Blood Donors as a Sentinel Population
– *preparing for the next pandemic*

Christian Erikstrup
Chair Professor, Consultant
Head of Blood Production
Department of Clinical Immunology
Aarhus University Hospital

AARHUS UNIVERSITY

The Danish Blood Donor Study

Blood donation and transfusion

Globally, 119 million blood donations take place annually (WHO)

Transfusion is a life saving intervention – a necessity in a well-functioning health care system

Blood donor surveillance and preparedness for the next pandemic



Overview

Historic examples - transfusion medicine generate new knowledge about infections

Pros and cons of blood donors for surveillance

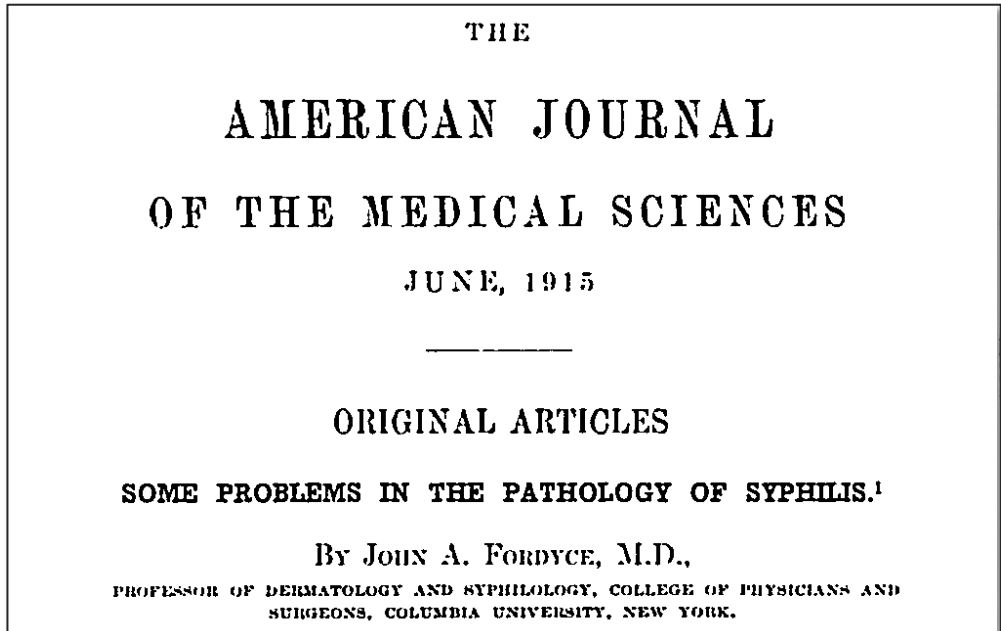
Examples of blood donor surveillance during the current pandemic

Preparing for the next pandemic

Transfusion-transmitted infectious diseases

- Syphilis was described in 1494 in Naples, Italy as a new disease.
- The disease was soon reported to have spread to several parts of Europe.
- Early in the history of transfusion medicine, in 1915, syphilis was the first reported transfusion-transmitted infectious disease.





THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

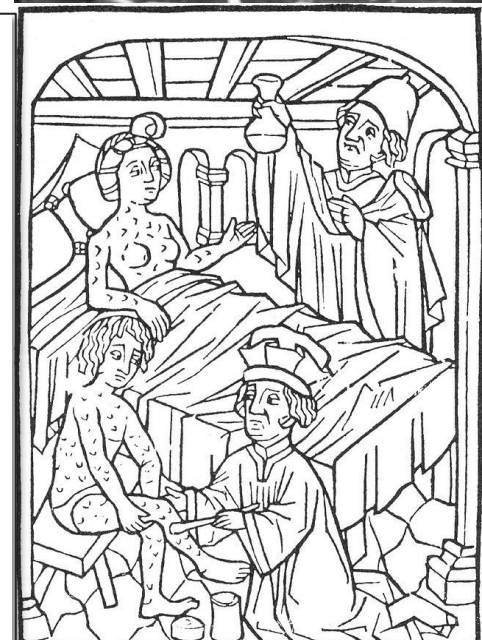
JUNE, 1915

ORIGINAL ARTICLES

SOME PROBLEMS IN THE PATHOLOGY OF SYPHILIS.[1]

By John A. Fordyce, M.D.,

PROFESSOR OF DERMATOLOGY AND SYPHILOGY, COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY, NEW YORK.



Hepatitis B

The Growth of Knowledge About a Disease: Hepatitis

PAUL B. BEESON, M.D.

September 1979 The American Journal of Medicine

From 1883 and on:

Jaundice reported after injections of serum or after transfusion

Incubation time several weeks – thus longer than for food-borne hepatitis

WWII: 50,000 soldiers infected through yellow fever vaccine containing small amounts of human serum

The search for the Australia Antigen in transfusion recipients led to the discovery of HBV

A Serum Antigen (Australia Antigen) in Down's Syndrome, Leukemia, and Hepatitis

BARUCH S. BLUMBERG, M.D., D.PHIL., F.A.C.P., BETTY JANE S. GERSTLEY, M.D., DAVID A. HUNGERFORD, PH.D., W. THOMAS LONDON, M.D., and ALTON I. SUTNICK, M.D., F.A.C.P.

Philadelphia, Pennsylvania

Annals of Internal Medicine

In recent years we have increased our knowledge about occult HBV

Persistent Hepatitis B Virus Infection in Subjects Without Hepatitis B Surface Antigen: Clinically Significant or Purely "Occult"?

CHRISTIAN BRÉCHOT, VALÉRIE THIERS, DINA KREMSDORF, BERTRAND NALPAS, STANISLAS POL, AND PATRIZIA PATERLINI-BRÉCHOT

HEPATOLOGY Vol. 34, No. 1, 2001

Blood-borne hepatitis and behaviour

Risk of transfusion-transmitted hepatitis was early on recognised to depend on the selection of donors.

Transfusion medicine thus helped to understand how behaviour was associated with risk of blood-borne diseases

Table 1.—Incidence of Hepatitis Among Patients Receiving Blood From Commercial or Volunteer Sources

	Group C, Commercial	Group V, Volunteer
Total patients	82	28
Total with hepatitis	42 (51%)*	0*
Icteric cases	13 (16%)	0
Anicteric cases	29 (35%)	0
Mortality	1 (1%)	0

*P <0.001.

Post-transfusion Hepatitis After Open-Heart Operations: Incidence After the Administration of Blood From Commercial and Volunteer Donor Populations. Walsh et al. JAMA. 1970

Hepatitis C

ASH 50th anniversary review

The hazards of blood transfusion in historical perspective

*Harvey J. Alter[1] and *Harvey G. Klein[1]

BLOOD, 1 OCTOBER 2008 • VOLUME 112, NUMBER 7

The existence of another hepatitis causing agent was learned from transfusion medicine.

TRANSFUSION-ASSOCIATED HEPATITIS NOT DUE TO VIRAL HEPATITIS TYPE A OR B

STEPHEN M. FEINSTONE, M.D., ALBERT Z. KAPIKIAN, M.D., ROBERT H. PURCELL, M.D.,
HARVEY J. ALTER, M.D., AND PAUL V. HOLLAND, M.D.

THE NEW ENGLAND JOURNAL OF MEDICINE April 10, 1975

"It seems likely that at least a proportion of such antigen-negative transfusion-associated hepatitis is caused by other infectious agents, not yet identified."

WORKSHOP III

Transfusion-Associated Non-A, Non-B Hepatitis: An Assessment of the Causative Agent and Its Clinical Impact

Harvey J. Alter and Alfred M. Prince

Pneumocystis Pneumonia --- Los Angeles

In the period October 1980-May 1981, 5 young men, all active homosexuals, were treated for biop
patients died. All 5 patients had laboratory-confirmed previous or current cytomegalovirus (CMV)

Patient 1: A previously healthy 33-year-old man developed *P. carinii* pneumonia and oral mucosal
and CMV viruria. The serum complement-fixation CMV titer in October 1980 was 256; in may 19
sulfamethoxazole (TMP/SMX), pentamidine, and acyclovir. He died May 3, and postmortem exan

Patient 2: A previously healthy 3
seroconversion to CMV, i.e., an
candidiasis. His pneumonia resp

Patient 3: A 30-year-old man wa
pneumonia that responded to TM
was 8. Material from an esophag

Patient 4: A 29-year-old man de
after being given intravenous TM

Patient 5: A previously healthy 3
was found to have *P. carinii* pne
been limited because of a sulfa-i

The diagnosis of *Pneumocystis* p
sexual partners who had had sim
patients had profoundly depresse

Reported by MS Gottlieb, MD, HM Schanker, MD,

AN OUTBREAK OF COMMUNITY-ACQUIRED *PNEUMOCYSTIS CARINI*

Initial Manifestation of Cellular Immune Dysfunction

HENRY MASUR, M.D., MARY ANN MICHELIS, M.D., JEFFREY B. GREENE, M.D., ID
. HOLZMAN, M.D., GARY W
I.D., HENRY W. MURRAY,
-RUNDLES, PH.D.

d another had angioimmun
y. Eight patients died. In th
gnosis of an immunosuppr
lished, despite persistence
ese cases of pneumocystos
nce of cell-mediated immur
se against *P. carinii*. The oc
n among drug abusers and
t these groups may be at
ction. (N Engl J Med. 1981;

New Testing Strategy to Detect Early HIV-1 Infection for Use in Incidence Estimates and for Clinical and Prevention Purposes

Robert S. Janssen, MD; Glen A. Satten, PhD; Susan L. Stramer, PhD; Bhupat D. Rawal, PhD;
Thomas R. O'Brien, MD, MPH; Barbara J. Weiblen, MS; Frederick M. Hecht, MD; Noreen Jack, MBBS, MPH;
Farley R. Cleghorn, MD, MPH; James O. Kahn, MD; Margaret A. Chesney, PhD; Michael P. Busch, MD, PhD

JAMA, July 1, 1998—Vol 280, No. 1

Curr

Between June 1, 1981, and September 15, 1982, CDC received reports of 593 cases of acquired immune deficiency syndrome (AIDS). Death occurred in 245 cases (41%).

