

Welcome to Nordic Proof Webinar & Matchmaking Event

June 2nd 2021

Before we start

To run the webinar in the best possible way, please;

1. Unmute and turn off you camara
2. If you have questions, please use the chat functionality
3. Please register your full name in Zoom



Agenda

- 12:00 pm Welcome and short intro to Nordic Proof and the program
Siri Stabel Olsen, Coordinator Nordic Proof
- 12:10 pm Navigating the regulations for e-Health companies.
Kami Faust, Regulatory Advisor at Norway Health Tech
- 12:25 pm Clinical Evaluation for Software as a medical device
Claudia Dannehl, Medical Device Manager at Link
- 12:45 pm An e-Health companies' journey from concept to submission
Anders Aune, CEO at Picterus
- 1:00 pm Closing of webinar. One2One meetings in separate online meeting rooms
- 3:00 pm End program

Nordic Proof

Consortium of premium test facilities in the Nordics



Operated by



Funded by



Bent-Håkon Lauritzen
Coordinator Nordic Proof
bhl@norwayhealthtech.com



Siri Stabel Olsen
Coordinator Nordic Proof
sso@norwayhealthtech.com



Experience/background

- ❖ Project leader Nordic Public Procurement of Innovation (PCP and PPI) and several procurement projects in Norway
- ❖ Business coach startup companies and project leader lean launchpad program
- ❖ Project leader innovation projects with Municipal sector and hospitals in Norway
- ❖ Lecturing at University of Southeast Norway
- ❖ Development of business parks and incubators
- ❖ Industry development projects for Norwegian Ministry of Foreign Affairs in the Balkan region
- ❖ Previous owner and CEO of Norwegians largest bookstore chain

Experience/background

- ❖ 10+ years experience from industrial R&D chemistry
- ❖ 15+ years in commercial and leadership roles in the diagnostic- and medical device industry
- ❖ International experience - EU, China, USA
- ❖ B2B business development
- ❖ CEO for Skannex AS for 7+ years. A medical device company developing and supplying SW/HW products for point of care diagnostics
- ❖ Master of Science in Polymer Chemistry
- ❖ Master of Management in leadership and strategy

Mission

Our network offers easy access to the most renowned health institutions and testing hubs within healthcare in the Nordics.

Professional expertise provides predictability and solid services based on real customer needs.



Main objective

Strategic areas and
need driven innovation
for Health Institutions

Requests from
companies



Effective and better
healthcare services

New products and services
that are targeted to the
market

Why is the Nordics a superior test arena?

Top three core qualities survey results¹⁾

1. The Nordic region provides equitable healthcare to all
2. The Nordic healthcare system is characterized by **high quality and knowledge**
3. Nordic countries are **early adopters** of new treatments and technology



27 million people

Learn market needs and
healthcare systems for
future market entry!

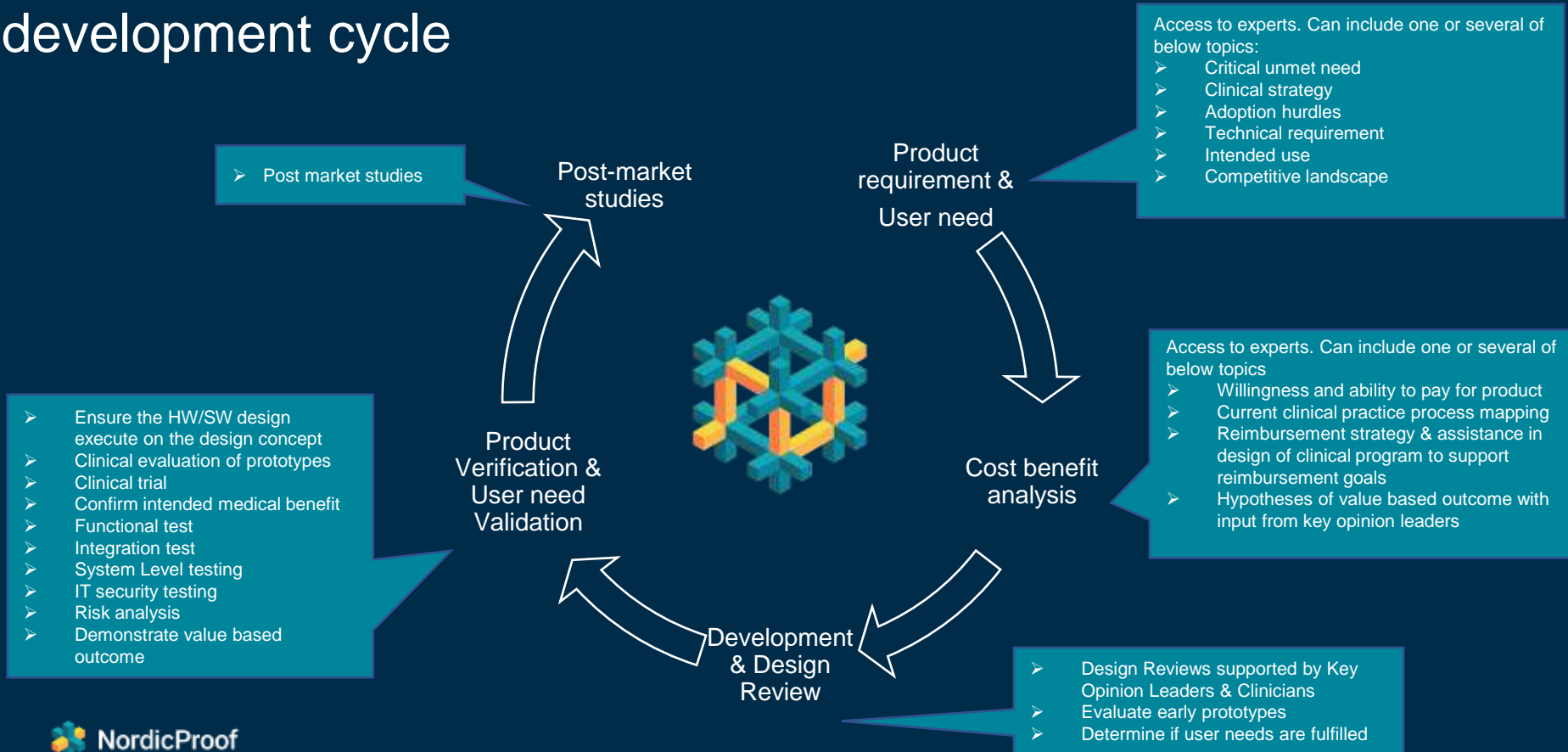
What we offer to the health industry

- One point of contact to a network of world class health institutions in the Nordics.
- Efficient, transparent and on time services.
- Tested with Nordic quality and expertise from idea to finished product.

