. Continuous Monitoring COVID-19, quality improvement care

Rational

Continuous monitoring can contribute to the care of COVID-19 patients:

1. Possibility of earlier recognition of deteriorating patients
2. The number of door movements and changing moments of the isolation chamber is limited

Research questions:

- What is the respiration and oxygenation pattern of patients with COVID-19?
- What is the prognostic value of continuously measured respiratory frequency, oxygen saturation and heart rate for predicting IC admission and death?
- Does a continuous monitoring system lead to fewer clothes changing times and lower number of infected employees?
- What is the feasibility of continuous monitoring in isolated patients?

Methods:

For this, first a controlled implementation of a continuous monitoring system in department D2West is first carried. After, an observational study will be performed.

Contacts:

5.1.2e

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O16. IntubateCOVID airway provider registry, quality improvement care

Doel: Een internationaal prospectief kwaliteitsverbetering project met als doel reductie van het aantal gevallen van transmissie van COVID-19 van patiënten aan zorgverleners die zich bezighouden met luchtweg management (anesthesiologen en intensivisten). De hulpverleners zijn bij dit project de proefpersonen.

Belangrijkste onderzoeksvragen:

- Welk percentage van de hulpverleners wordt besmet met het COVID-19 virus?
- Welke voorzorgsmaatregelen worden getroffen bij intubatie van een patiënt met COVID-19?

Opzet: Hulpverleners die intubaties uitvoeren op patiënten met een bewezen of verdenking op COVID-19 infectie, wordt gevraagd om elke intubatie te registreren in de app (registratie via intubatecovid.org). Nadien vindt er op dag 14 en dag 28 een follow-up plaats, waarbij er wordt nagegaan of hulpverleners symptomen hebben ontwikkeld die mogelijk passen bij een COVID-19 besmetting.

Contacts: 5.1.2e

O17. LEAP, werkbeleving


- **Rationale/Hypothese:**
- **Domein:** medewerkers
- **Vraagstellingen:** leveringing entrustment to alternative professionals
- **Methods/approach:**
- **Contacts:** 5.1.2e

O18. COCON: Control of COVID-19 in hospitals - sero-epidemiology in health care workers, epidemiologie

- **Rationale/Hypothese:** Seroprevalence of SARS-CoV-2 antibodies in health care workers
- **Domein:** Professional health care workers, 15 hospitals
- **Methods/approach:** hospital epidemiology for support of infection prevention measures
- **Contacts:** 5.1.2e

5.1.2e

O19. CoKids, dragerschap, ziektelast en transmissie van en naar kinderen, klinisch beloop/transmissie

- **Rationale/Hypothese:** The CoKids study aims to quantify the role of children in SARS-CoV-2 transmission through in three different age-categories relevant to daycare and school closure policies.
- **Domein:** Children and their households
- **Vraagstellingen:**
 - To determine the susceptibility to, and transmissibility of SARS-CoV-2 infection by children of 3 different age-categories: pre-school, elementary school, adolescents.
 - To describe the natural history of COVID- disease in children.
- **Methods/approach:** Prospective observational study of three cohorts of children and their households
- **Contacts:** 

O20. RNA-methylatie & SARS-CoV-2, pre-klinisch

Onderzoek naar rol RNA-methylatie op replicatie en infectie SARS-CoV-2.

- **Doelstellingen:** Beter begrijpen hoe replicatie SARS-CoV-2 op moleculair niveau wordt gemoduleerd, wat hopelijk kan leiden tot nieuwe therapeutische targets.
- **Vraagstelling:** Wat is de rol van RNA-methylatie in replicatie van SARS-CoV-2?
- **Methode:** In vitro infectie van cellijnen met SARS-CoV-2.
- **Contacts:**  5.1.2e

O21. SARS-CoV-2 verspreidingsroutes, pre-klinisch, transmissie

Doelstellingen: Het in kaart brengen van virusevolutie, verspreiding en transmissie via sequencing om verspreidingsroutes te voorspellen

Methode: Sequencing SARS-CoV-2.

