



**NOVEL INTERVENTIONS AND
DIAGNOSTIC TESTS FOR LEPROSY
ILEP#: 707.19.02**

Report 2021
Jan Hendrik Richardus
Annemieke Geluk
Anouk van Hooij

COLEP

2001-2008

n=41,000



Maltalep

2012-2017

n=21,300



IDEAL

2012-2018

n=6,050



INDIGO#1

2016-2018

n=150



INDIGO#2

2019-2022

n=1100



R2STOP

2017-2019

n=275



Post-exposure prophylaxis

BCG



SDR



BCG-induced immunity profiles in household contacts of leprosy patients differentiate between protection and disease

Anouk van Hooij^a, Susan J.F. van den Eeden^a, Marufa Khatun^b, Santosh Soren^b, Kees L.M.C. Franken^a, Johan Chandra Roy^b, Khorshed Alam^b, Abu Sufian Chowdhury^b, Jan Hendrik Richardus^c, Annemieke Geluk^{a,*}

International Journal of Infectious Diseases 88 (2019) 65–72

Effectiveness of single-dose rifampicin after BCG vaccination to prevent leprosy in close contacts of patients with newly diagnosed leprosy: A cluster randomized controlled trial

Renate Richardus^{a,b}, Khorshed Alam^c, Kallyan Kundu^c, Johan Chandra Roy^c, Tasnuva Zafar^a, Abu Sufian Chowdhury^c, Daan Nieboer^a, Roel Faber^a, C. Ruth Butlin^c, Annemieke Geluk^{b,d}, Jan Hendrik Richardus^{a,1,*}

Vaccine 33 (2015) 1562–1567

Clinical manifestations of leprosy after BCG vaccination: An observational study in Bangladesh

Renate A. Richardus^a, C. Ruth Butlin^b, Khorshed Alam^b, Kallyan Kundu^b, Annemieke Geluk^c, Jan Hendrik Richardus^{a,*}

Clinical Biochemistry 66 (2019) 76–82

Fingerstick test quantifying humoral and cellular biomarkers indicative for *M. leprae* infection

Paul L.A.M. Corstjens^a, Anouk van Hooij^b, Elisa M. Tjon Kon Fat^a, Korshed Alam^c, Loes B. Vrolijk^{b,d}, Sipho Dlamini^d, Moises Batista da Silva^e, John S. Spencer^f, Claudio G. Salgado^c, Jan Hendrik Richardus^a, Colette L.M. van Hees^b, Annemieke Geluk^{b,*}

RESEARCH ARTICLE

Longitudinal assessment of anti-PGL-I serology in contacts of leprosy patients in Bangladesh

Renate A. Richardus^{1,2}, Konrad van der Zwet², Anouk van Hooij², Louis Wilson², Linda Oskam^{3,4}, Roel Faber², Susan J. F. van den Eeden¹, David Pahan^{4,5}, Khorshed Alam¹, Jan Hendrik Richardus², Annemieke Geluk^{1,*}

SCIENTIFIC REPORTS

Quantitative lateral flow strip assays as User-Friendly Tools To Detect Biomarker Profiles For Leprosy

Received: 14 July 2016
 Accepted: 08 September 2016
 Published: 29 September 2016

Anouk van Hooij^a, Elisa M. Tjon Kon Fat^a, Renate Richardus¹, Susan J. F. van den Eeden^a, Louis Wilson², Claudia J. de Dood², Roel Faber³, Korshed Alam⁴, Jan Hendrik Richardus², Paul L. A. M. Corstjens² & Annemieke Geluk^{1*}

CLINICAL TRIAL
 published: 04 April 2018
 doi: 10.3389/fimmu.2018.00629

BCG and Adverse Events in the Context of Leprosy

Renate Richardus^{1,2}, Anouk van Hooij¹, Susan J. F. van den Eeden¹, Louis Wilson¹, Korshed Alam³, Jan Hendrik Richardus² and Annemieke Geluk^{1*}

ORIGINAL RESEARCH
 published: 11 August 2020
 doi: 10.3389/fimmu.2020.01811

Household Contacts of Leprosy Patients in Endemic Areas Display a Specific Innate Immunity Profile

Anouk van Hooij^{1*}, Maria Tió-Coma², Els M. Verhard¹, Marufa Khatun³, Khorshed Alam⁴, Elisa Tjon Kon Fat¹, Danielle de Jong¹, Abu Sufian Chowdhury², Paul Corstjens¹, Jan Hendrik Richardus⁴ and Annemieke Geluk^{1*}