Nordic Proof – a way the get to know the Nordic market and their needs



Services throughout your development cycle



Fixed price workshop package



Content and process:

- Order the service package through our website
- Nordic Proof coordinator check availability of experts (2-3 experts per workshop) with relevant Nordic Proof partner(s).
- Nordic Proof coordinator create semi-structured interview guide with input from company.
- Selected Nordic Proof partner(s) recruit relevant experts.
- 1/2 day workshop conducted with company and recruited experts at partner(s) test facility.
- Nordic Proof partner(s) write report with findings and recommendations.

Price:

€3000 for one workshop including the development of interview guide

€2000 per additional workshop



Case – Independence Gear

- Started out testing with innovation department at Sunnaas Hospital in their home market
- Scaled user test to VihTek in Copenhagen and Danderyd in Stockholm
- Launching first product to market
- Now starting to develop product number two together with users at Sunnaas hospital



“Without access to real life testing facilities at the Nordic Proof partners, we would not have products in the market, says Carl Christian Sole Semb in the Norwegian med-tech company Independence Gear”



Case – Rabmed – conducting a market study

- ✿ Early phase prototype of needle-free connector for glass ampoules
- ✿ Designed an interview guide together with Nordic Proof
- ✿ Conducting one day on-site interview with health professionals
 - ✿ Helsinki
 - ✿ Stockholm
 - ✿ Oslo
- ✿ Each test facility wrote a sum up report from the interview
- ✿ The company got important feedback for their further development process and market strategy



“We came in selling the product as if we were doing a sales pitch. We soon realized that the meetings were most valuable to us if we sat back and allowed them to be brutally honest - almost prompting their most critical feedback”

Marius Andresen, serial entrepreneur

AmpuSeal

The process for Nordic Proof inquiries



1

Fill out the form

The inquiry form is filled in and the more detailed information you can provide, the better we can match you with the right partner(s) that offer the service you are looking for.



2

We connect you

When the inquiry form has been received we will review and connect you to the most suitable partner(s) who will reply directly to you.



3


Testing and documentation


The actual testing will be done at the chosen partner's site, and will also be responsible for all documentation after completion.



Fill out the form

www.nordicproof.org

 NordicProof

About Partners Services Cases Events [Send inquiry](#) 

PLEASE FILL IN THIS FORM TO SEND INQUIRY

Please fill in the scheme below and send it to our network coordinator.

We would like to know more about your company and get a first description of the test you would like us to perform.

We will get in contact with you as soon as we have feedback.

Your inquiry

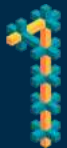
* Company name	* Company address (City and country)
<input type="text"/>	<input type="text"/>
* Contact person	* Contact mail
<input type="text"/>	<input type="text"/>
* Contact phone	* Company web site
<input type="text"/>	<input type="text"/>

Product description

- Medical device class I
- Medical device class IIa
- Medical device class IIb
- Medical device class IIc
- Medical device class III
- E-health solution
- Rehabilitation / training device
- Active implantable device
- Non classified / non-medical

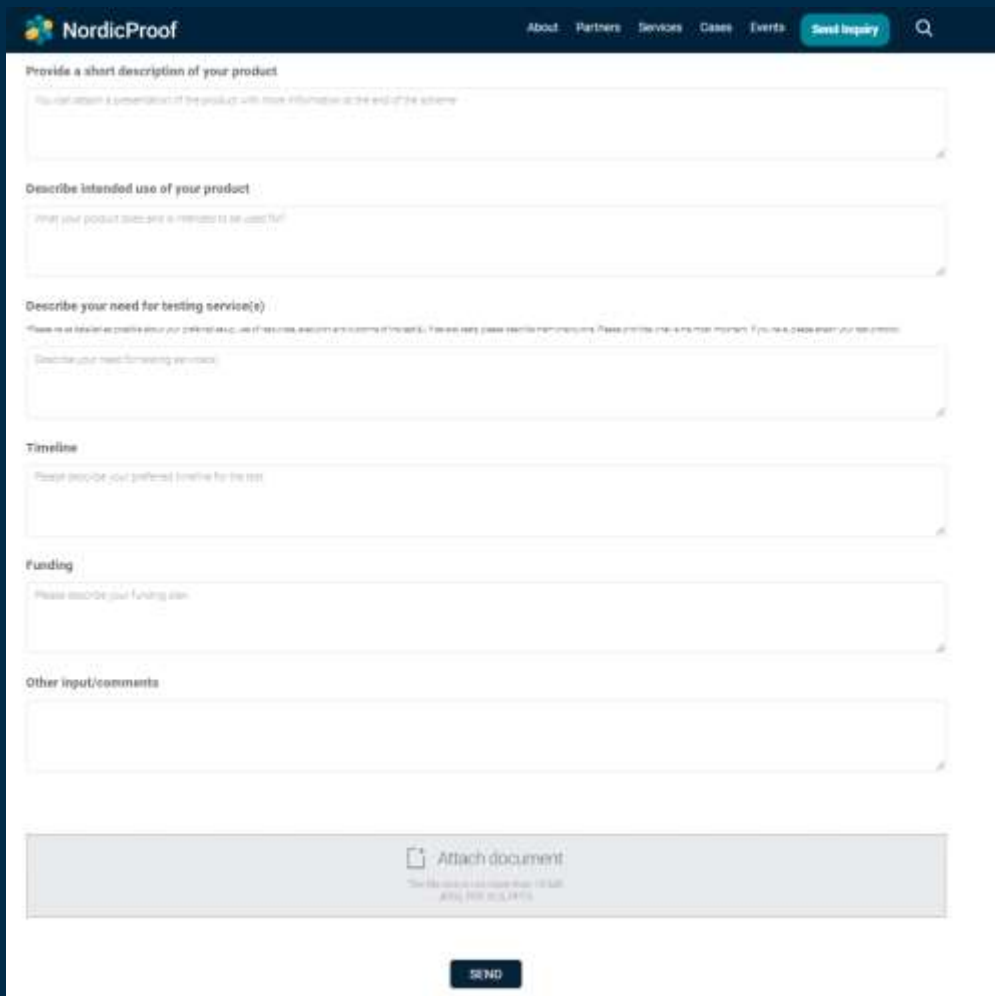
Product development status

- Early concept phase
- Prototype phase
- Pre-market product
- CE-marked product
- Other



Fill out the form

www.nordicproof.org



The screenshot shows the NordicProof website's inquiry form. At the top, the NordicProof logo is on the left, and navigation links for 'About', 'Partners', 'Services', 'Cases', 'Events', and a 'Send Inquiry' button are on the right. The form itself is a white page with several sections, each with a title and a text input field:

- Provide a short description of your product**: The input field contains the placeholder text: "You can obtain a better insight of the product with more information at the end of the scheme".
- Describe intended use of your product**: The input field contains the placeholder text: "What your product does and is intended to be used for?".
- Describe your need for testing service(s)**: The input field contains the placeholder text: "Please describe the specific and/or general use of the test, explain any concerns if relevant. Please also provide details regarding the test, provide contact information. You may also enter your contact details".
- Timeline**: The input field contains the placeholder text: "Please describe your preferred timeline for the test".
- Funding**: The input field contains the placeholder text: "Please describe your funding plan".
- Other input/comments**: An empty text input field.

