



Pioneering Perspectives: Innovation and Technology in Early-Stage Clinical Drug Research

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Harnessing technology for human drug research

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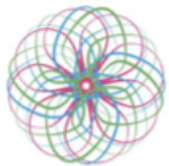
Centre for Human Drug Research



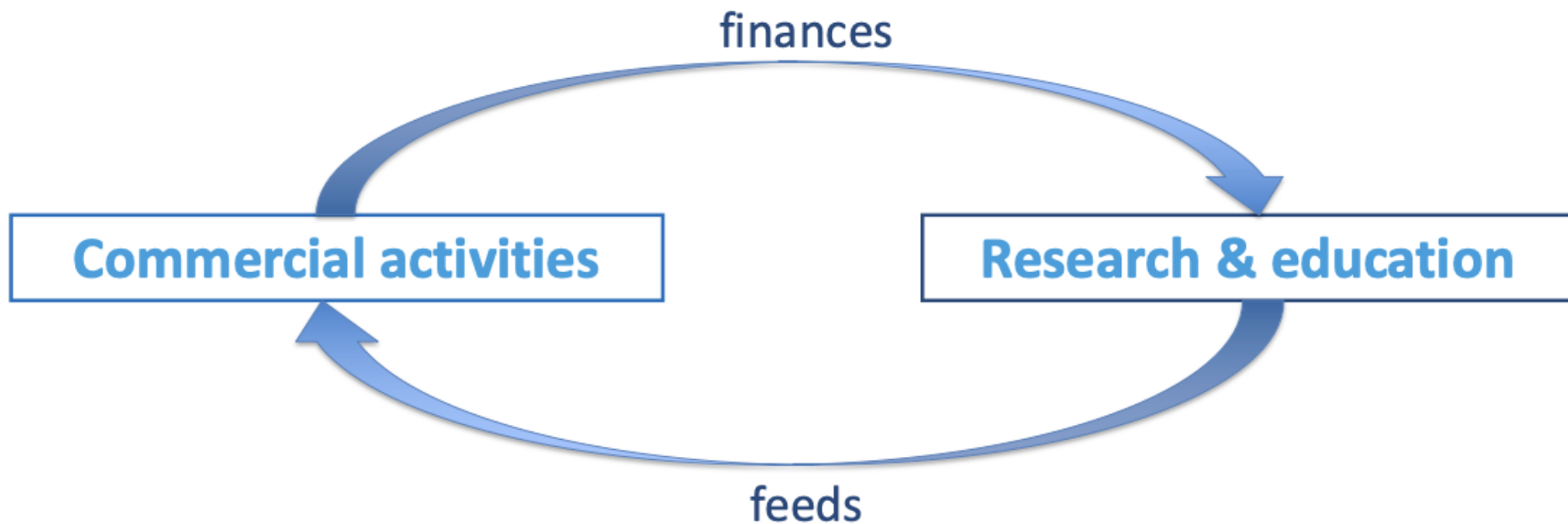
Executive summary CHDR

- › Contract research organisation, established in 1987 as a foundation
 - › 280+ full time equivalent employees
 - › Profit used for innovation
 - › Development and validation of clinical pharmacology methods & biomarkers
 - › Training site (PhD, undergraduate students, clinical pharmacology education)
- › Approximately 55 early phase clinical trial projects per year for big pharma & biotech
- › Studies in healthy volunteers and patients
 - › Proof-of-pharmacology
 - › Proof-of-mechanism
 - › Ready-for-Research
 - › CHDR Monocentre
- › Housed in a purpose-built, world class facility (opened in 2013), 54 beds
- › In-hospital CRU with 8 beds in the Leiden University Medical Center (LUMC)
- › Close collaborations with top Universities & Medical Centres