Analysis of reported AIDS cases shows that 51% had Pneumocystis carinii pneumonia (PCP) without Kaposi's sarcoma (KS) (with or without other "opportunistic" infections (OOI) predictive of immunodeficiency); 30% had KS without PCP (with or without OOI); 7% had both PCP and KS (with or without OOI); and 12% had OOI with neither PCP nor KS. The overall mortality rate for without KS (47%) was more than twice that for cases of KS without PCP (21%), while the rate for cases of both PCP and KS (68%) was more than three times as great. The mortality rate for OO KS nor PCP was 48%.

The incidence of AIDS by date of diagnosis (assuming an almost constant population at risk) has roughly doubled every half-year since the second half of 1979 (Table 1). An average of one to tw diagnosed every day. Although the overall case-mortality rate for the current total of 593 is 41%, the rate exceeds 60% for cases diagnosed over a year ago.

Almost 80% of reported AIDS cases in the United States were concentrated in six metropolitan areas, predominantly on the east and west coasts of the country (Table 2). This distribution was not reflection of population size in those areas; for example, the number of cases per million population reported from June 1, 1981, to September 15, 1982, in New York City and San Francisco was times greater than that of the entire country. The 593 cases were reported among residents of 27 states and the District of Columbia, and CDC has received additional reports of 41 cases from 10 f

Other infections where transfusion medicine/blood donors help with surveillance

West Nile Virus

Zika virus

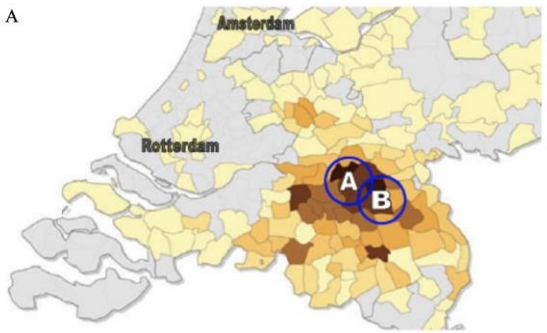
Hepatitis E

Coxiella burnetti

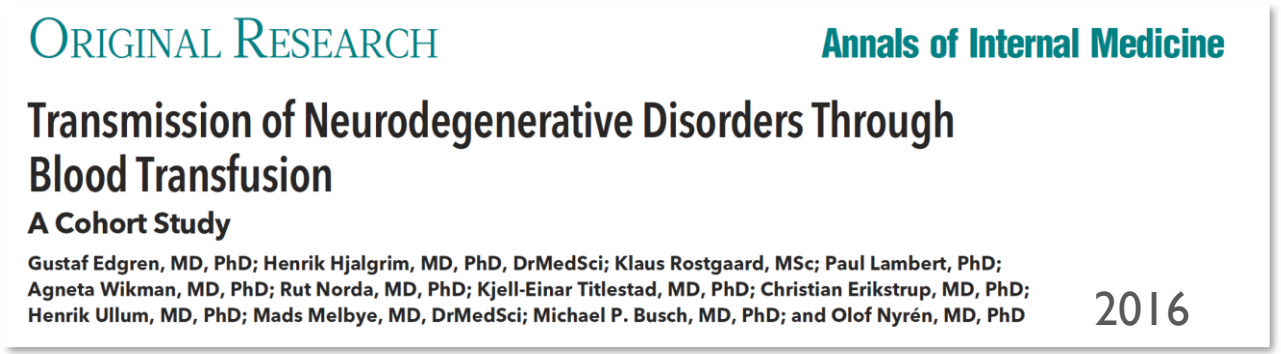
TRANSFUSION COMPLICATIONS

Screening of blood donors for chronic *Coxiella burnetii* infection after large Q fever outbreaks

Ed Slot,[1] Boris M. Hogema,[1] Michel Molier,[1] and Hans L. Zaaijer[1,2]



The Scandinavian Transfusions and Donations database



ORIGINAL RESEARCH

Annals of Internal Medicine

Transmission of Neurodegenerative Disorders Through Blood Transfusion

A Cohort Study

Gustaf Edgren, MD, PhD; Henrik Hjalgrim, MD, PhD, DrMedSci; Klaus Rostgaard, MSc; Paul Lambert, PhD; Agneta Wikman, MD, PhD; Rut Norda, MD, PhD; Kjell-Einar Titlestad, MD, PhD; Christian Erikstrup, MD, PhD; Henrik Ullum, MD, PhD; Mads Melbye, MD, DrMedSci; Michael P. Busch, MD, PhD; and Olof Nyrén, MD, PhD

2016

1.5 mill. patients who received transfusions between 1968 and 2012

Patients with a diagnosis of dementia of any type, Alzheimer disease or Parkinson disease after transfusion were identified in Swedish and Danish registers:

- Hazard ratios were calculated for donors with later disease and compared with healthy donors with regard to recipient risk.

No evidence for transmission of dementia was found – thus no evidence for a transmissible agent.

Control of the method: Transmission of chronic hepatitis before and after implementation of hepatitis C virus screening.

Good example how large studies with strong statistical power can give strong answers even though the findings are negative.

The Danish Blood Donor Study - research using blood donors

Pre-existing *Toxoplasma gondii* antibodies increases risk of schizophrenia and traffic accidents

Contents lists available at ScienceDirect

Brain, Behavior, and Immunity

journal homepage: www.elsevier.com/locate/ybrbi

Full-length Article

Large-scale study of *Toxoplasma* and Cytomegalovirus shows an association between infection and serious psychiatric disorders

Burgdorf et al

Clinical Epidemiology

Dovepress
open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Cohort description: The Danish Blood Donor *Staphylococcus aureus* Carriage Study

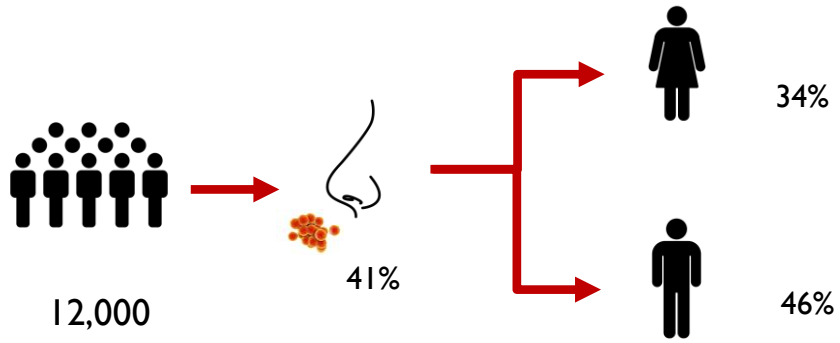
This article was published in the following Dove Press journal:
Clinical Epidemiology

Lise Tornvig Erikstrup[1,*]
Khoa Manh Dinh[2,*]
Paal Skytt Andersen[3,4]
Robert Leo Skov[3]
Kathrine Agergård Kaspersen[2]
Kaspar René Nielsen[5]
Svend Ellermann-Eriksen[1]
Christian Erikstrup[2]

Purpose: *Staphylococcus aureus* carriage poses an increased risk of *S. aureus* infection. The aim of this study was to investigate the colonization of *S. aureus* among healthy individuals and to establish a prospective cohort and biobank for research in the health consequences of colonization.