ORIGINAL RESEARCH
 published: 16 June 2020
 doi: 10.3389/fmicb.2020.01592

Genomic Characterization of *Mycobacterium leprae* to Explore Transmission Patterns Identifies New Subtype in Bangladesh

Maria Tió-Coma¹, Charlotte Avanzi², Els M. Verhard¹, Louise Piermeel¹, Anouk van Hooij¹, Andrej Benjak¹, Johan Chandra Roy³, Marufa Khatun³, Khorshed Alam⁴, Paul Corstjens¹, Stewart T. Cole^{1,5}, Jan Hendrik Richardus⁶ and Annemieke Geluk^{1*}

Contents lists available at ScienceDirect

EBioMedicine

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

Blood RNA signature RISK4LEP predicts leprosy years before clinical onset

Maria Tió-Coma^a, Szymon M. Kiełbasa^b, Susan J.F. van den Eeden^a, Hailiang Mei^b, Johan Chandra Roy^c, Jacco Wallinga^{b,d}, Marufa Khatun^c, Santosh Soren^c, Abu Sufian Chowdhury^c, Khorshed Alam^c, Anouk van Hooij^a, Jan Hendrik Richardus^e, Annemieke Geluk^{a,*}

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EBioMedicine

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 Published by THE LANCET

journal homepage: www.ebiomedicine.com

Research paper

Application of new host biomarker profiles in quantitative point-of-care tests facilitates leprosy diagnosis in the field

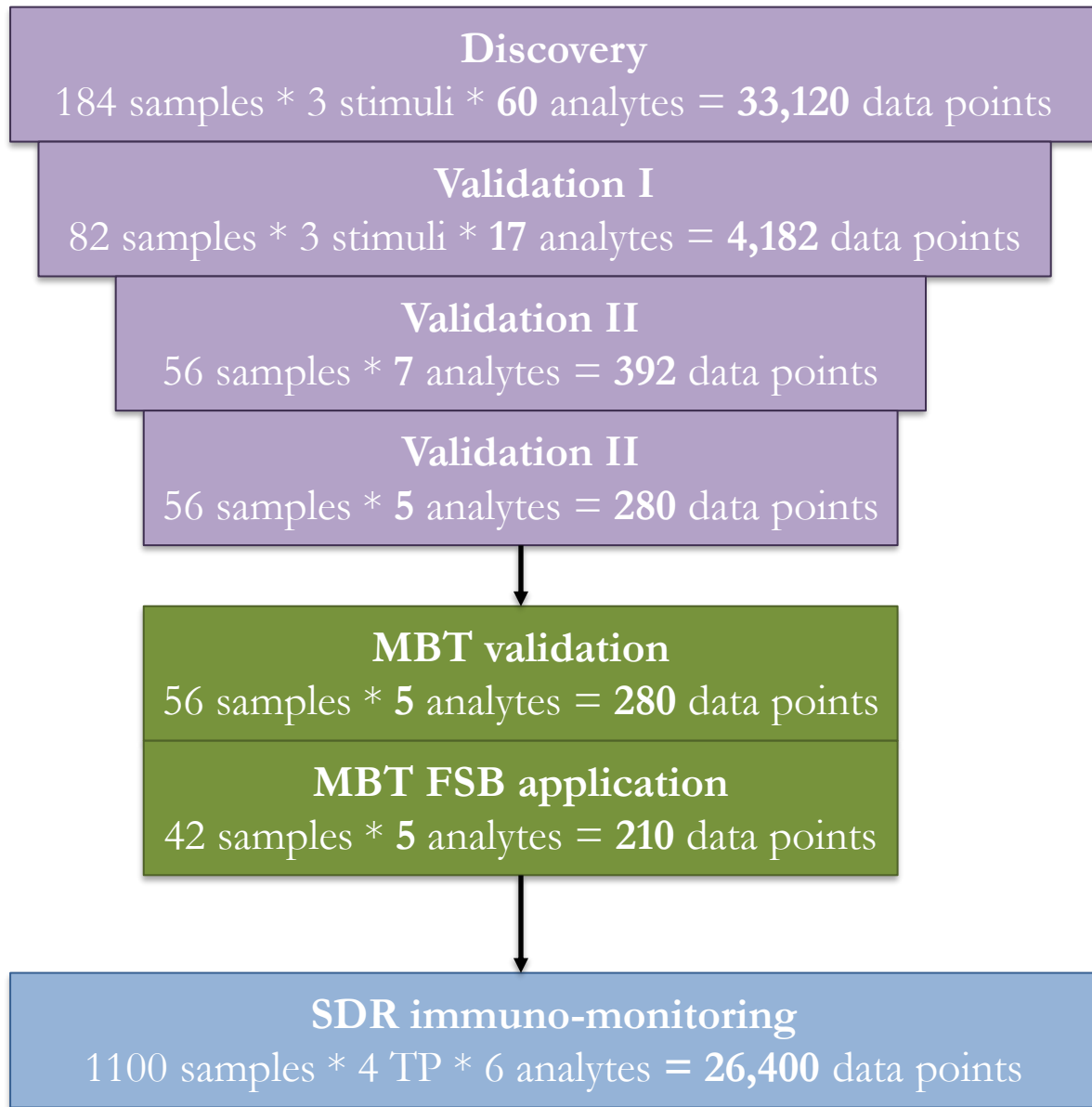
Anouk van Hooij^a, Susan van den Eeden^a, Renate Richardus^{a,b}, Elisa Tjon Kon Fat^c, Louis Wilson^a, Kees L.M.C. Franken^a, Roel Faber^b, Merufa Khatun^d, Khorshed Alam^d, Abu Sufian Chowdhury^d, Jan Hendrik Richardus^b, Paul Corstjens^c, Annemieke Geluk^{a,b,*}