Contacts: ErasmusMC coördineert

O22. Longembolieën in COVID-19 patiënten, observationeel

Rationale/Hypothese: Afd. Radiologie ziet veel COVID-patiënten met longembolie. Literatuur: 10-15%, maar op UMCU zou hoger kunnen uitpakken. We vragen ons o.a. af of de longembolieën anders zijn qua samenstelling dan die van non-COVID patiënten en of we via de scankarakteristieken op verrichte CTA pulmonalis, meer kunnen zeggen over de soort trombi.

Domein: COVID-19 patiënten (met verrichte CTA pulmonalis)

Vraagstellingen:

- Kunnen we met bevindingen van CTA meer leren over de pathofysiologie van longembolieën bij COVID patiënten?
- Hoe vaak komen longembolieën voor bij COVID patiënten?
- Maken COVID patiënten andere trombi dan 'gewone' longembolie-patiënten?
- Hebben COVID patiënten met meer pulmonale afwijkingen, ook meer longembolieën?
- Zijn longembolieën geassocieerd met een hogere mortaliteit?
- Hebben de patiënten met longembolieën ook trombi elders (cerebraal, myocard, DVT?)

Methods/approach: Retrospectieve studie, data verzameling:


- Alle verrichte CTA pulmonalis op vanaf 27 februari tot nu, van COVID verdachte of positieve patiënten
- Ter vergelijking, CTA pulmonalis met bewezen longembolieën van patiënten gescand in 2019, voor de pandemie

Contacts:

5.1.2e

O23. COVPACH: COvid-19 PATient CHaracteristics, predictieonderzoek

Observationele studie waarbij data wordt verzameld van coronapatiënten om predictoren voor mortaliteit, IC opname, interne complicaties (zoals trombose, delier en nierfunctiestoornis) en ontslag naar een verpleeghuis te voorspellen.

- **Domein:** alle COVID-19 patiënten
- **Vraagstellingen:** Welke patiënt data kunnen dienen ter predictie mortaliteit, IC opname, interne complicaties en ontslag.
- **Methods/approach:** data patiënten nodig. CAPACITY studie waaraan aantal parameters worden toegevoegd
- **Contacts:**  5.1.2e

O24. COVID-19 in surgical patients, predictieonderzoek

Non-WMO multicenter retrospective study on the influence of COVID-19 on all surgical patients (Cancer Center).

- **Rationale/hypothesis:** COVID-19 has an enormous impact on hospital care leading fewer (elective) surgeries. Testing (PCR and/or CT) only pre-operative who have COVID-19 is enough. It is therefore not necessary to screen every surgical patient with CT and/or PCR.
- **Research questions:**
 - Longitudinal analysis of short-term postoperative complications over time during the COVID-19 pandemic in several Dutch hospitals
 - association of complication and outcomes of the diagnostic tools for COVID-19 in patients undergoing surgery
 - Determine best diagnostic strategy for COVID-19 in surgical patients (in acute and elective setting)
- **Methods/approach:** multicenter retrospective consecutive cohort study in which short-term surgical outcomes are studied. Additionally, determine whether or not patients are tested for COVID-19 along with the result of the diagnostic test
- **Contacts:** 5.1.2e

O25. POCUS: tool for increasing efficiency in diagnosing VTD in critically-ill COVID-19 patients, diagnostiek

- **Hypothese/Rationale:** Of de patiëntenlogistiek/diagnostische strategie bij COVID patiënten met een verdenking longembolie anders zou kunnen waarbij de logistiek, de hoeveelheid PBM en (de potentiële bijwerkingen van een) CT met contrast bespaard kunnen worden. Bij non-COVID patiënten wordt bij longembolie ook een (a)symptomatische DVT gezien tot een prevalentie tot 70%. De prevalentie longembolie bij COVID wordt op 31% geschat, derhalve als het klopt dat tot 70% een (a)symptomatische DVT heeft dan kunnen heel wat CT's/logistiek/PBM's bespaard worden. DVT's zouden we point-of-care kunnen diagnosticeren
- **Domein:** All patients with PCR confirmed COVID-19 with a clinically suspected pulmonary embolism
- **Vraagstelling:** to investigate whether point-of-care performed two-point compression ultrasonography of both legs reduces the need for computed tomography pulmonary angiogram in COVID-19 patients.
- **Methods/approach:** This is a single centre prospective observational study in COVID-19 PCR positive patients. If PE is clinically suspected, a point-of-care 2CUS of both legs is performed. If on 2CUS a not from wall to wall compressible vein or if an echogenic focus is present, DVT is diagnosed. A CTPA will be made nonetheless.
- **Contacts:** 5.1.2e