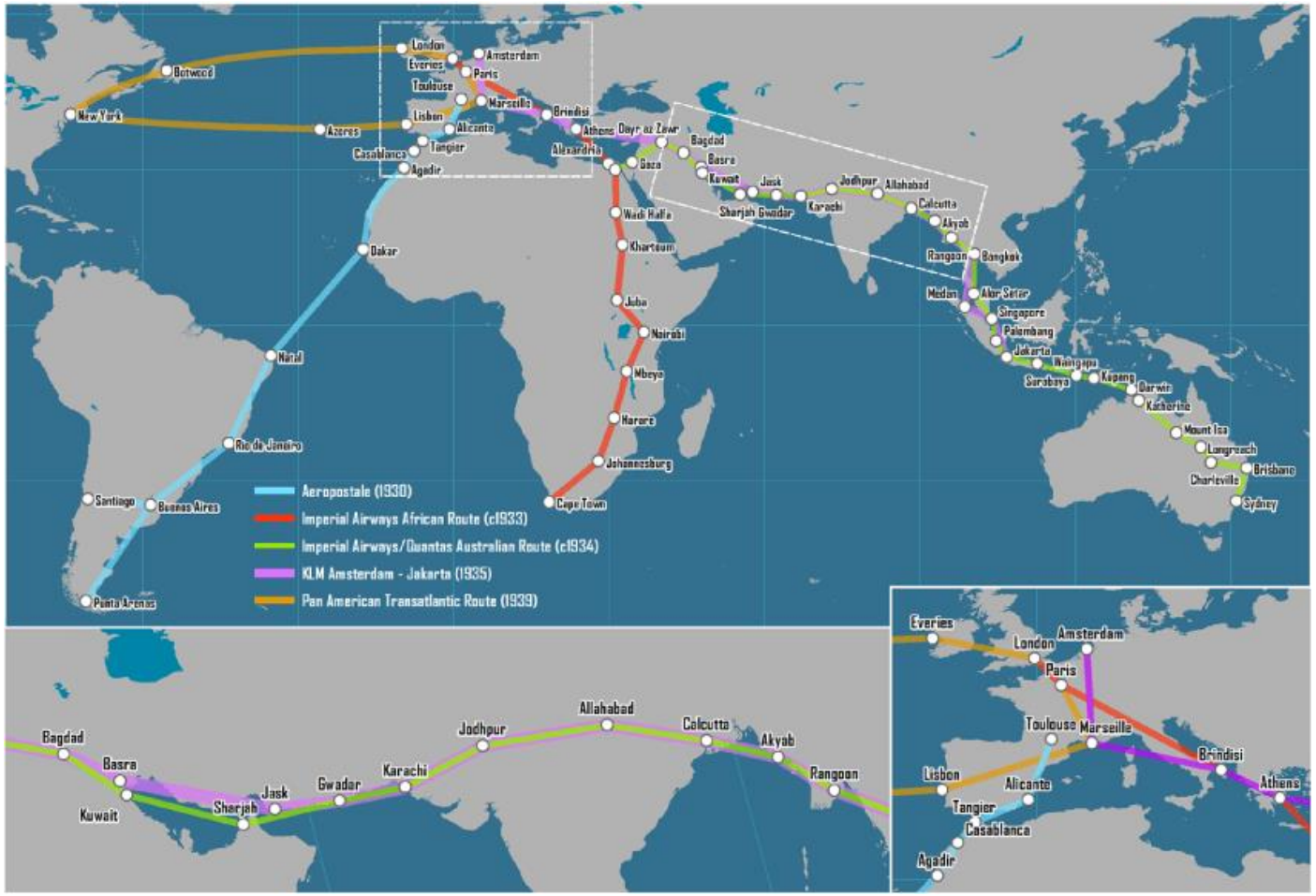
Population and methods: The Danish Blood Donor *S. aureus* Carriage Study (DBDSaCS) was established in 2014. So far, a total of 6082 healthy participants have been included with nasal swabs and repeated swabs are performed at subsequent donations. Samples from the first 2217 participants were cultured using a two-step method to evaluate the effect of using enrichment broth. Furthermore, 262 participants were sampled from both the nares and the throat. All participants completed a questionnaire with self-reported health, anthropometric



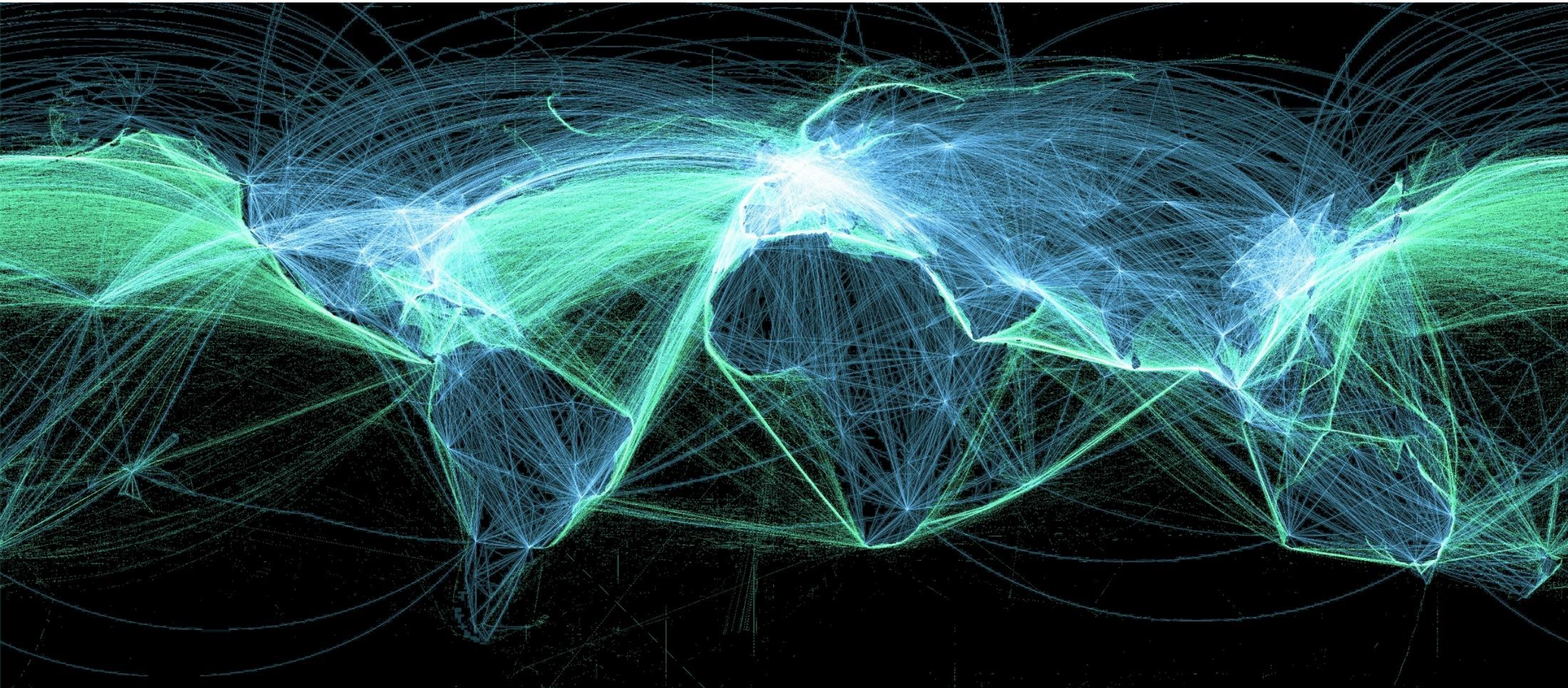


Det Danske Bloddonorstudie

The number of new diseases is increasing



The number of new diseases is increasing



Blood donors and surveillance

Blood donors have helped us learn about infectious diseases for the past 100 years

What we propose to do now is to formalize the monitoring of blood donors

Why use blood donors for surveillance?

What we want for surveillance:

- Screen a population or a subset of a population for an infection (antigen, antibody, molecular tests…)
- The population must be well-defined
- The participation rate must be high
- The infection studied must be relatively frequent and the incidence/prevalence must mirror the background population
- The population must be constant over time

What we have:

- Blood donors comprise a large subset of the population
- Blood donations take place worldwide and are geographically well distributed
- The blood bank infrastructure is well-suited for large-scale population studies

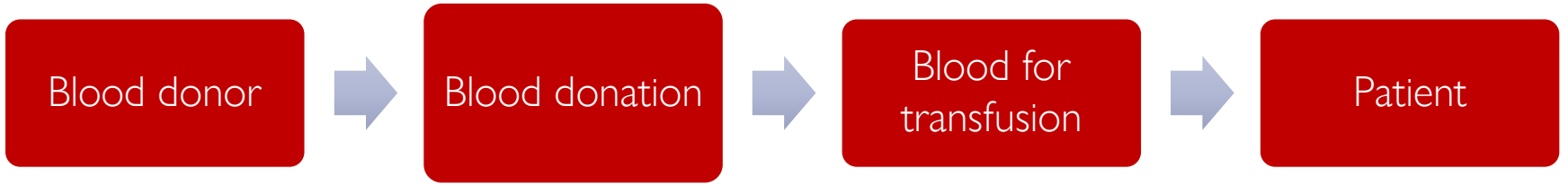


Blood bank infrastructure supports the implementation of large scale surveillance studies

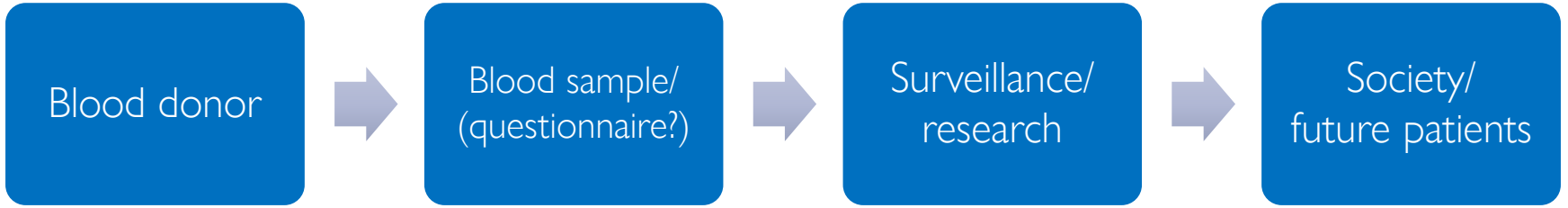
✔ Access to participants:	Thousands of blood donors come to us every day
✔ Collection sites:	Blood donation facilities or blood drives are many and geographically well distributed
✔ Educated staff:	Nurses, technicians, physicians, public relations experts
✔ Transportation:	Samples and blood collections from each donation are sent to central lab one or more times per day
✔ Laboratories:	Sample handling and analysis
✔ Storage Facilities:	Cold stores are often available