CellPress
 OPEN ACCESS

Article

Prototype multi-biomarker test for point-of-care leprosy diagnostics

1. ILEP#: 703.15.07	WBA
	plasma
2. ILEP#: 707.19.02	FSB



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 Published by THE LANCET
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Research paper
Application of new host biomarker profiles in quantitative point-of-care tests facilitates leprosy diagnosis in the field

Anouk van Hooij^a, Susan van den Eeden^a, Renate Richardus^{a,b}, Elisa Tjon Kon Fat^c, Louis Wilson^a, Kees L.M.C. Franken^a, Roel Faber^b, Merufa Khatun^d, Khorshed Alam^d, Abu Sufian Chowdhury^d, Jan Hendrik Richardus^b, Paul Corstjens^c, Annemieke Geluk^{a,*}

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^b Department of Public Health, Erasmus MC University Medical Center Rotterdam, Rotterdam, The Netherlands
^c Department of Cell and Chemical Biology, Leiden University Medical Center, The Netherlands
^d Rural Health Program, The Leprosy Mission International Bangladesh, Nilphamari, Bangladesh

2019

iScience
 CellPress
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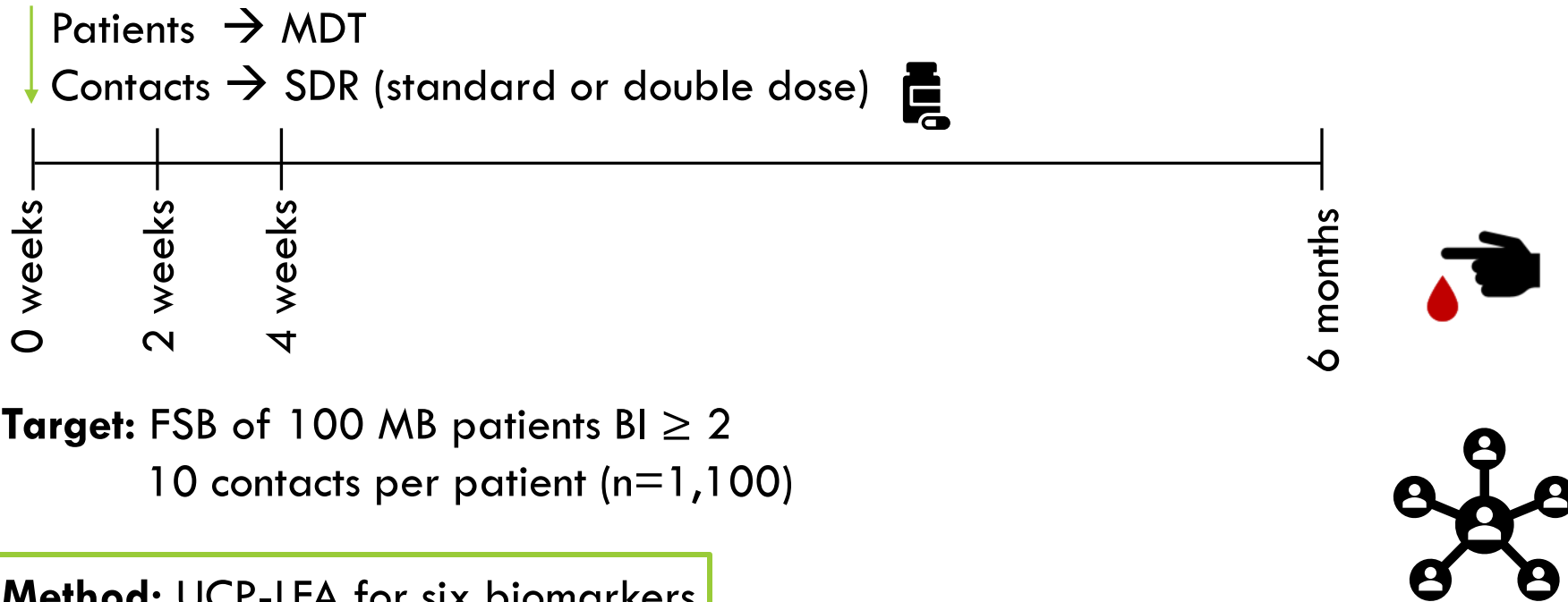
omarker test for point-of-care
 s