O26. Exploring the psychological effects of the COVID-19 measures in patients with a pre-existing psychiatric diagnosis, social science

Hypothese/rationale: Quarantine and (social) isolation in the context of an infectious disease outbreak are associated with negative psychological effects. People with a pre-existing psychiatric diagnoses may be more vulnerable for such effects, due to a higher susceptibility to stress compared to the general population.

Vraagstelling: To explore the effects of the COVID-19 measures on anxiety levels in people with pre-existing psychiatric disorders. If the sample sizes of subgroups allow it, comparisons on the severity of anxiety symptoms can be made between patients with different psychiatric diagnoses.

Domein: patients with a pre-existing psychiatric diagnosis

Approach/methode: online one-time survey

Contacts:

5.1.2e

O27. ML COVID: Machine learning voor het beloop en de behandeling van COVID-19 patiënten, predictie beloop

Hypothese/rationale: Met behulp van ruwe data kunnen we beter modellen maken ter predictie van uitkomsten.

Vraagstelling: Het doel van het onderzoek is om middels data van COVID-19 patiënten op Nederlandse intensive care afdelingen de behandelstrategieën te identificeren welke geassocieerd zijn met de beste uitkomsten. Daarnaast hopen we het beloop van COVID-19 bij patiënten te kunnen voorspellen. Op de intensive care worden grote hoeveelheden data routinematig vastgelegd in het elektronisch patiëntendossier, wat de uitgelezen mogelijkheid biedt om deze te analyseren met bestaande onderzoeksmethoden en Machine Learning. Het zal gaan om gepseudonimiseerde data (vitale parameters, lab, medicatie, beademingsinstellingen, etc), waarbij er geen naam, adres, woonplaats (NAW) en BSN informatie verstrekt wordt. Het patiëntnummer zal versleuteld worden.

Domein: Patiënten met COVID-19 op de ICUs in Nederland

Approach/methode: ruwe data aanlevering

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O28. P_{Ro}VENT: practise in ventilation in COVID-19 patients, predictie beloop

Hypothese/rationale: Invasive ventilation settings and parameters vary between intensive care units (ICUs) in hospitals in the Netherlands; certain ventilator settings have an independent association with duration of ventilation in COVID-19 patients.

Vraagstelling: Welke beademingsvoorwaarden zijn geassocieerd met een goede/slecht uitkomst?

Domein: beademde COVID-19 Patienten

Approach/methode: observationeel data onderzoek

Contacts:

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O29. COVID-Immune, prognostic and mechanistic immune phenotyping

Rationale: Hyperinflammation plays a role in the mortality of COVID patients

Hypothesis:

- 1) Inflammatory, cardiovascular, and/or metabolic plasma protein profiles have a prognostic value of late (inflammatory) complications.
- 2) Exhaustion of the adaptive immune response to COVID-19 leads to hyperinflammation.

Methods: Longitudinal follow-up study to monitor plasma protein profiles and T-cell responses in all patients that are hospitalized in the UMCU. Protein profiling is performed with Olink and Luminex, T-cell function with flow cytometry. .

Research questions:

1. Do plasma protein profiles at presentation at the SEH or ward predict clinical course?
2. What is the COVID-19 adaptive immune response over time, and how does it affect clinical outcome ?