Are donors willing to participate?
Donors want to participate in research projects: Participation rate >95%

Help current patients



Help the society and future patients



Blood donors as a sentinel population

Sentinel Surveillance

Monitoring of rate of occurrence of specific conditions to assess the stability or change in health levels of a population. It is also the study of disease rates in a specific cohort such as in a geographic area or population subgroup to estimate trends in a larger population. (From Last, Dictionary of Epidemiology, 2d ed)

Using blood donor testing for emerging infectious disease sentinel surveillance

We will use SARS-CoV-2 as an example

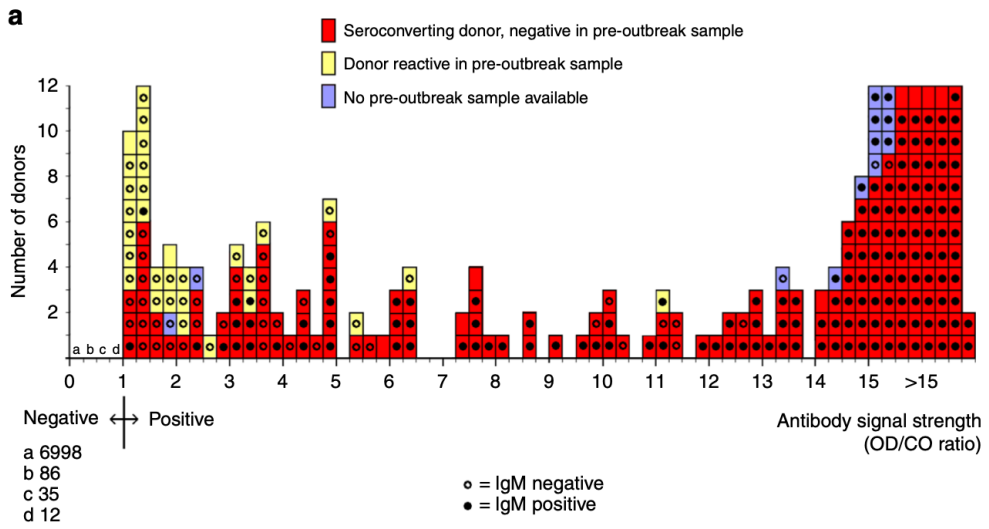
Examples of knowledge gained from SARS-CoV-2 seroprevalence studies

Early in the epidemic in the Netherlands:

Seroprevalence in blood donors

Using archive samples to ascertain seroconversion

– Unique feature of blood donor biobanks: sequential blood samples



nature COMMUNICATIONS

ARTICLE

Check for updates

https://doi.org/10.1038/s41467-020-19481-7 OPEN

Low SARS-CoV-2 seroprevalence in blood donors in the early COVID-19 epidemic in the Netherlands

Ed Slot[1,2,12✉], Boris M. Hogema[1,3,12], Chantal B. E. M. Reusken[4,5], Johan H. Reimerink[4], Michel Molier[1], Jan H. M. Karregat[6], Johan IJlst[7], Věra M. J. Novotný[8], René A. W. van Lier[9,10] & Hans L. Zaaijer[1,3,11✉]

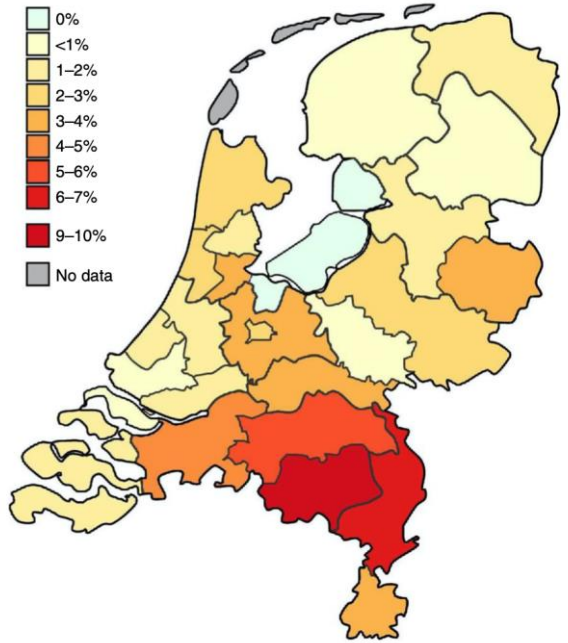


Fig. 2 SARS-CoV-2 seroprevalence in the Dutch blood donor population by municipal health service region; 1–15 April 2020. The map shows the Netherlands divided into municipal health service regions. The backbone of the map was provided by the Dutch Institute for Public Health and the Environment.

Donor Study

Are donors representative?
The Healthy Donor Effect (HDE)

In SCANDAT:

All cause mortality among blood donors is 30% lower than in the background population

The mortality is even lower among frequently donating donors - Explanation:

Blood donors are healthy - therefore they donate

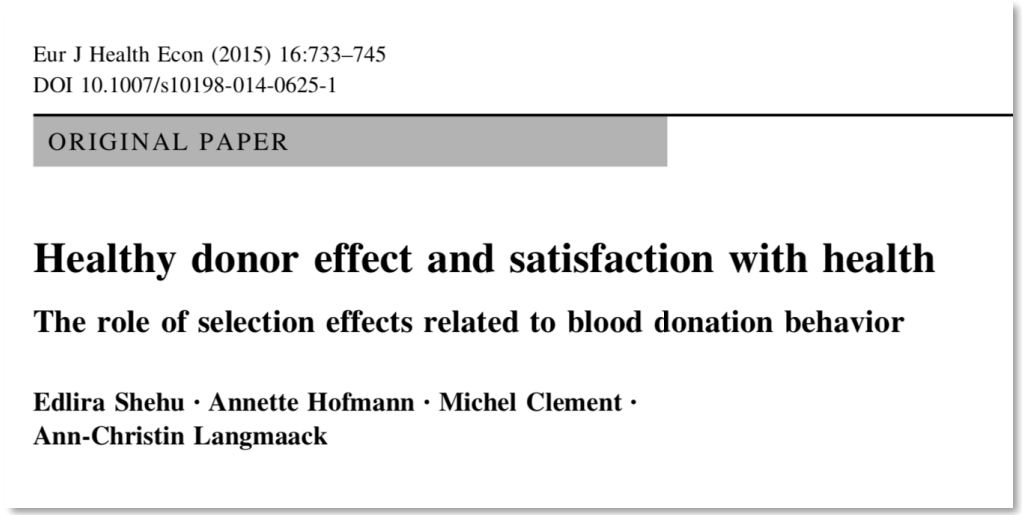
HDE is a selection bias analogous to the Healthy Worker Effect