Anouk v... Kon Fat,² Danielle de Jong,² Marufa Khatun,³ Santosh Soren,³ Abu Sufian... Chandra Roy,³ Khorshed Alam,³ Jong-Pill Kim,⁴ Jan Hendrik Richardus,⁵ Annemieke Geluk,^{1,2,3,*} and Paul L.A.M. Corstjens^{2,6}

2021

INDIGO#2
 2019-2022
 n=1100

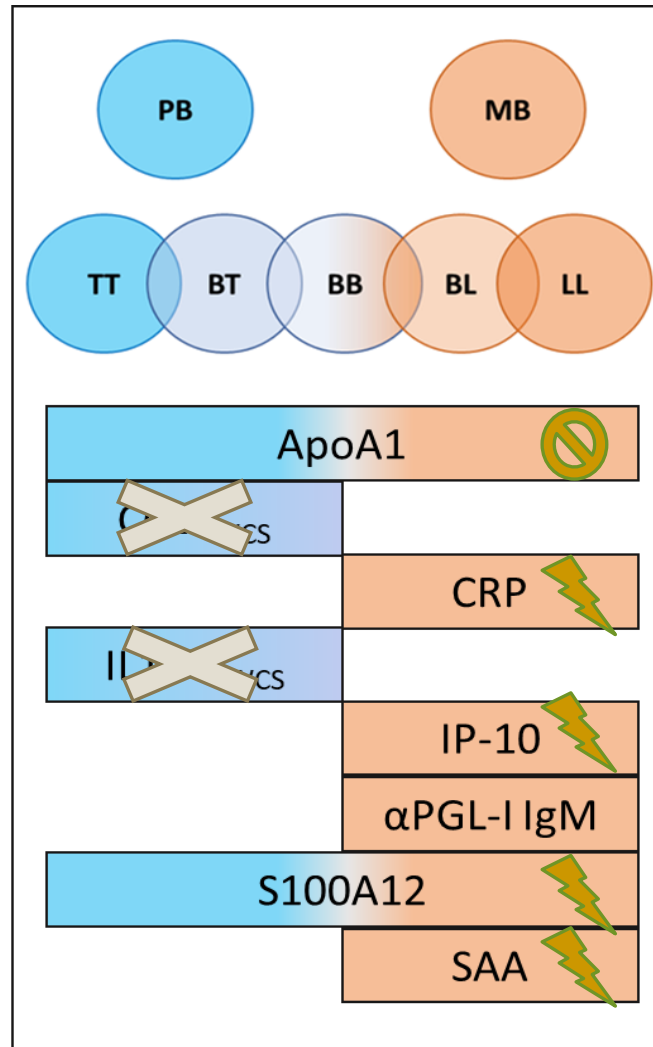
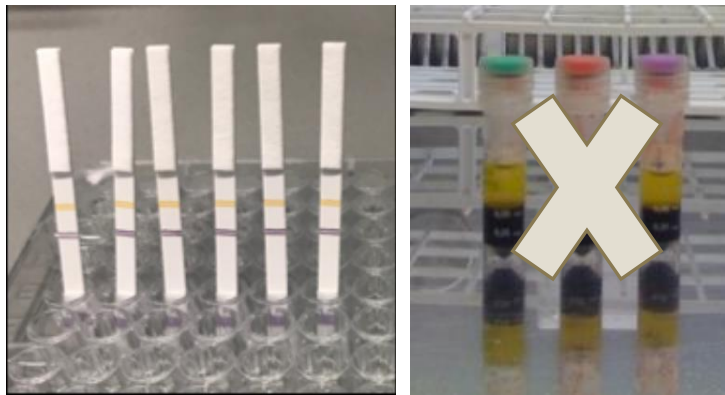
IMMUNE-MONITORING OF SDR/SDDR IN CONTACTS