Contacts:

5.1.2e

O30. TEMCO: Telemedicine bij herstellende COVID-19 patiënten, observationeel

Eerst haalbaarheid metingen, vervolgens RCT naar mogelijkheid COVID-19 patiënten eerder met ontslag te laten gaan, als ze thuis gevolgd worden met een vragenlijst via een telefoonapp, saturatiemeting en dagelijks videocontact.

Domein: Patiënten die opgenomen zijn geweest met COVID-19 en met ontslag naar huis gaan.

Vraagstelling: kunnen COVID-19 patiënten veilig 2 dagen eerder naar huis (als ziekenhuisverplaatste zorg) in combinatie met telemedicine? Wat is het effect hiervan op het welzijn van de patiënt?

Methods/approach:

Deel 1: haalbaarheid van app en saturatiemeting bij patiënten die met 'normaal' ontslag gaan
(Deel 2: pilot RCT vervroegd ontslag met telemedicine vs ontslag volgens huidige criteria)
(Deel 3: volledige RCT)

Contacts:

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O31. MB COVID: het bacteriële luchtweg microbioom in personen met COVID-19, predictiebeloop, klinisch beloop

Hypothese/rationale: Er is een groeiende hoeveelheid literatuur die een link legt tussen het microbioom in de (bovenste) luchtwegen, de activiteit van het immuunsysteem in de longen en de gevoeligheid voor virusinfecties.

Vraagstelling: Is de samenstelling van het microbioom in de luchtwegen van invloed is op de ernst van COVID-19 en heeft de samenstelling prognostische waarde.

Domein: personen positief getest voor Covid-19

Approach/methode: Microbiome profiling van neus/keel swabs, sputum en BAL (16S rDNA gene en metagenomic) van Covid-19 patienten en controles, correlatie met klinische data

Contacts:

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O32. IMPACT-EPIC, etiologie

- **Hypothese/rationale:** De coronapandemie heeft directe (COVID-19) en indirecte effecten op gezondheid (bv door stress). In prospectieve studies wordt gedetailleerde herhaalde informatie verzameld over mogelijke SARS-CoV-2 infecties, veranderingen in leefstijlpatronen, stress en mentale gezondheid.
- **Vraagstelling:**
 1. Welk exposoom factoren (leefstijl, voeding, omgeving, co-morbiditeit) spelen een rol in het klinisch verloop van COVID-19?
 2. Wat zijn de lange termijn gezondheidseffecten van de corona-epidemi door verandering in leefstijl, voeding, bewegen, stress en slaapgedrag?
- **Domein:** Deelnemers aan bestaande prospectieve studies (bv EPIC-NL, AMIGO, Nightingale, PIAMA)
- **Approach/methode:** Herhaalde digitale vragenlijsten

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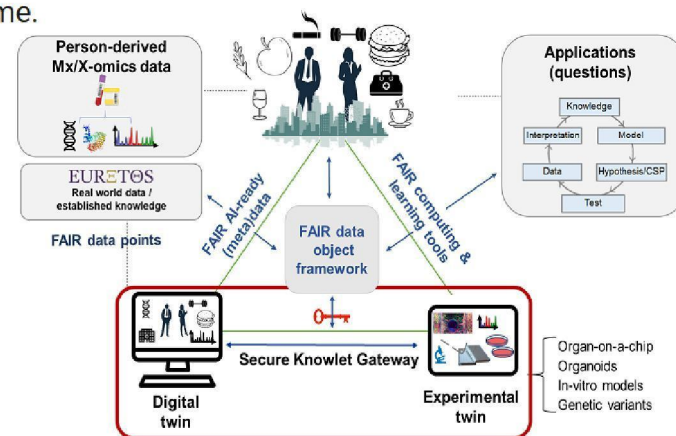
O33. META-COVID, metabolomics profiling and COVID-19, predictie beloop en mechanisme

- Hypothese/rationale:** The objective of this project is to predict which patients will develop severe symptoms and develop suitable interventions for patient subgroups. We will employ metabolomics profiling of COVID-19 patient blood in order to identify i) prognostic biomarkers, and ii) therapeutic targets for disease management, including prevention strategies, nutritional treatment and support.
- Methods:** we will measure about 5.000-7.000 metabolic profiles in COVID-19 patient plasma and about 1.000-1.500 profiles from organ-on-a-chip experiments. By combining the obtained metabolomics data with computational models and validating potential interventions in organ-on-a-chip models, we will evaluate and prioritize therapeutic interventions and allow stratification of patients for prediction and selection upon outcome.