BLOOD DONORS AND BLOOD COLLECTION

Healthy donor effect: its magnitude in health research among blood donors

Femke Atsma, Ingrid Veldhuizen, André Verbeek, Wim de Kort, and Femmie de Vegt

TRANSFUSION Volume 51, August 2011


Eur J Health Econ (2015) 16:733–745
DOI 10.1007/s10198-014-0625-1

ORIGINAL PAPER

Healthy donor effect and satisfaction with health

The role of selection effects related to blood donation behavior

Edlira Shehu · Annette Hofmann · Michel Clement · Ann-Christin Langmaack


TRANSFUSION MEDICINE Official Journal of the British Blood Transfusion Society

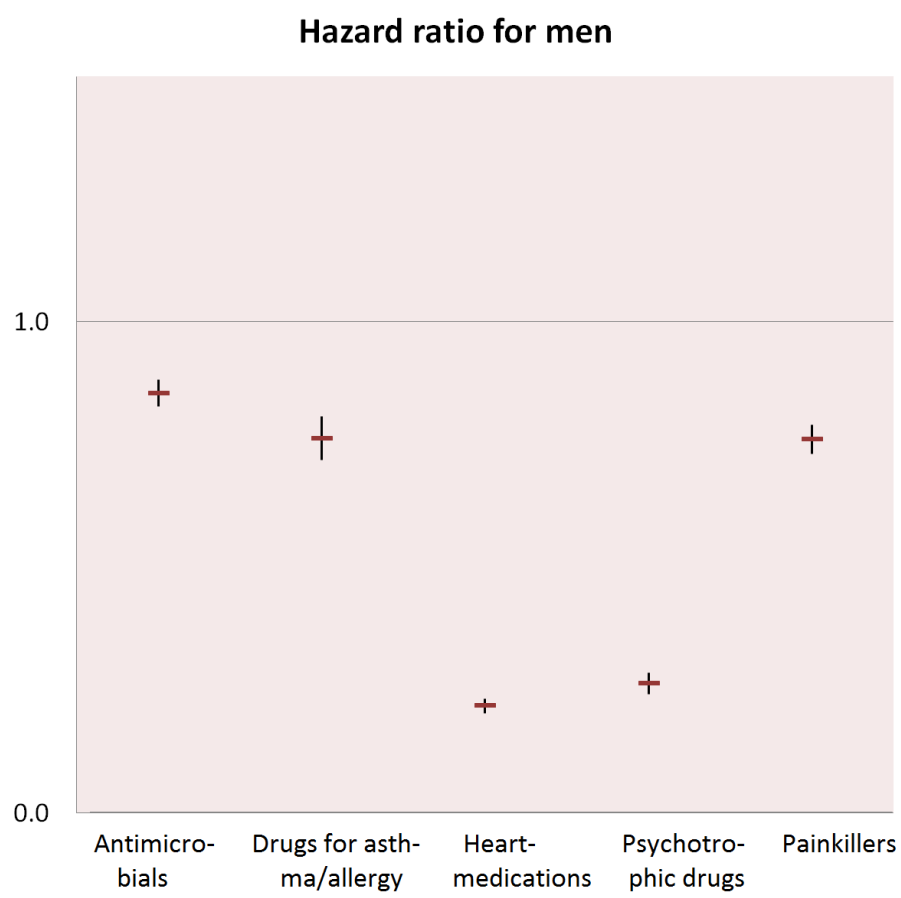
British Blood Transfusion Society

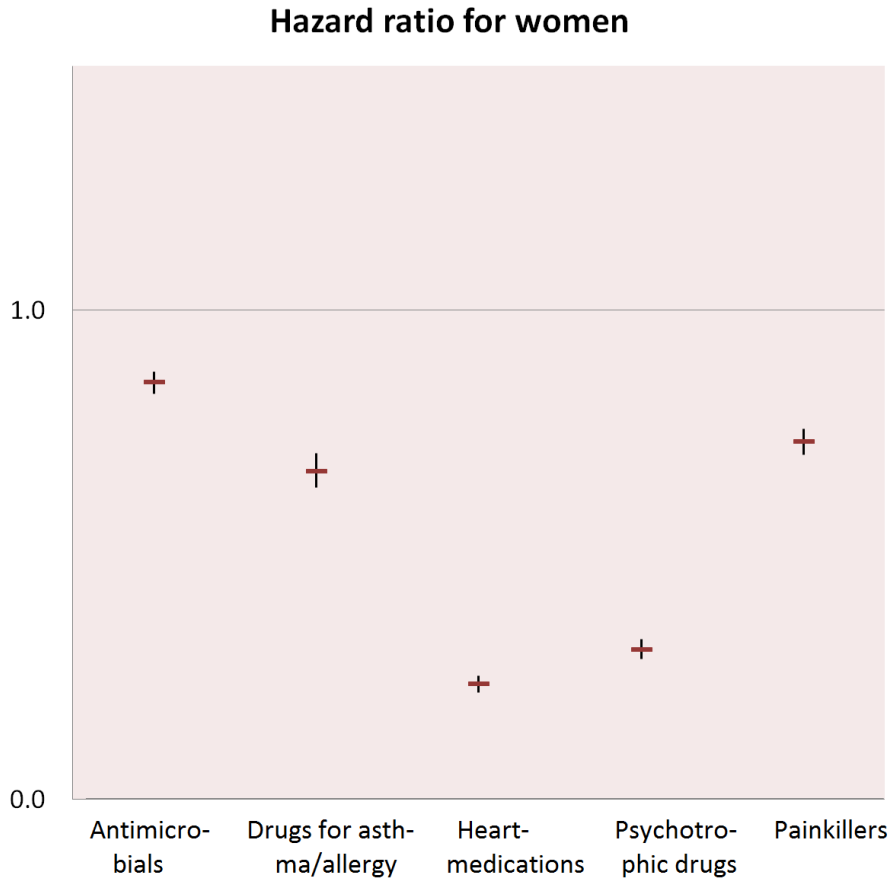
Transfusion Medicine | SHORT COMMUNICATION

The healthy donor effect impacts self-reported physical and mental health – results from the Danish Blood Donor Study (DBDS)

A. S. Rigas,[1] A. Skytthe,[2] C. Erikstrup,[3] K. Rostgaard,[4] M. S. Petersen,[3] H. Hjalgrim,[4,5] H. Ullum,[1] K. O. Kyvik[6,7] & O. B. Pedersen[8]

Donors are healthy – are they protected from infections?
The healthy donor effect – incidence of infections among blood donors





Seroprevalence surveys in the background population:

Research Letter ONLINE FIRST FREE

May 18, 2020

Seroprevalence of SARS-CoV-2–Specific Antibodies Among Adults in Los Angeles County, California, on April 10-11, 2020

Neeraj Sood, PhD[1]; Paul Simon, MD[2]; Peggy Ebner, BA[3]; et al

» Author Affiliations | Article Information

JAMA. Published online May 18, 2020. doi:10.1001/jama.2020.8279

LA County residents

1,952 randomly picked individuals invited; 865 (50.9%) were tested

In Denmark: Official seroprevalence survey with random invitations of citizens

Participation rate

May 2020: 47%

September: 33%

December: 25%

Only a limited number of sites existed. Random selection limited by distance to test-site.

Risk of change of population over time.

Hard to foresee the direction of the selection bias in the background population:

If you know you have been infected – are you more likely to report for antibody test?

Blood donors:

Intense hype may be an incentive to donate (April 2020)

The blood donor population – constant over time?

Infection fatality rate

Using register-based COVID-19 mortality for 17-69-year old Danes and calculating the infection fatality rate based on seroprevalence in current donors (17-69 years):

89/100,000 infections

Infection fatality rate based on seroprevalence in retired donors (>69 years):

500/100,000 infections

Clinical Infectious Diseases

MAJOR ARTICLE

Estimation of SARS-CoV-2 Infection Fatality Rate by Real-time Antibody Screening of Blood Donors

Christian Erikstrup,[1,2] Christoffer Egeberg Hother,[3] Ole Birger Vestager Pedersen,[4] Kåre Mølbak,[5] Robert Leo Skov,[5] Dorte Kinggaard Holm,[6] Susanne Gjørup Sækmose,[4] Anna Christine Nilsson,[6] Patrick Terrence Brooks,[3] Jens Kjærgaard Boldsen,[1,2] Christina Mikkelsen,[3,7] Mikkel Gybel-Brask,[3] Erik Sørensen,[3] Khoa Manh Dinh,[1,2] Susan Mikkelsen,[1,2] Bjarne Kuno Møller,[1,2] Thure Haunstrup,[8] Lene Harritshøj,[3] Bitten Aagaard Jensen,[8] Henrik Hjalgrim,[9] Søren Thue Lillevang,[6] and Henrik Ullum[3]

[1]Department of Clinical Immunology, Aarhus University Hospital, Aarhus, Denmark, [2]Department of Clinical Medicine Aarhus University, Aarhus, Denmark, [3]Department of Clinical Immunology, Copenhagen University Hospital, Copenhagen, Denmark, [4]Department of Clinical Immunology, Zealand University Hospital, Naestved, Denmark, [5]Infection Control, Statens Serum Institut, Copenhagen, Denmark, [6]Department of Clinical Immunology, Odense University Hospital, Odense, Denmark, [7]Novo Nordisk Foundation Center for Basic Metabolic Research, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark, [8]Department of Clinical Immunology, Aalborg University Hospital, Aalborg, Denmark, and [9]Department of Epidemiology Research, Statens Serum Institut, Copenhagen, Denmark

Clinical Infectious Diseases

MAJOR ARTICLE

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection Fatality Rate Among Elderly Danes: A Cross-sectional Study on Retired Blood Donors

Ole Birger Pedersen,[1,2] Janna Nissen,[3] Khoa Manh Dinh,[4] Michael Schwinn,[3] Kathrine Agergård Kaspersen,[4,5] Jens Kjærgaard Boldsen,[4,5] Maria Didriksen,[3] Joseph Dowsett,[3] Erik Sørensen,[3] Lise Wegner Thørner,[3] Margit Anita Hørup Larsen,[3] Birgitte Grum-Schwensen,[1] Susanne Sækmose,[1] Isabella Worlewenut Paulsen,[1] Nanna Lond Skov Frisk,[1] Thorsten Brodersen,[1] Lasse Skafte Vestergaard,[6] Klaus Rostgaard,[7] Kåre Mølbak,[6] Robert Leo Skov,[6] Christian Erikstrup,[4,a] Henrik Ullum,[2,3,a] and Henrik Hjalgrim[2,7,8,a]

High seroprevalence in Kenyan donors

By July 2020, only 20,636 cases and 341 deaths were reported in Kenya.

The adjusted national seroprevalence was 4.3% (95% confidence interval: 2.9 to 5.8%)

"Kenya has an estimated population of 53 million in 2020, and 57% of the population is aged 15 to 64 years. If the transfusion donor seroprevalence of 4.3% was applied to all 15- to 64-year-olds, it would suggest approximately 1.3 million infections."

Very low infection fatality rate

Underreporting from hospitals is probable but the healthcare system was not overwhelmed.