- First** on-site use of UCP-LFA by RHP staff
- First** large-scale detection of biomarkers in FSB
- First** immune-monitoring effect of SDR in contacts

INDIGO#2
2019-2022
n=1100

BIOMARKER SIGNATURE FOR LEPROSY



 Pro-inflammatory

 Anti-inflammatory



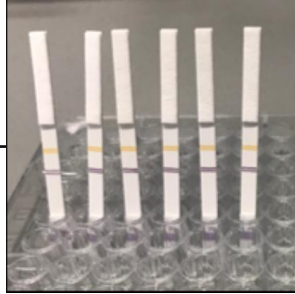
INDIGO#2
2019-2022
n=1100

WORKFLOW

1. UCP-LFA strip production

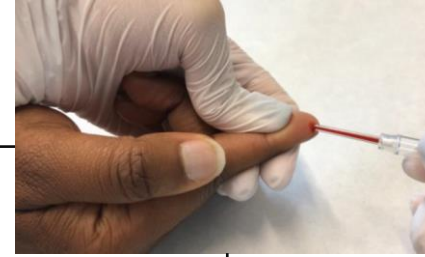


2. Quality control

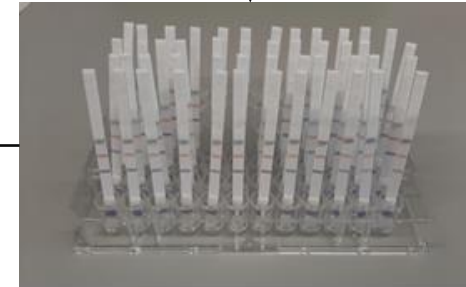