- Exposome-NL Gravitation Programme

- Contacts:** [redacted] 5.1.2e

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O34. Impact van COVID-19 op gezinnen met kinderen met Spinale Musculaire Atrofie, social science

Kwalitatieve studie naar de impact van COVID-19 op gezinnen met kinderen met Spinale Musculaire Atrofie


- **Rationale/Hypothese:** Voor veel gezinnen is het normale dagelijks leven door de Covid-maatregelen een enorme uitdaging geworden. Voor gezinnen met een kind met een spierziekte was het dagelijks leven al zwaarder dan normaal door de uitdagingen die een spierziekte met zich meebrengt. Er is in deze gezinnen grote kans op verhoogde stress en problemen.
- **Domein:** gezinnen van kinderen met SMA type 1, 2 of 3
- **Vraagstellingen:** Wat is de impact van de coronacrisis op gezinnen van kinderen met SMA, en wat zijn hun ondersteuningsbehoeften?
- **Methods/approach:** Semi-gestructureerde interviews
- **Contacts:** [REDACTED]

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O35. COVID@HEART, predictie

Consequenties van COVID op gepresenteerde CVD morbiditeit

- **Rationale/Hypothese:** HVZ en CV risicofactoren leiden eerder tot een ongunstig beloop, echter diepgaand inzicht ontbreekt
- **Domein:** HVZ patiënten in de huisartspraktijk die mogelijk COVID19 hebben
- **Vraagstellingen:** Cardiovasculaire factoren voor ongunstig beloop (van thuis naar ziekenhuis) en cardiovasculaire complicaties als korte en lange termijn complicaties na ZH opname voor COVID19.
- **Methods/approach:** Predictie-onderzoek, case cohort design
- **Contacts:** 

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O36. Gevolgen van uitgesteld operatie bij IBD patiënten wegens COVID-19, predictieonderzoek

- **Hypothese/Rationale:**
- **Domein:** COVID-19 chirurgische patiënten
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts:**  5.1.2e

O37. Impact van COVID-19 op de kinderchirurgie, predictieonderzoek

Niet WMO retrospectieve studie naar de invloed van COVID-19 op de kinderchirurgie


- **Hypothese/Rationale:**
- **Domein:** COVID-19 chirurgische patiënten
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts:** 5.1.2e

O38. ISACS STEMI COVID-19, registry

- **Rationale/Hypothese:** to assess the effects of COVID-19 on the total number as well as outcome of patient presenting with a ST elevation myocardial infarction
- **Domein:** Patients presenting with a ST elevation myocardial infarction in the hospital
- **Methods/approach:** retrospective registry, March-April 2019 and March-April 2020
- **Contacts:** 5.1.2c 5.1.2e [@umcutrecht.nl](mailto:umcutrecht.nl)

O39. COVID-RED: COVID-19 infections - remote early detection

The COVID-RED project will combine expertise in clinical epidemiology with digital devices (such as wearables and mobile apps) to rapidly and reliably detect cases so that they can be prioritised for testing.

- **Rational/Hypothesis:** Early detection infection by re-purposed wearable that measures temperature (changes), perfusion and breath movements
- **Domain:** General population and risk groups
- **Reserach questions:** Can a wearable be promoted as an addition to the Corona-Check app for early detection of COVID infection by means of optimized algorithms?
- **Methods/approach:** Cohort study among 40000 randomly chosen individuals (oversampling risk groups) and 10000 random controls
- **Contacts:**  5.1.2e

International, multicentre, 9 partners from Denmark, Lithuania, the Netherlands, Switzerland, UK

O40. How antibodies and complement contribute to COVID-19 pathogenesis, pre-clinical