At the bottom of the form, there is a grey bar with an 'Attach document' button and a 'SEND' button.

Available for one-to-one meetings

Nordic Proof test partners:

- OuluHealth Labs, Finland
- HUS Testbed, Finland
- Danderyd Hospital, Sweden
- Nordic Medtest, Sweden
- Sunnaas Hospital, Norway
- Norwegian SmartCare Lab, Norway

Unfortunately the following Nordic Proof partners will not be available for one-to-one:

- VihTek, Denmark
- The Intervention Centre, Oslo University Hospital, Norway

Regulatory experts: Kami Faust and Claudia Dannehl

Nordic Proof Coordinator: Siri Stabel Olsen

Moderator: Bent-Håkon Lauritzen



Welcome to Nordic Proof

www.nordicproof.org



Bridging today's health solutions with the
unlimited potential of tomorrow





Navigating the Regulations for e-Health Companies

Norway Health Tech
Kami Faust, Regulatory Advisor
2 June 2021

Norway Health Tech Academy



- Addressing the increasing need for competence within the regulatory field.
- Focusing on the development of medical device and in-vitro diagnostics, in EU and other relevant markets.
- Building confidence in start-up and scale-up companies through training, both in content and performance.
- Bringing the experts to Norway Health Tech members and others.
- Giving guidance on regulatory matters.



Norway Health Tech Academy

Training and Courses



Norway
Health Tech
Academy

**Organizational
strategy**

Company set-up

Innovation

Business
development

Design sprints

IP & Patent

**Presentatio
n**

Pitch and
performance
training

Content training

**Digitalizatio
n**

Trends and
demands

Regulatory



Norway Health Tech Academy

Training and Courses



Norway
Health Tech
Academy

Organizational strategy

PRRC training

Design control

ISO 13485

ISO 14971

Clinical series

UK Market

SaMD

US FDA

Innovation

Presentation

Digitalization

Regulatory

Person Responsible for Regulatory Compliance

Design control for medical devices and Project Management

Medical devices — Quality management systems — Requirements for regulatory purposes

ISO 14971:2019 – Medical devices — Application of risk management to medical devices

Clinical Evaluation and Investigation Series

Brexit: What changes and how to handle challenges for Norwegian healthcare companies – 3.6

Software as a Medical Device Classification – Clarification of MDR Rule 11 – 10.6

Overview of the US FDA Regulations – End of June



e-Health Solutions

e-Health is applying digital technology into healthcare practice.

Solutions may range from using the Internet to provide healthcare services to IoT devices and mobile apps.

Examples:

- **Electronic health record** - enabling the communication of patient data between different healthcare professionals
- **ePrescribing** - access to prescribing options, printing prescriptions to patients and sometimes electronic transmission of prescriptions from doctors to pharmacists
- **Telemedicine** - physical and psychological diagnosis and treatments at a distance
- **Telesurgery** - use robots and wireless communication to perform surgery remotely
- **Consumer health informatics** - use of electronic resources on medical topics by healthy individuals or patients
- **m-Health** - use of mobile devices in collecting health data, providing healthcare information, real-time monitoring, and direct provision of care
- **Healthcare information systems** - software solutions for appointment scheduling, patient data management, work schedule management and other administrative tasks surrounding health



Crossing the line from e-Health Solution to Medical Device

- Does your Solution meet the definition of a Medical Device?
- Does your Solution meet the definition of Medical Device Software (MDSW)?
- What is the Intended Purpose of your Solution?
- How do you meet the (EU) 2017/745 Medical Device Regulation (MDR) requirements?
 - Classification
 - Technical Documentation
 - Clinical Evaluation Report



Medical Device – (EU) 2017/745 MDR

Medical Device means any instrument, apparatus, appliance, software, implant, reagent, material or other article intended by the manufacturer to be used, alone or in combination, for human beings for one or more of the following specific medical purposes:

- diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease,
- diagnosis, monitoring, treatment, alleviation of, or compensation for, an injury or disability,
- investigation, replacement or modification of the anatomy or of a physiological or pathological process or state,
- providing information by means of in vitro examination of specimens derived from the human body, including organ, blood and tissue donations,

and which does not achieve its principal intended action by pharmacological, immunological or metabolic means, in or on the human body, but which may be assisted in its function by such means.

The following products shall also be deemed to be medical devices:

- devices for the control or support of conception;
- products specifically intended for the cleaning, disinfection or sterilization of devices as referred to in Article 1(4) and of those referred to in the first paragraph of this point.



Medical Device Software



Medical Device Software (MDSW) is software that is intended to be used, alone or in combination, for a purpose as specified in the definition of a “medical device” in the medical devices regulation or in vitro diagnostic medical devices regulation.

Reference - MDCG 2019-11 Guidance on Qualification and Classification of Software in Regulation (EU) 2017/745 – MDR and Regulation (EU) 2017/746 – IVDR



Intended Purpose

Confirmation, or not, of whether the product being considered fits the definition of a “medical device” and therefore whether or not the regulation applies.

The basis for the classification of the future planned device into one of the four classes of device.

Core text which is needed for the future labelling, instructions, promotional or sales materials, the clinical evaluation and the technical documentation.

“the use for which a device is intended according to the data supplied by the manufacturer on the label, in the instructions for use or in promotional or sales materials or statements and as specified by the manufacturer in the clinical evaluation”



Medical Device Classification – MDR Annex VIII

- Rules 1-4 – Non-Invasive Devices
 - Any device which does not penetrate the body through an orifice or the surface of the body.
- Rules 5-8 – Invasive Devices
 - Any device which, in whole or in part, penetrates inside the body, either through a body orifice or through the surface of the body
- Rules 9- 13 – Active Devices
 - Any device whose operation depends on a source of energy other than that generated by the human body for that purpose, or by gravity, and which acts by changing the density of or converting that energy
- Rules 14-22 – Special Rules

Classes of Medical

Device

- Class I (low risk)
- Class Ia (medium risk)
- Class Ib - delivered sterile
- Class IIa (medium risk)
- Class IIb (medium/high risk)
- Class Im - measuring function
- Class III (high risk)
- Class Ir - reprocessed



Technical Documentation Requirements

Technical Documentation is a compilation of all relevant documents for a product which gives the evidence that a medical device meets the **general safety and performance requirements** (GSPRs) of the MDR.