3. Shipment to Bangladesh

4. Sample collection



5. Transport to RHP lab



26,400 LFA strips



9. Data analysis

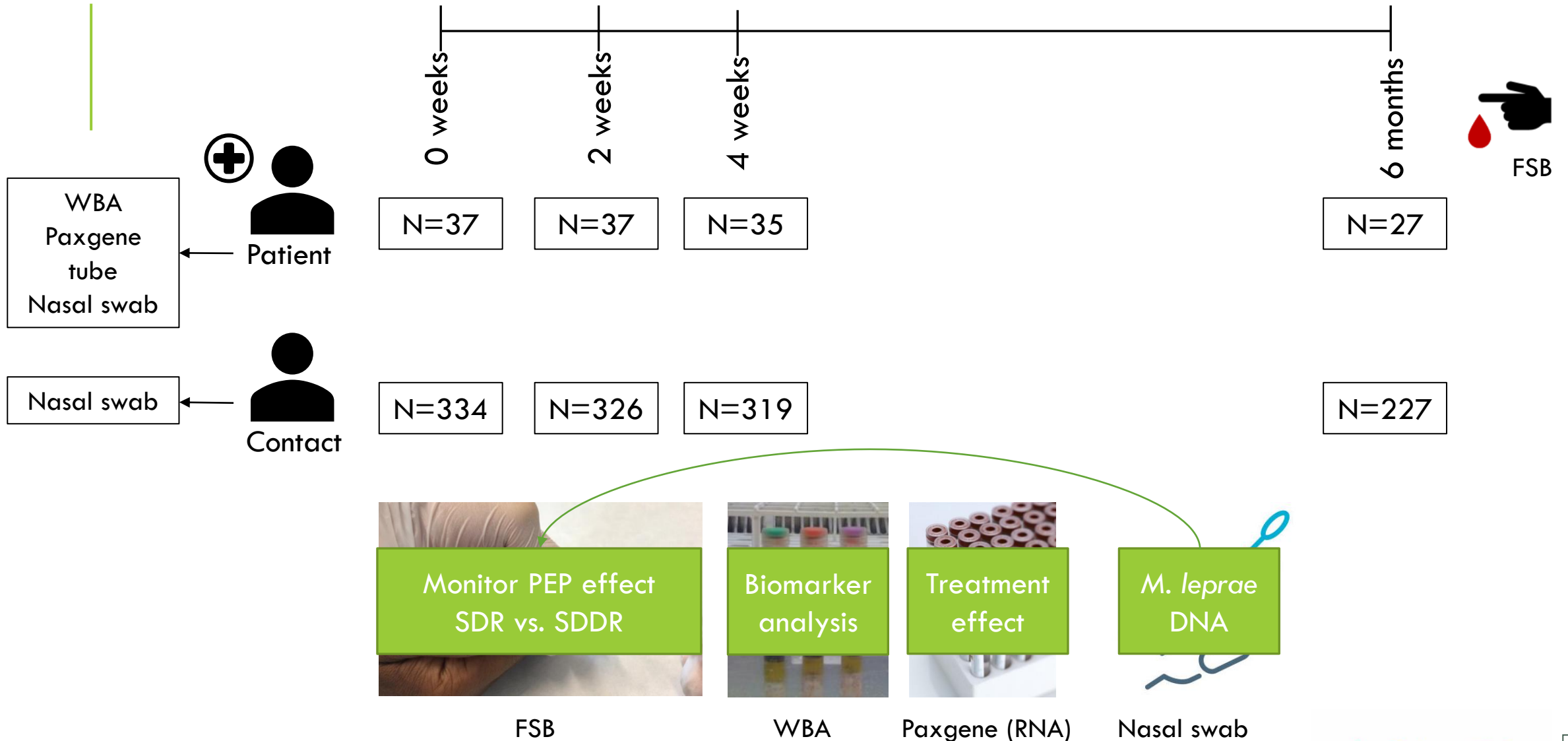
8. Scan UCP-LFA strips



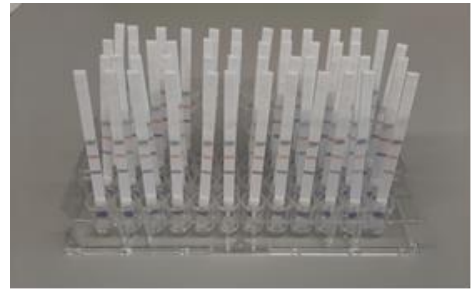
7. Shipment to the Netherlands

6. Perform UCP-LFA the same day

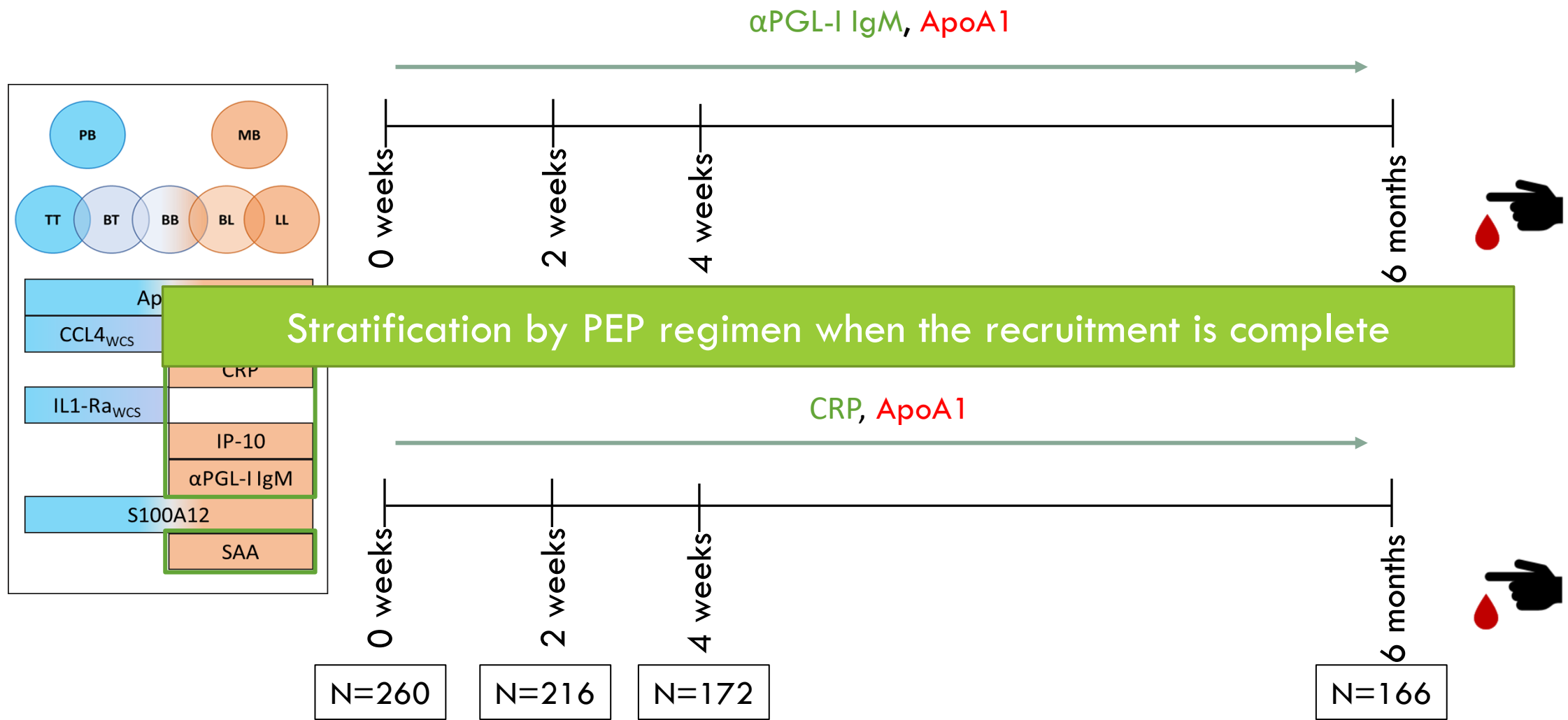
CURRENT STATUS: RECRUITMENT



*Due to COVID-19 for 5 patients and their respective contacts follow-up samples could not be taken at one or multiple timepoints