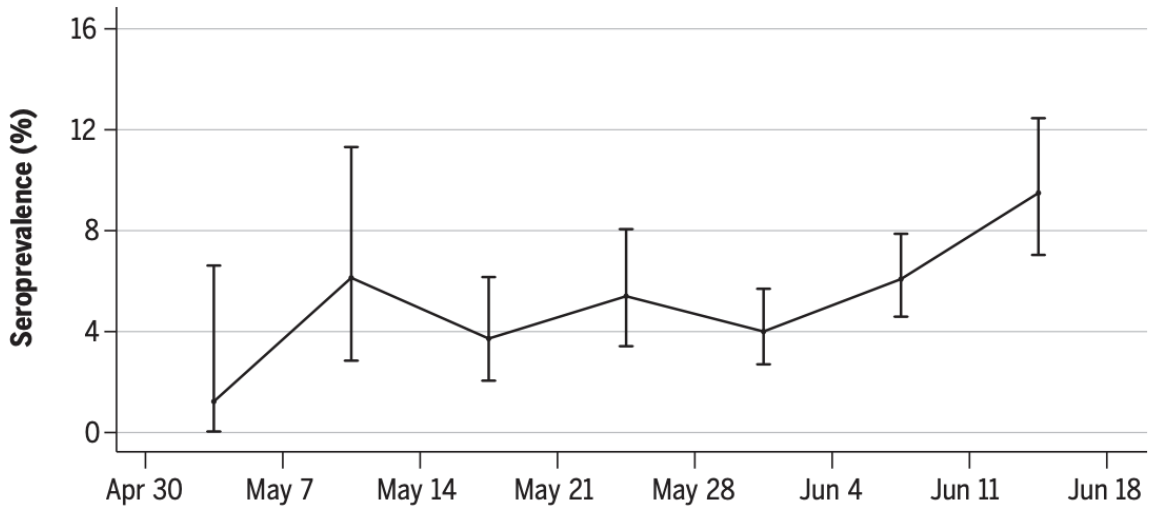
Possible explanation:

3.9% of the population is aged 65 years or older

Seroprevalence of anti–SARS-CoV-2 IgG antibodies in Kenyan blood donors

Sophie Uyoga[1]*†, Ifedayo M. O. Adetifa[1,2]†, Henry K. Karanja[1]†, James Nyagwange[1]†, James Tuju[1], Perpetual Wanjiku[1], Rashid Aman[3], Mercy Mwangangi[3], Patrick Amoth[3], Kadondi Kasera[3], Wangari Ng'ang'a[4], Charles Rombo[5], Christine Yegon[5], Khamisi Kithi[5], Elizabeth Odhiambo[5], Thomas Rotich[5], Irene Orgut[5], Sammy Kihara[5], Mark Otiende[1], Christian Bottomley[2], Zonia N. Mupe[1], Eunice W. Kagucia[1], Katherine E. Gallagher[1,2], Anthony Etyang[1], Shirine Voller[1,2], John N. Gitonga[1], Daisy Mugo[1], Charles N. Agoti[1], Edward Otieno[1], Leonard Ndwiga[1], Teresa Lambe[6], Daniel Wright[6], Edwine Barasa[1], Benjamin Tsofa[1], Philip Bejon[1,6], Lynette I. Ochola-Oyier[1], Ambrose Agweyu[1]‡, J. Anthony G. Scott[1,2]‡, George M. Warimwe[1,6]‡

Uyoga *et al.*, *Science* **371**, 79–82 (2021)



Varying seroprevalence in Canada

DONOR INFECTIOUS DISEASE TESTING

TRANSFUSION

SARS-CoV-2 seroprevalence among blood donors after the first COVID-19 wave in Canada

Sahar Saeed[1] | Steven J. Drews[2,3] | Chantale Pambrun[4,5] | Qi-Long Yi[1,6] | Lori Osmond[1] | Sheila F. O'Brien[1,6]

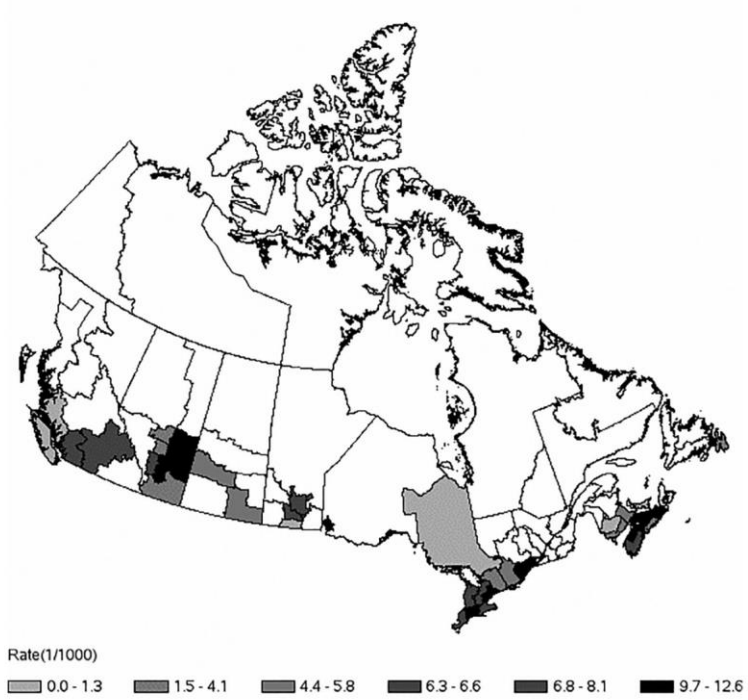
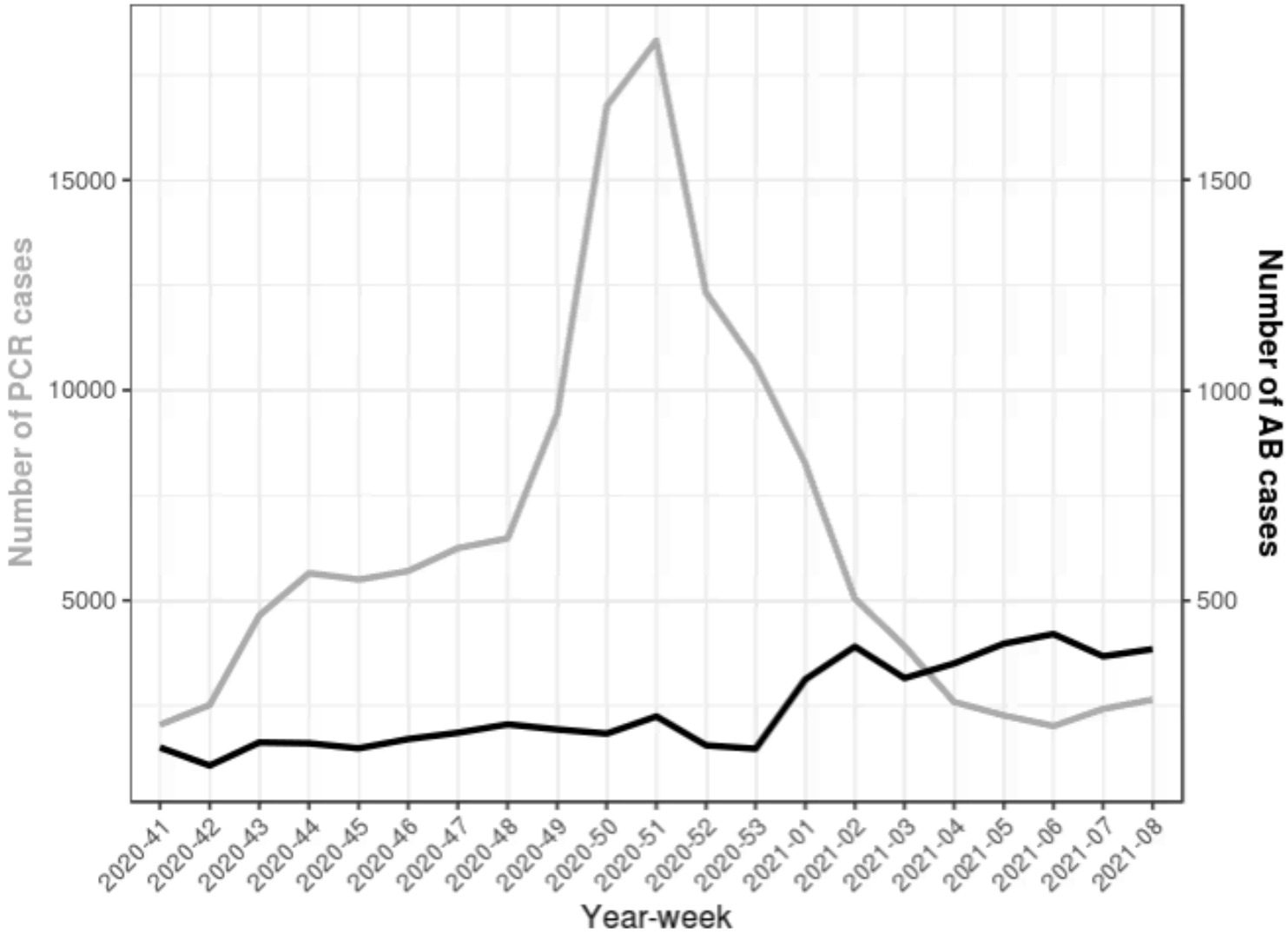


FIGURE 1 Seroprevalence by economic region across Canada. This map of Canada is divided by economic region (a grouping of census divisions derived by postal codes) a standard geographic unit for analysis. The seroprevalence rate is expressed per 1000 donors, darker shades represent greater seroprevalence. Seroprevalence was not calculated for regions with <200 donors (represented as white)

How fast is the model? Lag period from infection incidence-peak to seroprevalence increase



Weekly (week 41, 2020 to 8, 2021) numbers of SARS-CoV-2 PCR-pos samples in Denmark (approx. 5,800,000 citizens) and weekly seroprevalence estimates in Danish donors (based on approx. 125,000 tests). Manuscript under preparation.