No matter the class of the medical device technical documentation must always be available and maintained throughout the lifecycle of the device.

General Safety and Performance Requirements

Devices shall achieve the performance intended by their manufacturer and shall be designed and manufactured in such a way that, during normal conditions of use, they are suitable for their intended purpose. They shall be safe and effective and shall not compromise the clinical condition or the safety of patients, or the safety and health of users or, where applicable, other persons, provided that any risks which may be associated with their use constitute acceptable risks when weighed against the benefits to the patient and are compatible with a high level of protection of health and safety, taking into account the generally acknowledged state of the art.



Clinical Evaluation Report

Clinical Evaluation is a systematic and planned process to continuously generate, collect, analyse and assess the clinical data pertaining to a device in order to verify the safety and performance, including clinical benefits, of the device when used as intended by the manufacturer.

Clinical Data is Information concerning safety or performance that is generated from the use of a device and is sourced from the following:

- clinical investigation(s) of the device concerned,
- clinical investigation(s) or other studies reported in scientific literature, of a device for which equivalence to the device in question can be demonstrated,
- reports published in peer reviewed scientific literature on other clinical experience of either the device in question or a device for which equivalence to the device in question can be demonstrated,
- clinically relevant information coming from post-market surveillance, in particular the post-market clinical follow-up

Clinical Investigation is any systematic investigation involving one or more human subjects, undertaken to assess the safety or performance of a device.





We at Norway Health Tech are here to help so please feel free to reach out with any questions.

And don't forget to register for our June 10th round table discussion on [Software as a Medical Device Classification - Clarification of MDR Rule 11](#)



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*Lauren Willgeroth
Claudia Dannehl*

LINK Medical GmbH, Berlin



Clinical Evaluation for Software as a Medical Device (SaMD)

June, 2nd 2021

*Presentation reflects current knowledge and own opinion of the authors.
No guarantee for correctness of any of the provided information.
Any liability is excluded.*

> Who we are: LINK Medical



- Clinical Research Organisation in Northern Europe
- Founded in 1995
- 190 employees
- Full-service for Clinical Studies in Pharma, Medical Device & Combination Products



Provided services for medtech/digital health:

- Ad-hoc consultancy
- Deep-dive feasibility assessments for planned business (regulatory/market access/reimbursement)
- Target Product Profile or training workshops
- Outsourced regulatory/quality related tasks

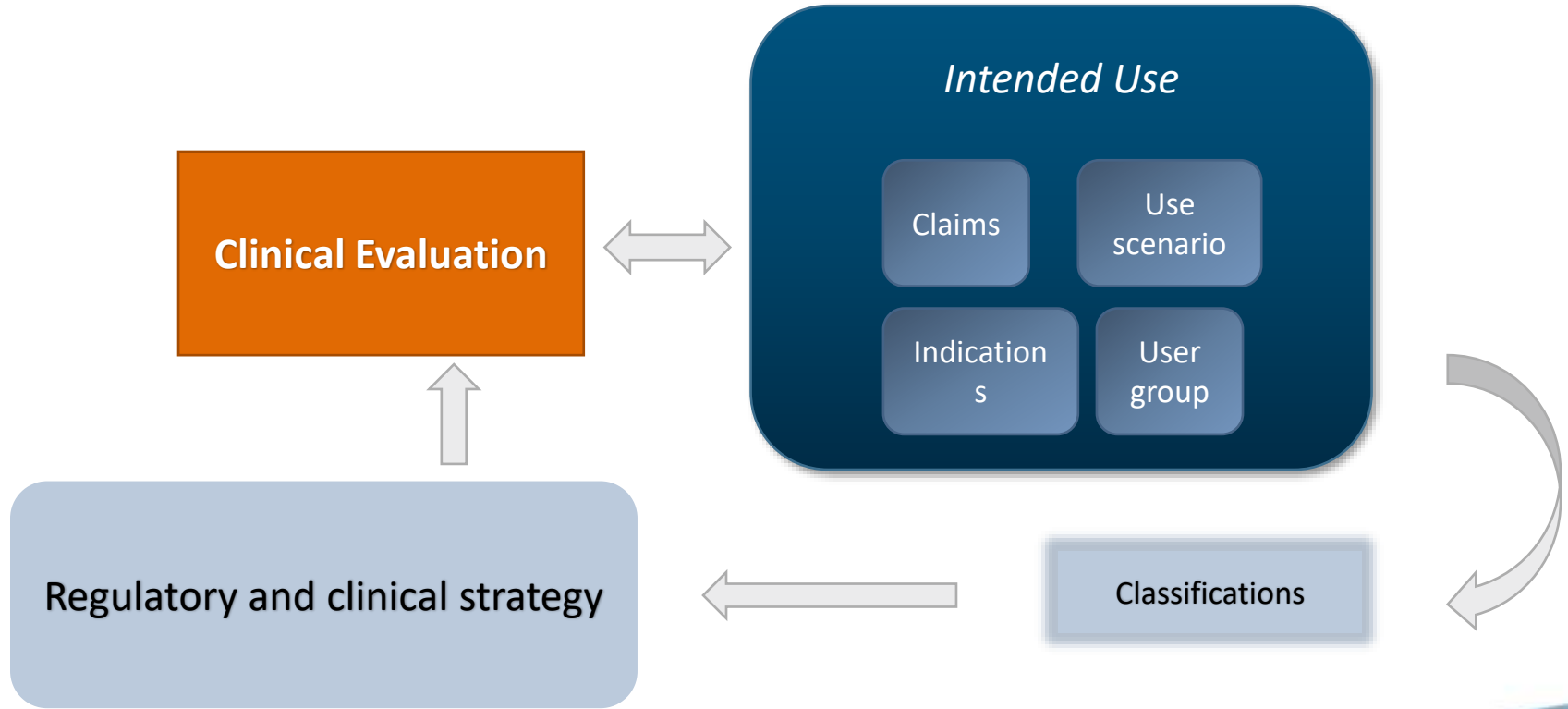
> Who we are: Medical Devices Germany



Dr. Claudia Dannehl

Claudia.Dannehl@linkmedical.eu

> Consequences



> Clinical Evidence Reading Assignments



- Medical Device Regulation EU/2017/745 (MDR)
- MDCG 2020-5 Guidance on Clinical Evaluation – Equivalence
- **MDCG 2020-1 Guidance Clinical Evaluation Software and IVDR**
- IMDRF MDCE WG/N55FINAL:2019 - Clinical Evidence - Key Definitions and Concepts
- IMDRF MDCE WG/N56FINAL:2019 - Clinical Evaluation
- IMDRF MDCE WG/N57FINAL:2019 - Clinical Investigation
- IMDRF/SaMD WG/N41FINAL:2017 - Software as a Medical Device (SaMD): Clinical Evaluation
- **MEDDEV 2.7.1/Rev 4 – Clinical evaluation: a guide for manufacturers and notified bodies under Directives 93/42/EEC and 90/385/EEC**
- ISO 14155 Clinical investigation of medical devices for human subjects -- Good clinical practice