PRELIMINARY DATA



DEBATE

Open Access

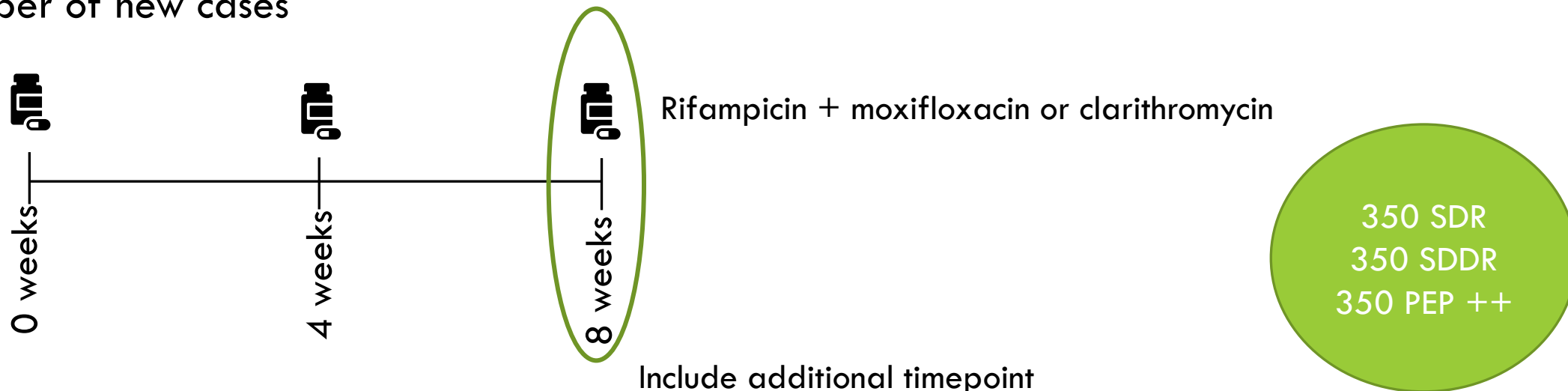


An enhanced regimen as post-exposure chemoprophylaxis for leprosy: PEP++

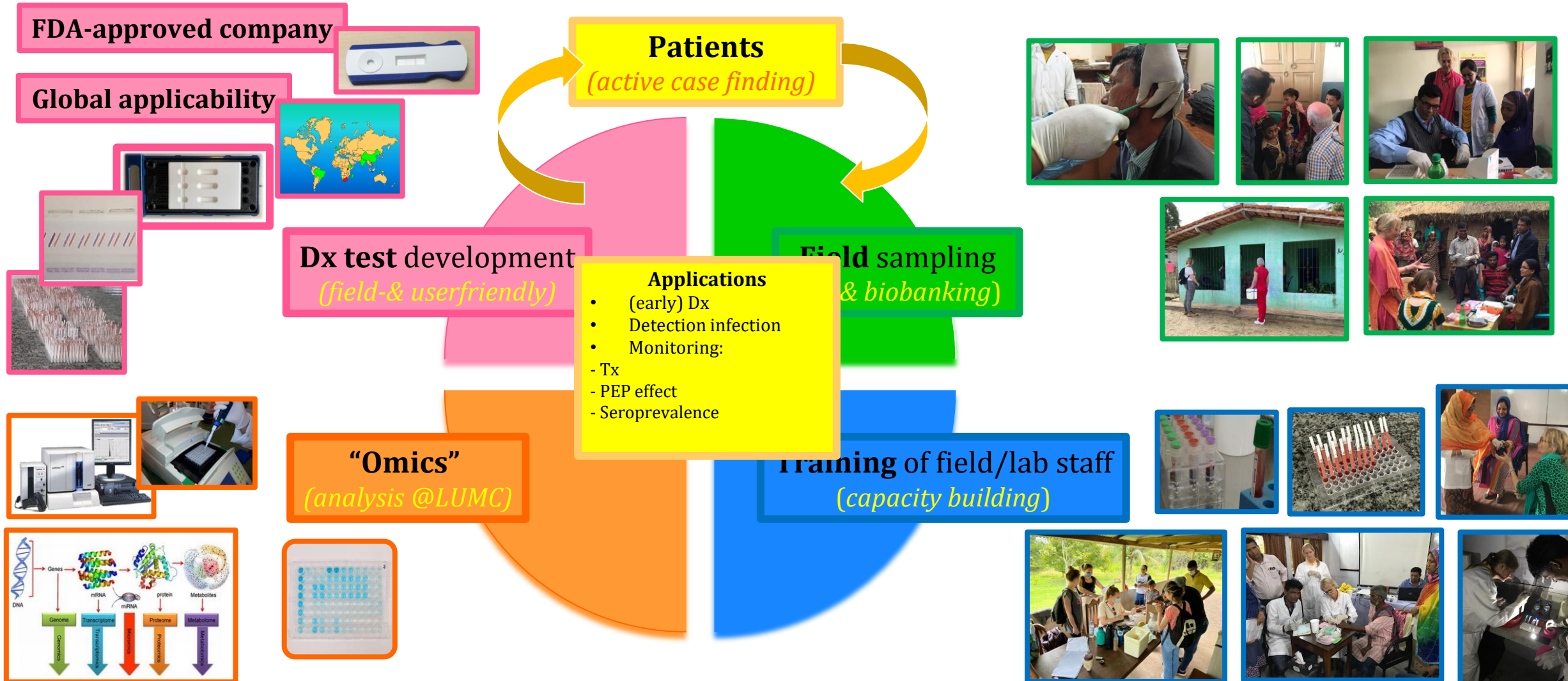
Liesbeth F Mieras^{1*}, Anna T Taal¹, Wim H van Brakel¹, Emmanuelle Cambau², Paul R Saunderson³, W Cairns S Smith⁴, Cita Rosita S Prakoeswa⁵, Linda Astari⁵, David M Scollard⁶, Dejair Caitano do Nascimento⁷, Jacques Grosset⁸, Hemanta K Kar⁹, Shinzo Izumi¹⁰, Laura Gillini¹¹, Marcos C L Virmond⁷ and Marieke G G Sturkenboom¹²

PEP++ AMENDMENT

- ❖ Some reports indicate that SDR is not sufficient, an enhanced regimen, more potent against a higher load of leprosy bacteria, would increase the effectiveness of this preventive measure significantly → PEP++
- ❖ Include as extra arm in the study, immunological effect can be observed earlier than the number of new cases



LUMC: DEVELOPMENT OF IMMUNODIAGNOSTIC TOOLS FOR LEPROSY (2004-2022) FROM BIOMARKER DISCOVERY TO APPLICATION IN ENDEMIC AREAS



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Els Hartsema

Zijie Zhou

Paul Corstjens

Annemieke Geluk

TLMI,B



Khorsheed Alam

David Khan

Marufa Khatun

Santosh Soren

Kallyan Kundu

Abu Sufian Chowdhury

Johan Chandra Roy

Field team RHP