- **Rationale:** Excessive complement activation contributes to pathogenesis of COVID-19. High levels of C5a have been found in patients with severe disease outcome. Likely, C5a causes neutrophil influx to the lungs and ARDS. Promising results have been obtained with the off-label use of therapeutic complement inhibitors (Eculizumab).
- **Research questions:** Why does SARS-CoV2 infection cause strong complement activation? Is it induced by the virus? Or by antibodies that are produced in response to infection?
- **Methods/approach:** We will set-up fundamental studies to study molecular basis of complement activation by SARS-CoV2. We will study complement activation by SARS-CoV2 virions, virus-infected cells, pseudoviruses or purified SARS-CoV2 proteins. We will generate monoclonal antibodies against SARS-CoV2 for mechanistic studies.
- **Contacts:** [REDACTED]

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5.1.2e

O41. Delirium detectie op de IC met DeltaScan bij SARS-CoV-2 positieve patiënten,

- **Rationale/Hypothese:**
- **Domein:** 10-20 COVID-19 IC patiënten
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts!** 5.1.2e


O42. Feasibility analysis of an EU infrastructure for COVID-19 vaccine monitoring,

- **Rationale/Hypothese:**
- **Domein:**
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts:** 5.1.2e

O43. RECOVER- SOS-COVID, klinisch beloop- predictie

- **Rationale/Hypothese:** Observational study of SARS-CoV-2 disease in primary care across Europe
- **Domein:** Primary health care, 8 European countries
- **Vraagstellingen:** proportion of patients with respiratory tract infection presenting in primary care infected with SARS-CoV-2, risk factors for infection with SARS-CoV-2, risk factors for a complicated course of disease, course and impact of COVID managed in the community
- **Methods/approach:** Enrolling patients presenting with respiratory tract infection, swab for aetiology and patient follow-up for 28 days
- **Contacts:** 5.1.2e


O44. Point-prevalence audit survey (PPAS) Corona

- **Rationale/Hypothese:** Point-prevalence audit survey of respiratory tract infection during a time of widespread COVID-19 in European primary care
- **Domein:** Primary health care in 18 European countries
- **Vraagstellingen:** Management of patients with respiratory tract infection during COVID pandemic (testing, prescribed medication, provided advices), characteristics of the consultation, patients S&S, how often, why the general practitioner suspects COVID-19.
- **Methods/approach:** Registration of patient and consultation characteristics of patients presenting or phoning their general practitioner with symptoms of respiratory tract infection during COVID-19 pandemic.
- **Contacts:**  5.1.2e

O45. RECOVER Social Science Primary Care

- **Rationale/Hypothese:** A multinational qualitative study assessing healthcare professionals' and patients' experiences of primary care delivery in Europe during the COVID-19 pandemic
- **Domein:** Primary health care in 8 European countries
- **Vraagstellingen:** Experiences with providing and receiving primary health care during the pandemic.
- **Methods/approach:** Interviews (30-40 min) with 10 patients and 10 general practitioners per country.
- **Contacts:** 5.1.2e

O46. Validation national Corona Check app

- **Rationale/Hypothese:**
- **Domein:**
- **Vraagstellingen:**
- **Methods/approach:**
- **Contacts:**  5.1.2e

047 PRO-COVID-19

- **Rationale/Hypothese:** Observational study on long-term consequences of more severe COVID-19 infections (complicated respiratory tract infections), in patients managed in general practice, physically as well as psychologically and risk factors of a worse outcome of disease
- **Domein:** patients managed in general practice with complicated respiratory tract infections
- **Vraagstellingen:** long-term consequences of more severe COVID-19 infections (complicated respiratory tract infections), physically as well as psychologically and risk factors of a worse outcome of disease
- **Methods/approach:** observational cohort study
- **Contacts:** 5.1.2e