... and more for Legacy Devices, PMCF

> MDR/IVDR: Responsibility for clinical planning



Clinical data and CLINICAL EVALUATION* results [...] of a sufficient amount and quality to allow a qualified assessment of whether the device is safe and achieves the intended CLINICAL BENEFIT(S), when used as intended [...]

(Art. 2 (51) MDR / Art. 2 (36) IVDR)

** syn. PERFORMANCE EVALUATION for IVDs*

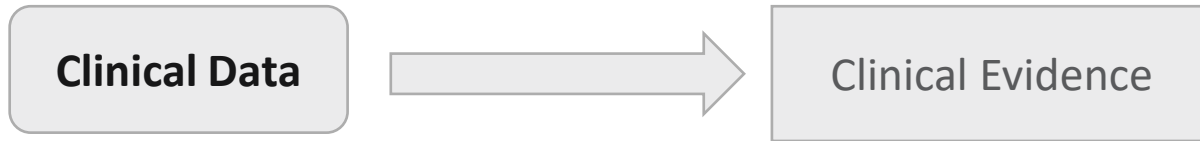
The manufacturer shall specify and justify the level of CLINICAL EVIDENCE necessary to demonstrate conformity with the relevant GSPR. That level of CLINICAL EVIDENCE shall be appropriate in view of the characteristics of the device and its intended purpose

(Art. 61 (1) MDR/ Art. 56 (1) IVDR)