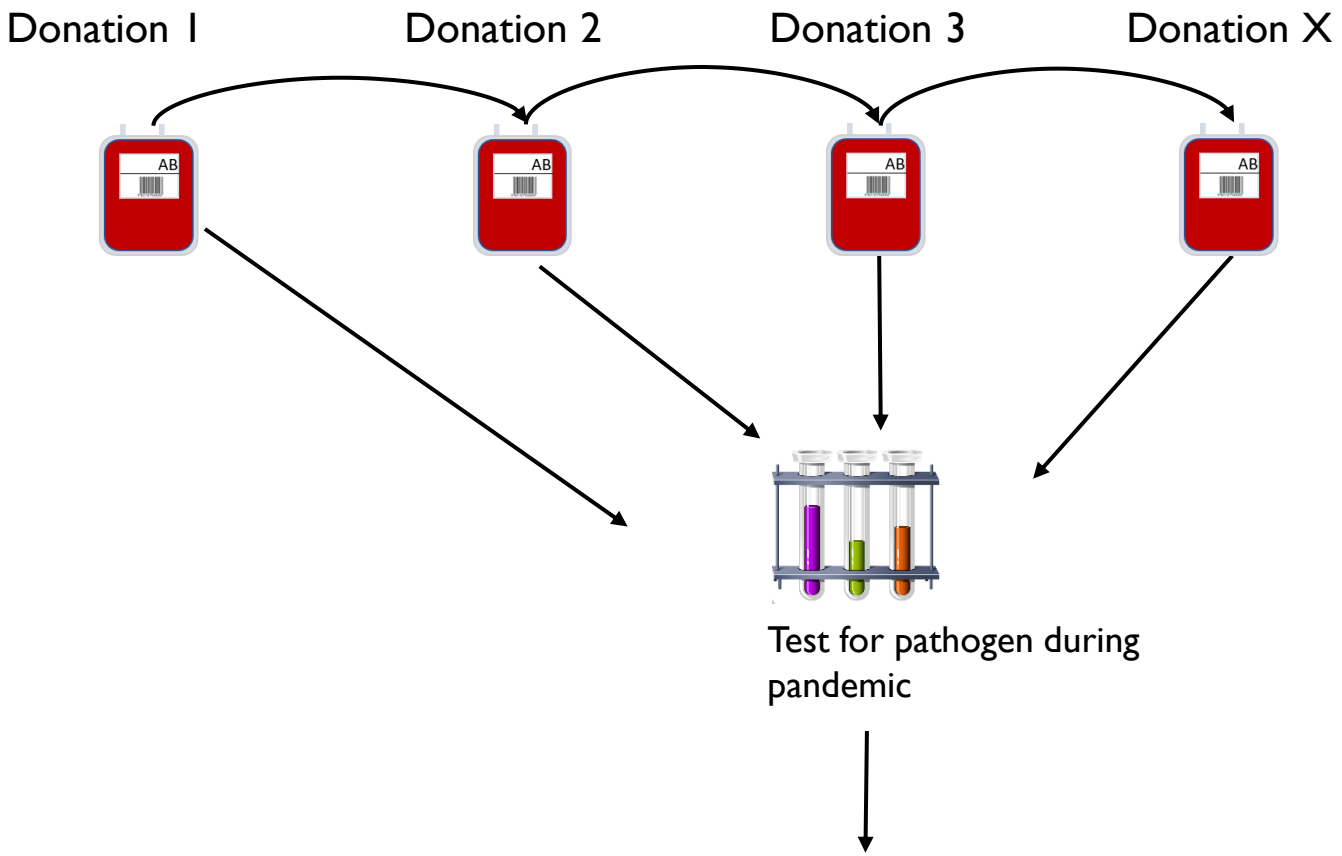
Conclusion - Blood donors as a sentinel population

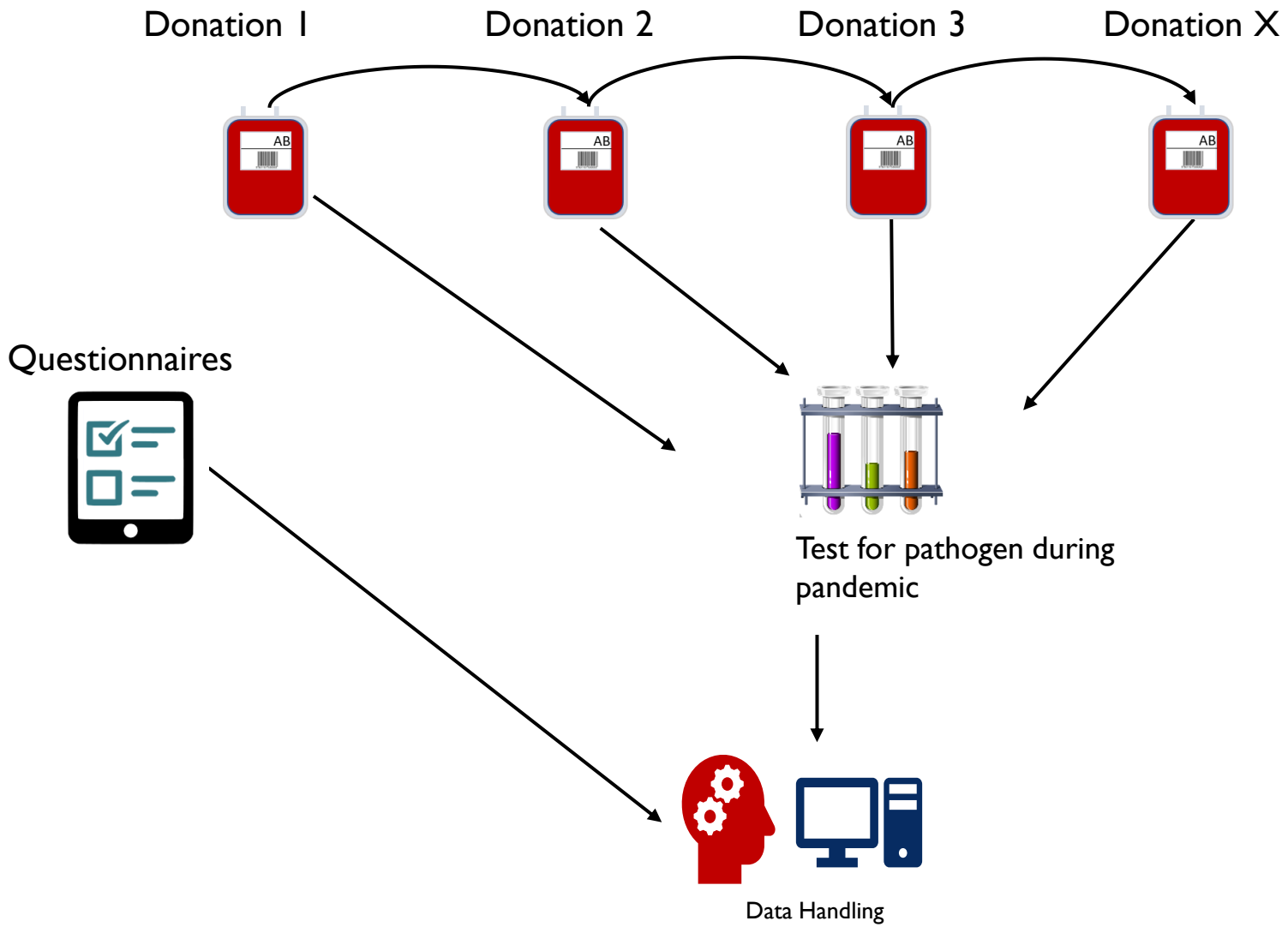
Blood donors and transfusion recipients have helped produce knowledge about infections for 100 years