O48. LEAP-2

- **Rational/Hypothesis:** The proposed semi-structured interview study will set out to explore the nature, aspect and key features of supervision and interprofessional collaboration among health care professionals redeployed on Covid-19 ICUs and what preparation is needed to be instantly re-deployable. In addition, health care workers in management and/or leadership positions will be interviewed on their outlook and decisions resulting in the redeployment of alternative health care professionals to the ICU.
- **Domein:** 40-60 redeployed ICU health care workers per site (Utrecht and Dublin)
- **Research questions:**
 - Supervision: how adequate was the supervision? have individuals been placed in a position to provide supervision to others? what recommendations can be given for future outbreaks?
 - Interprofessional collaborative practice: How successful was this collaboration at the hight of the local outbreak? What lessons can help prepare for future outbreaks and for IPC in regular health care conditions?
 - Management: Which managerial decisions were conducive to effective health care work on the COVID-19 ICUs? Which were counterproductive? What lessons can be learned for health care under regular conditions.
- **Methods/approach:** international, prospective, semi-structured interview study performed by two anaesthesiology residents amongst redeployed health care workers who worked at the Covid-19 ICUs at University Medical Center Utrecht, the Netherlands, and two Dublin hospitals
- **Contacts:** 5.1.2e

O49. COVID PREDICT D, beloop en prognose

- **Rationale/Hypothese:** Inzicht in prognose/beloop van COVID-19 in immuungecompromitteerde patiënten en in factoren die de prognose bepalen.
- **Domein:** Patiënten met reumatologische/immunologische/inflammatoire aandoening, immuundeficiënties of immuunsuppressieve behandeling
- **Vraagstellingen:**
 - Wat is de klinische uitkomst (overlijden, IC-opname, etc) van immuungecompromiteerde COVID-19 patiënten vergeleken met patiënten zonder deze comorbiditeit?
 - Welke prognostische factoren zijn geassocieerd met een betere danwel slechtere uitkomst bij immuungecompromiteerde patiënten ten opzichte van patiënten zonder deze comorbiditeit?
- **Methods/approach:** descriptieve analyse en moderne technieken als predictive mean matching en of (ML) predictieve modellen

- **Contacts:**

5.1.2e

Landelijke studie

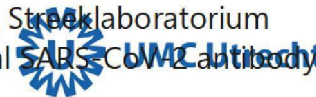


O50. Distribution of SARS-CoV-2 in secondary schools and the role of indoor climate, transmission

- **Rational/Hypothesis:**
- **Aim:**
- **Domain:**
- **Methods/approach:**
- **Contacts:** 5.1.2e

O51. SARSLIVA, diagnostics

- **Rational/Hypothesis:** If we can use saliva for early detection of SARS-CoV-2, and at low viral loads in the course of infection, containment of viral spread is made easier and allows for improved policies in this pandemic.
- **Aim:** utility of saliva in diagnosis, detecting co-infections, and evaluating household transmission in COVID-19
- **Domain:** confirmed COVID-19 patients and household members
- **Methods/approach:**
 1. Follow confirmed COVID-19 patients with home self -sampling of saliva for 4-6 weeks and at least two weeks after symptoms have stopped.
 2. Follow household members for 4-6 weeks to detect potentially pre-symptomatic and a-symptomatic SARS-CoV-2 infected individuals.
 3. Follow emerging IgA and IgG anti-SARS-COV-2 antibodies in saliva over time
 4. Detect other respiratory viruses present in relation to symptoms of infection.
- **Contacts:** 5.1.2e (dKIND/RIVM), 5.1.2e (Sparne Gasthuis). The study is a close collaboration between the Spaarne hospital, Streeklaboratorium Haarlem, and the RIVM where viral diagnostics will be performed and mucosal SARS-CoV-2 antibody emergence.



We strive to learn from every COVID-19 patient!

Through multidisciplinary collaboration we realize high-quality research...

... to improve the treatment of COVID-19 patients or prevent infection.

Conclusion — Prediction models for covid-19 are quickly entering the academic literature to support medical decision making at a time when they are urgently needed.

Prediction models for covid-19: a rapid appraisal This review indicates that proposed models are poorly reported, at high risk of bias, and their reported performance is probably optimistic.

Immediate sharing of well documented individual participant data from covid-19 studies is needed for collaborative efforts to develop more rigorous prediction models and validate existing ones.

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