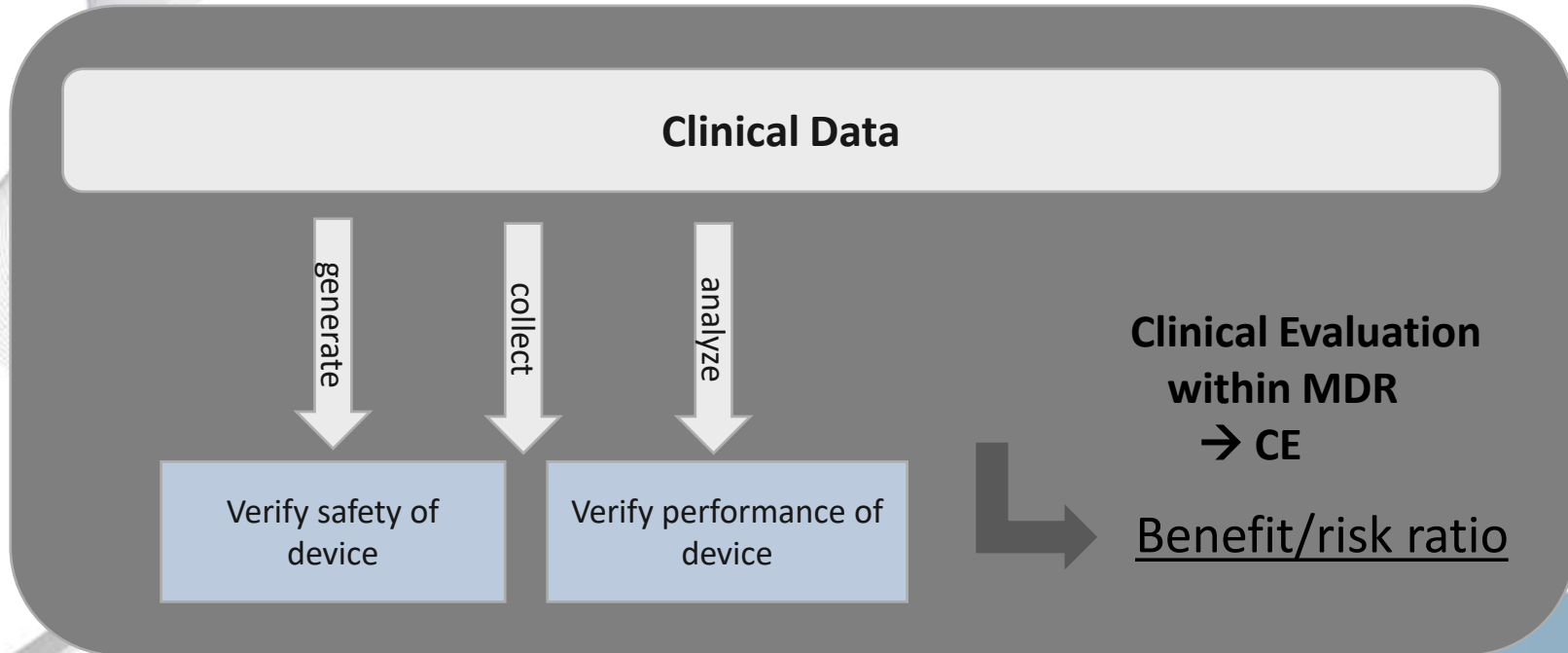
> Clinical Evidence



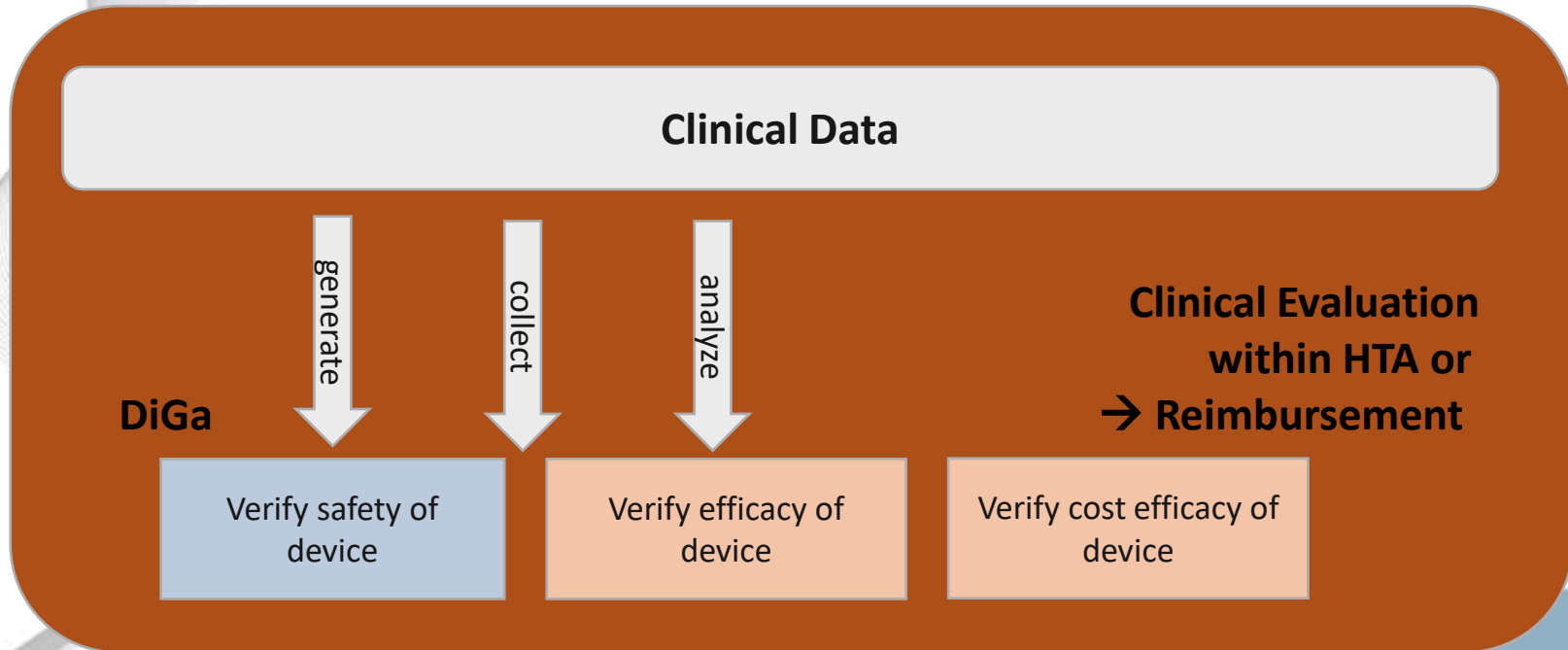
- Real clinical context
- Clinical risks
- Benefit for the patient



Mandatory for ALL medical devices!



NOT mandatory for medical devices!



Valid Clinical Association

Valid clinical association between software output and targeted clinical outcome?

Analytical Validation

Does software correctly process input data to generate accurate, reliable, and precise output data?

Clinical Validation

Does use of software output data achieve your intended purpose in your target population in the context of clinical care?

Valid Clinical Association

Existing evidence:

- Literature searches,
- Original clinical research
- Professional society guidelines

New evidence:

- Secondary data analysis
- Perform clinical trials

→ *state of the art*

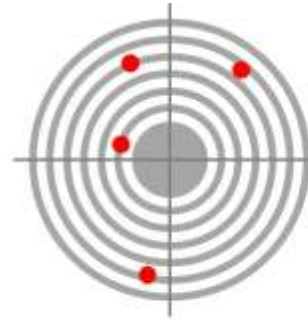
> Clinical Evaluation with CE Conformity Assessment



High accuracy, good precision,
good trueness



Low accuracy, poor precision,
good trueness



Low accuracy, low precision,
poor trueness



Low accuracy, high precision,
poor trueness

Analytical Validation

Verification and Validation activities:

- (a) Does your software meet its specifications?
- (b) Do specifications conform to user needs and intended uses?

Note: IVD requirements might be relevant

> Clinical Evaluation with CE Conformity Assessment



Clinical Validation

Address:
Intended use, target population
User can achieve results!


> Clinical Evaluation with CE Conformity Assessment



Valid Clinical Association

Analytical Validation

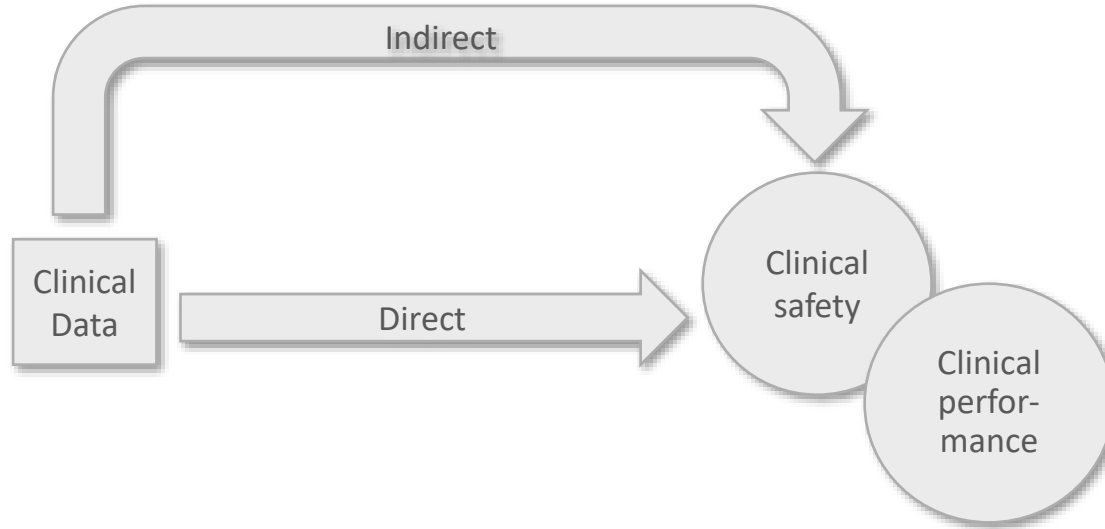
Clinical Validation

- 
- Perform ongoing data analysis
 - Modify intended use to one that can be supported by available evidence
 - Modify the target clinical association
 - Make changes to software

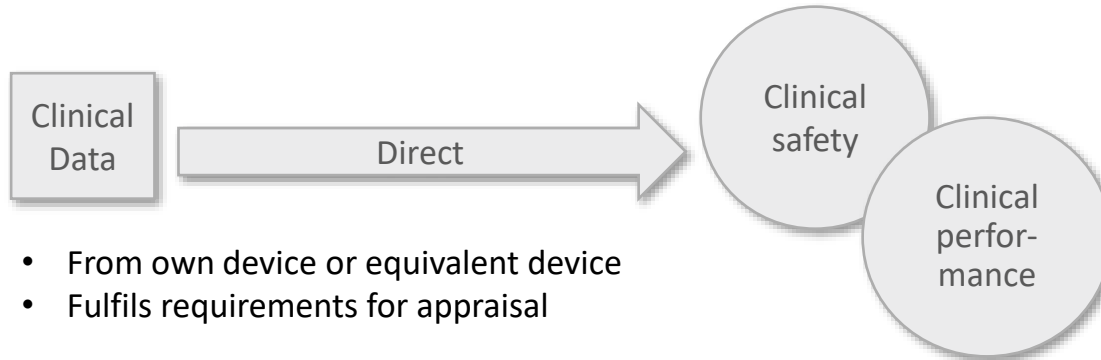
Clinical Data

How and where can we get them?