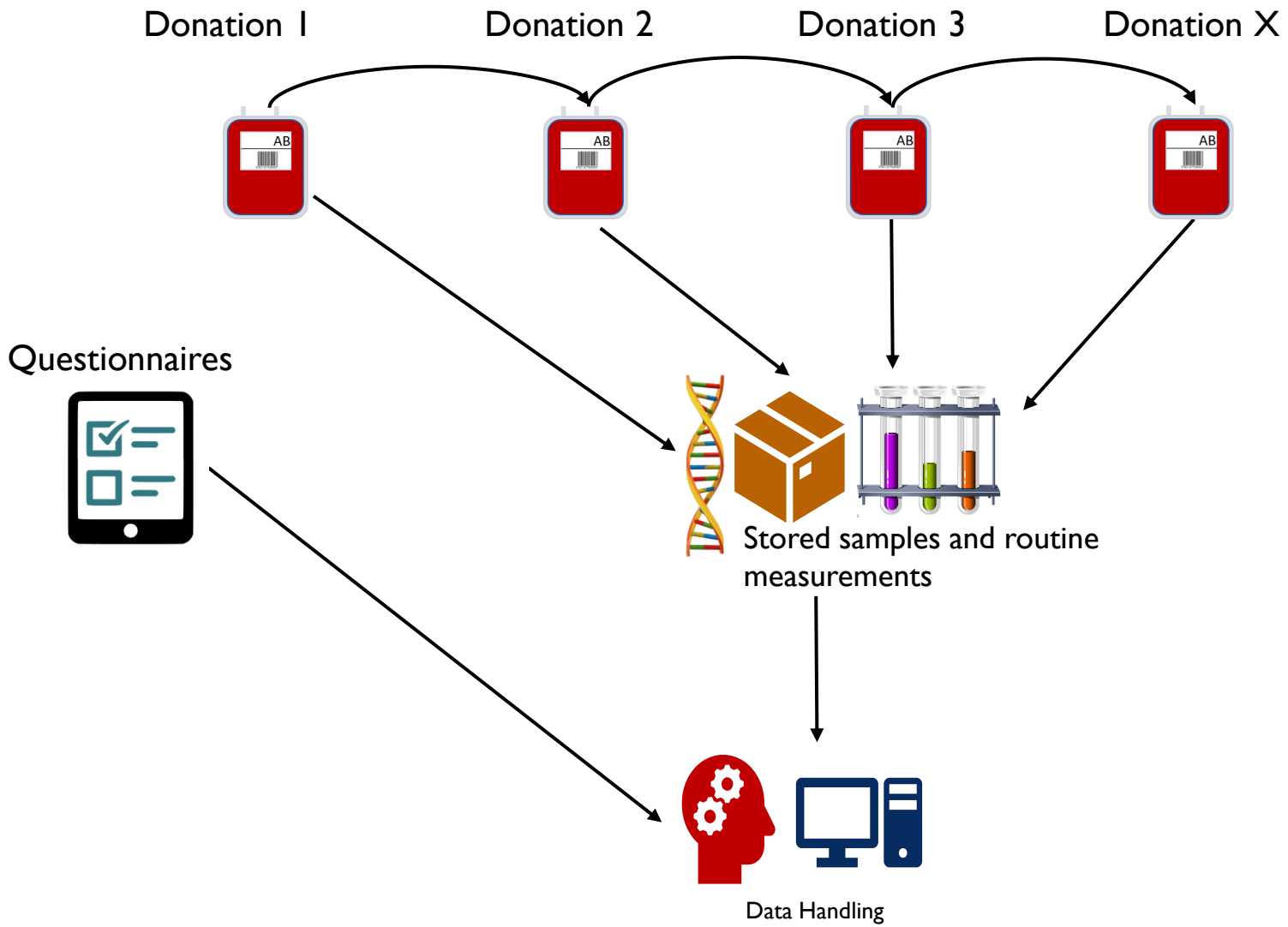
Blood donation facilities operate year round, all over the world and has the infrastructure to test and host biobanks

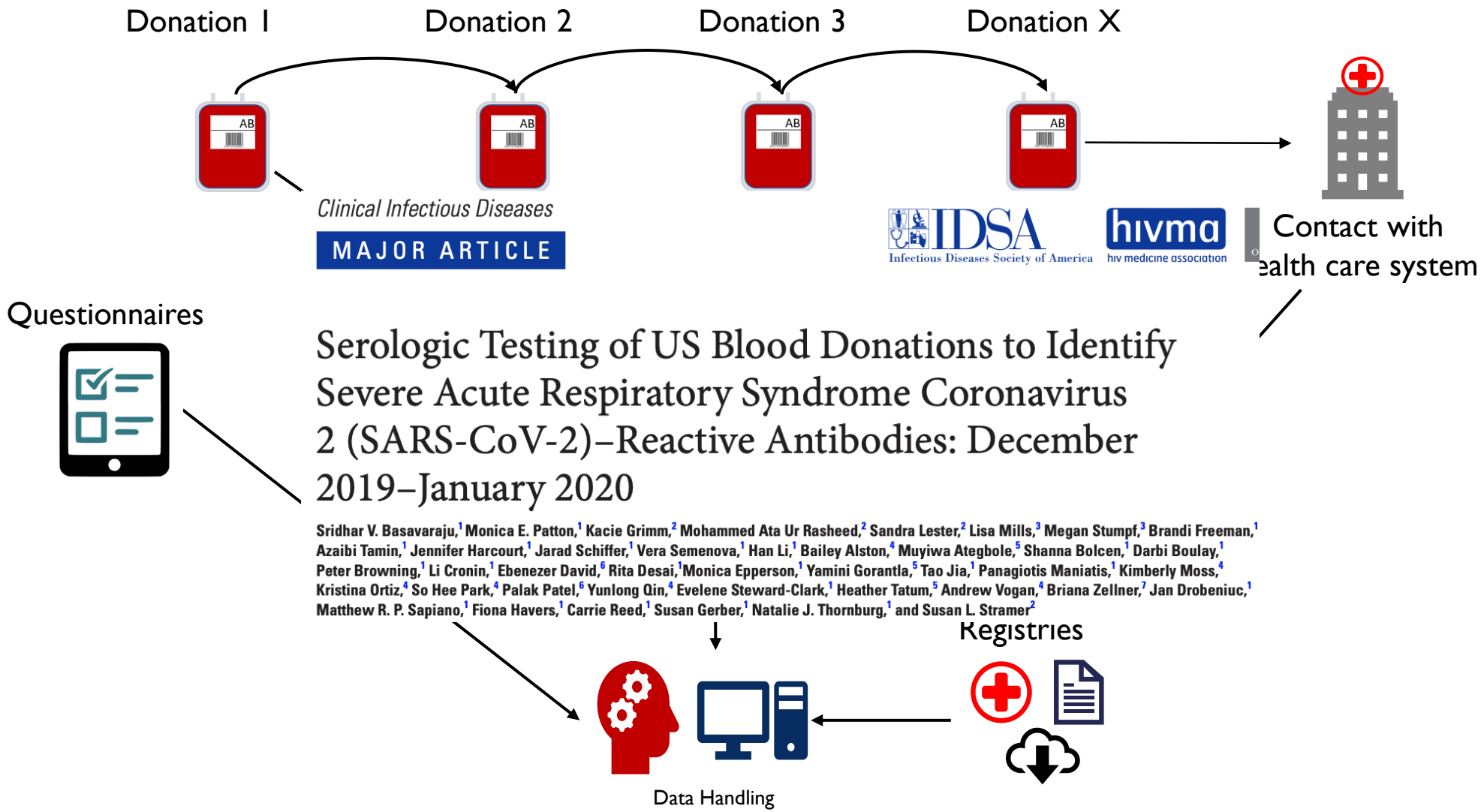
During the current pandemic, blood donor testing for SARS-CoV-2 antibodies was implemented extremely quickly in a range of countries

What if we had planned ahead?


Donation 1
Donation 2
Donation 3
Donation X
AB
AB
AB
AB
Test for pathogen during pandemic
Data Handling


Donation 1
Donation 2
Donation 3
Donation X
AB
AB
AB
AB
Questionnaires
Test for pathogen during pandemic
Data Handling


Donation 1
Donation 2
Donation 3
Donation X
AB
AB
AB
AB
Questionnaires
Stored samples and routine measurements
Data Handling


Donation 1
Donation 2
Donation 3
Donation X
AB
AB
AB
AB
Clinical Infectious Diseases
MAJOR ARTICLE
IDSA
Infectious Diseases Society of America
hivma
hiv medicine association
Contact with
ealth care system
Questionnaires
Serologic Testing of US Blood Donations to Identify Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)–Reactive Antibodies: December 2019–January 2020
Sridhar V. Basavaraju,[1] Monica E. Patton,[1] Kacie Grimm,[2] Mohammed Ata Ur Rasheed,[2] Sandra Lester,[2] Lisa Mills,[3] Megan Stumpf,[3] Brandi Freeman,[1] Azaibi Tamin,[1] Jennifer Harcourt,[1] Jarad Schiffer,[1] Vera Semenova,[1] Han Li,[1] Bailey Alston,[4] Muyiwa Ategbole,[5] Shanna Bolcen,[1] Darbi Boulay,[1] Peter Browning,[1] Li Cronin,[1] Ebenezer David,[6] Rita Desai,[1]Monica Epperson,[1] Yamini Gorantla,[5] Tao Jia,[1] Panagiotis Maniatis,[1] Kimberly Moss,[4] Kristina Ortiz,[4] So Hee Park,[4] Palak Patel,[6] Yunlong Qin,[4] Evelene Steward-Clark,[1] Heather Tatum,[5] Andrew Vogan,[4] Briana Zellner,[7] Jan Drobeniuc,[1] Matthew R. P. Sapiano,[1] Fiona Havers,[1] Carrie Reed,[1] Susan Gerber,[1] Natalie J. Thornburg,[1] and Susan L. Stramer[2]
Registries
Data Handling

Conclusion - Blood donors as a sentinel population

We propose to use blood donors as a sentinel population

This implies work from our side during and after the current pandemic:

- Preparedness plans have been incomplete and as societies we were not ready for the current pandemic
- We need populations to be tested early and fast – blood services can do this
- Not all infections are of course relevant
- Archive samples may be an important asset in this regard – to track introduction and for research

We have possibility now to introduce blood donors in the future preparedness plans for new epidemics

Thanks to our blood donors!