CHDR's unique model



2023 at a glance



62

studies conducted

17 patient and 45 healthy volunteer studies



>20,000

volunteer applications

5,000 patients,
15,000 healthy volunteers



43

average days clinical
trial application
approval time



23

contracts signed



17

clinical trial applications
under the EU CTR

13 approved in 2023, 4 pending



4

clinical pharmacology
graduates



81

articles published in
peer-reviewed journals



+27%

growth in unit
occupancy



8

PhDs graduated



>90%

studies executed as planned



15

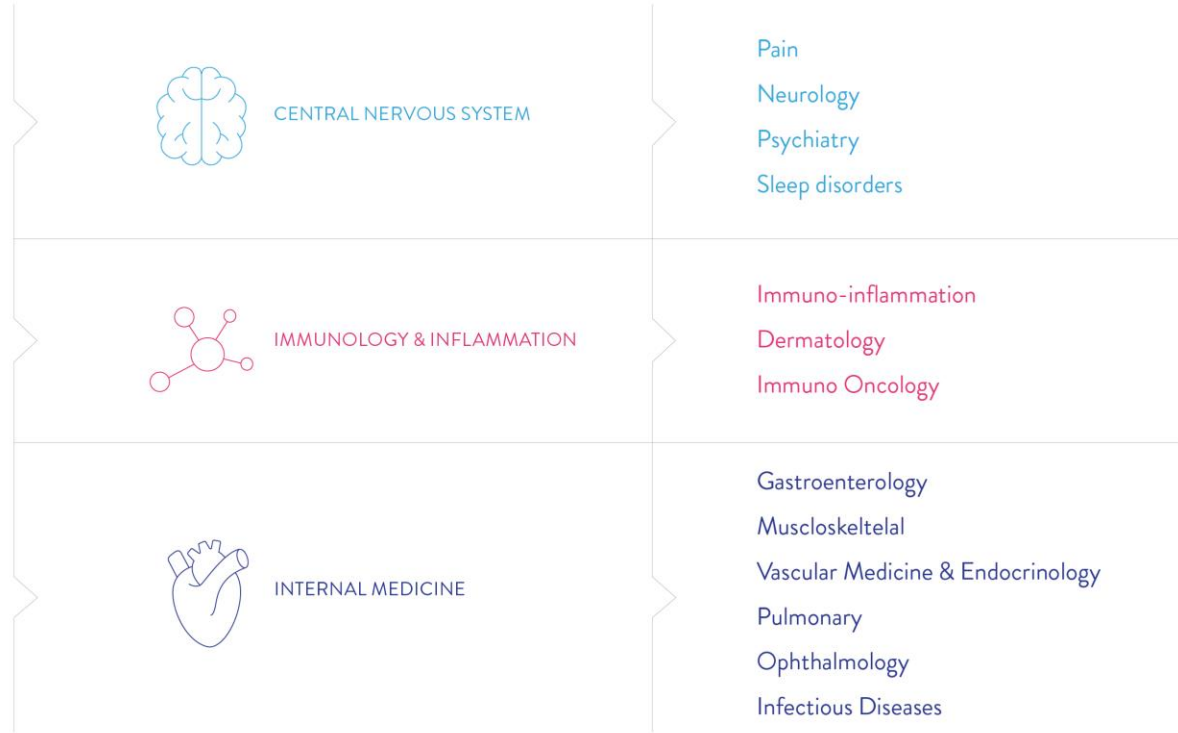
nationalities



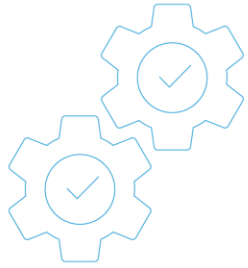
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overall client
satisfaction

Research areas



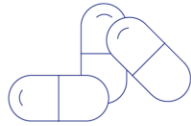
Early-phase drug development



Method
validation



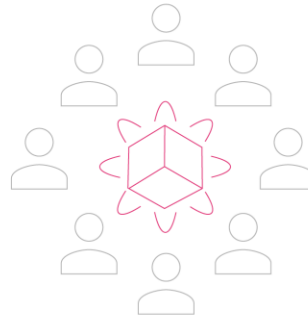
Single ascending dose



Multiple ascending dose

POP: Proof-of-Pharmacology

INTERMEDIATE
POPULATIONS



Pharmacological challenges
Behavioural challenges

POM: Proof-of-Mechanism

TARGET POPULATIONS
(MONOCENTRE APPROACH)



Surrogate endpoints in patients
Efficacy in patients

POC: Proof-of-Concept

Innovative tools for 'Proof-of-Pharmacology'

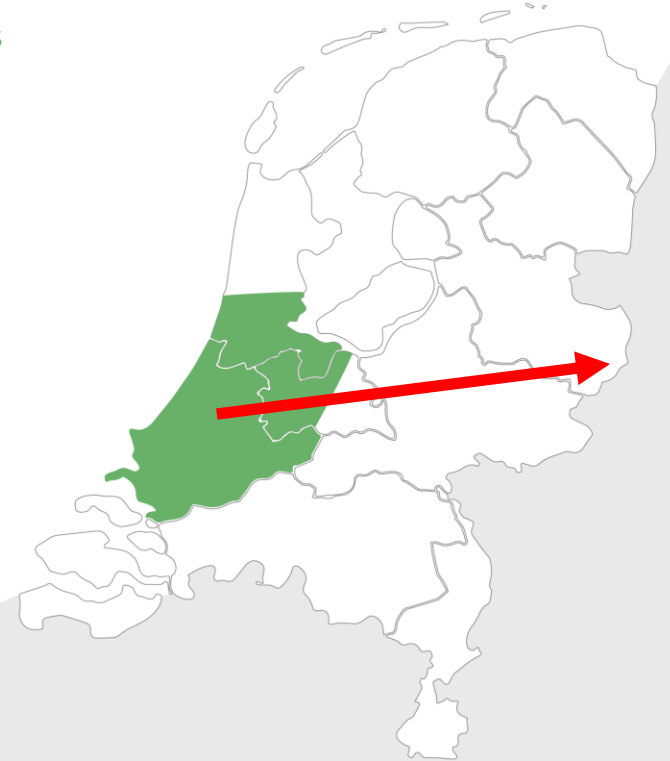
- › NeuroCart®
- › PainCart®
- › Neuroimaging
- › Inflammatory challenges
- › CSF-Sampling
- › CNS pharmacological challenge models
- › Driving simulator
- › Metabolic challenges
- › Hormone clamps
- › Cardiac & Endovascular function assessments
- › Coagulation tests
- › Dermatological assessments – Derma Toolbox®
- › Retinal imaging
- › In-vitro & ex-vivo immunological challenges