> Definitions



Pivotal Data



- From own device or equivalent device
- Fulfils requirements for appraisal

Valid clinical association

Analytical performance

Clinical validation

Clinical Data

Clinical Studies for own product

Clinical Studies /
Reports /
Data from Equivalent Devices
(Literature)

Relevant clinical
information from
PMS and PMCF

Information from
previous product
variants

Own data from verification /
validation activities

Product-specific
norms / standards

Usability Evaluation,
Risk Management

Valid clinical associati

ion

We're just starting to plan our evaluation. Which methods should we consider?

All of them.



freshspectrum.com

Clinical Studies for own product

clinical from MCF

Information from previous product variants

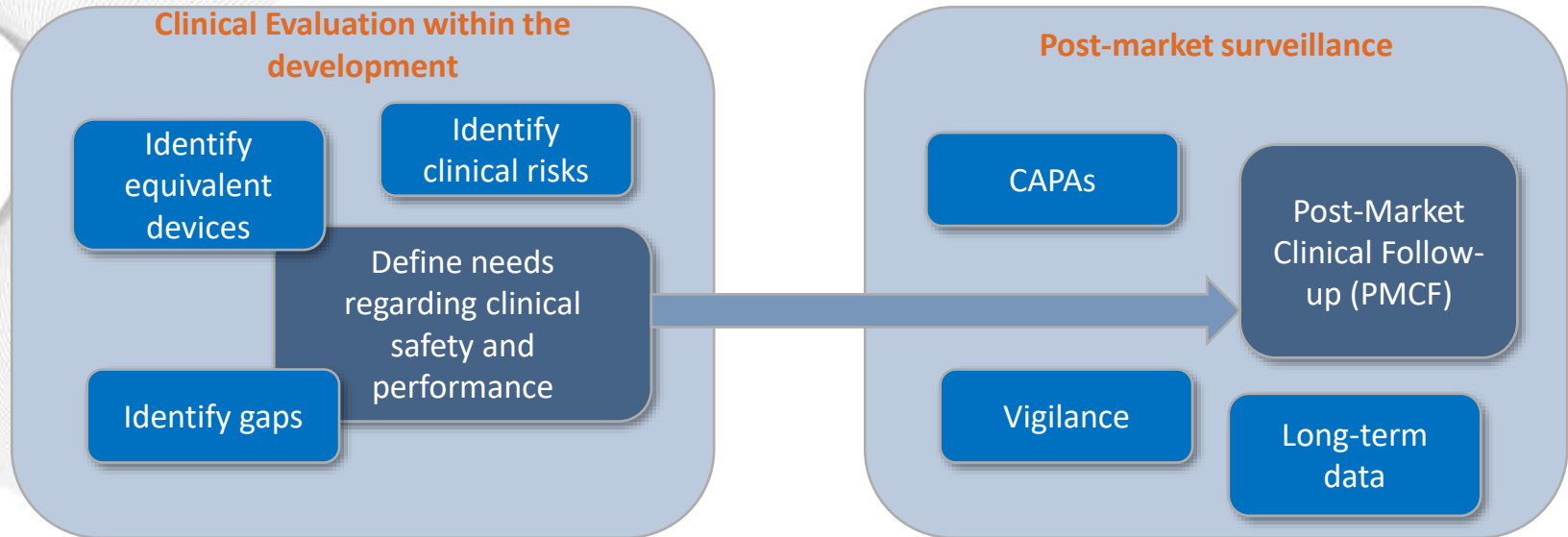
Own

validation activities

norms / standards

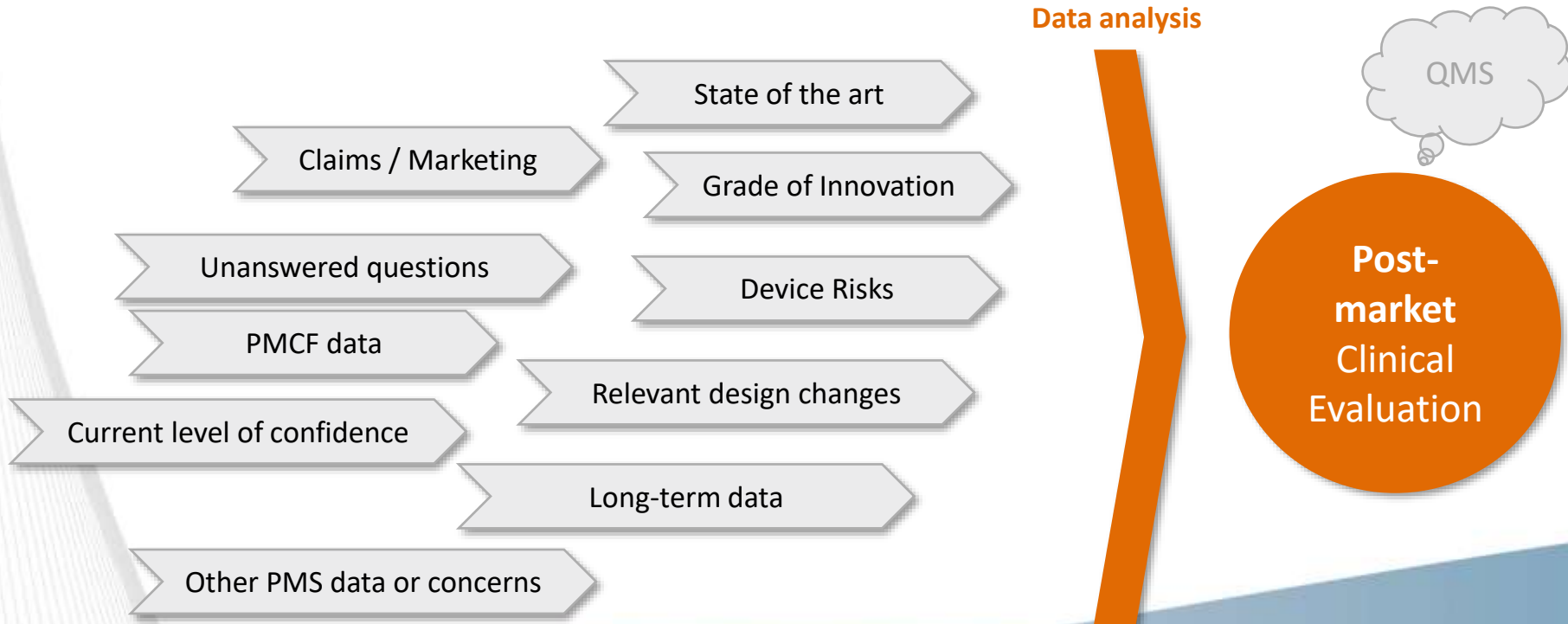
Usability File, Risk Management

> Clinical Evaluation: data sources



Rule: the shorter the product innovation is on the market, the more effort has to be spent during post-market surveillance