Collaborative model

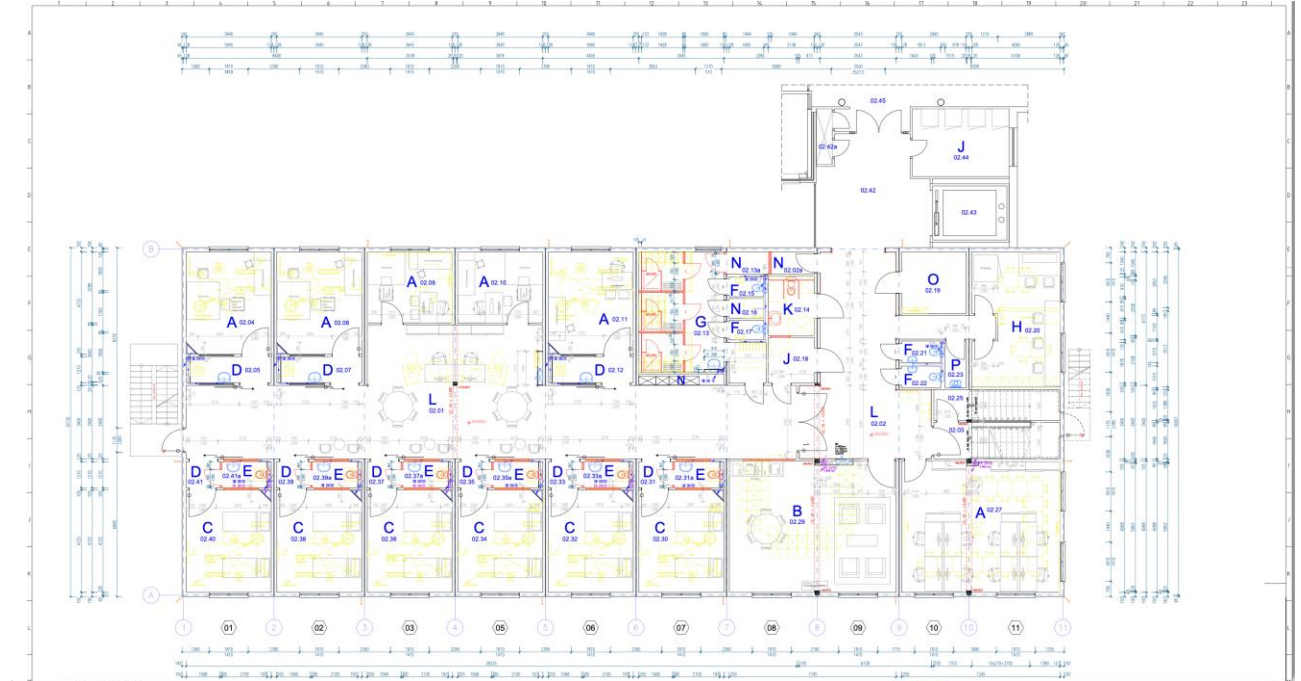
Examples collaboration networks: patients, methods & key opinion leaders

- › Parkinson's Disease network
 - › LUMC, Amsterdam UMC, Haga ZH, others
- › ALS collaboration
 - › UMC-Utrecht
- › Dermatology (CONNECTED)
 - › LUMC, Erasmus MC, 10+ dermatological clinics
- › Pulmonary Collaboration
 - › Erasmus MC
- › Vascular medicine & Inflammation Collaboration
 - › LUMC, Amsterdam UMC
- › Immuno-oncology
 - › LUMC, Haga ZH, NKI
- › Neuroregeneration Network
 - › LUMC, Erasmus MC
- › Cardiology Network
 - › Amsterdam UMC
- › Ophthalmology Network
 - › Eye hospital Rotterdam
- › ...and many others.



New clinical research unit: CHDR-Twente @ MST

- > 12 research beds
- > 3 research rooms
- > 2 screening rooms
- > living area for study subjects
- > office space for employees
- > cantine



Mission alignment

> UT

> “To impact society through the development, evaluation, and appropriate implementation of technology leading to sustainable and personalised health for everyone”

> CHDR

> “Adding value to early-phase clinical drug development to realise better drugs for patients”

> MST

> “Promoting health in the Twente region in close collaboration with regional care partners, training new healthcare professionals and conducting scientific research”

> → “Technology assisted drug development”



CHDR

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