> Clinical Evaluation: data sources



> Literature Searches

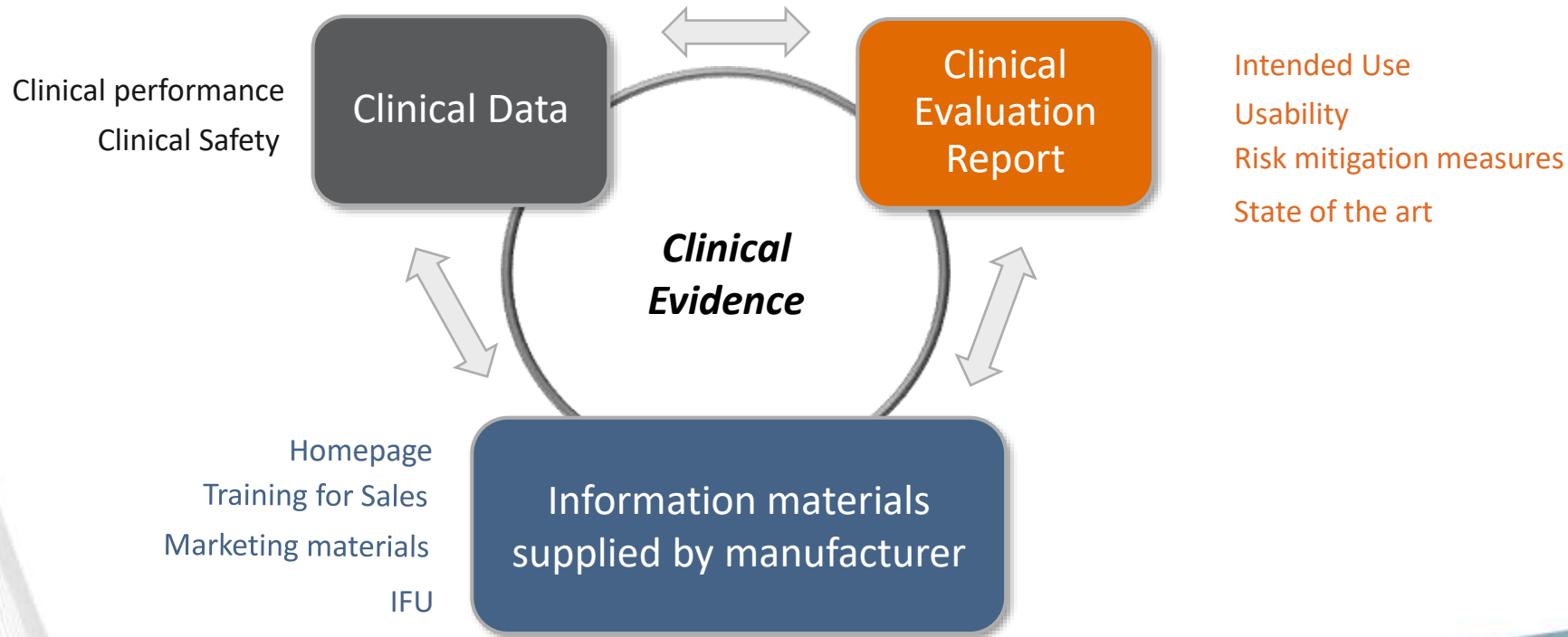


The screenshot shows a PubMed search results page for the term "health". The search results are displayed in a list format, with the top results highlighted as "Best matches for health:". The first result is "Challenges and Opportunities in Global Mental Health: A Research-to-Practice Perspective" by Wangberg ML et al. (2017). The second result is "Public mental health" by Linden J et al. (2017). The third result is "Designing a Community-Scaled Population Health Model" by Dunath CJ et al. (2018). The search results are sorted by "Relevance" and are displayed on page 20 of 20. The page also includes a sidebar with filters and a search bar.

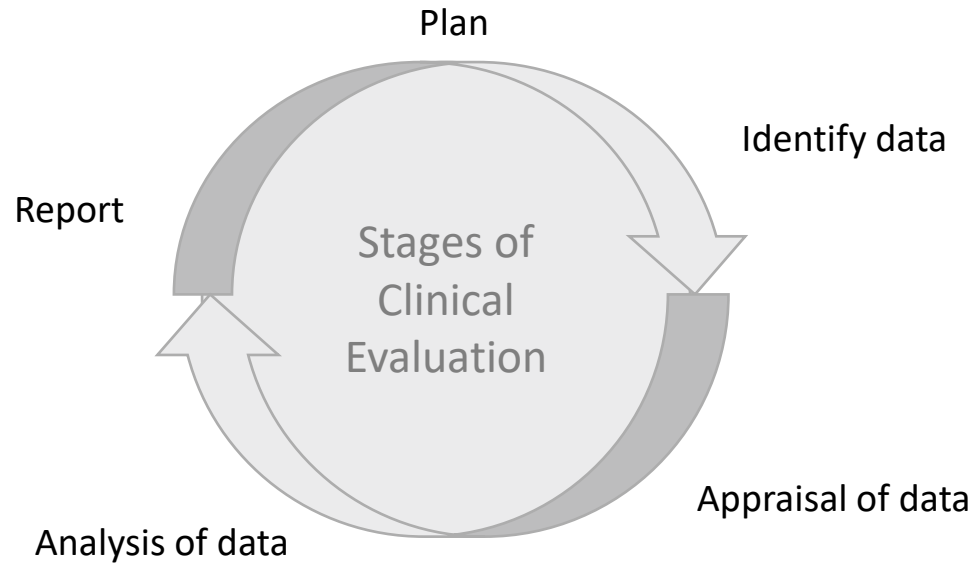
Validity of data? Bias?
Search algorithm?
Appropriate databases?
Equivalence?
Requirements to authors...

MEDDEV 2.7.1. Rev. 4

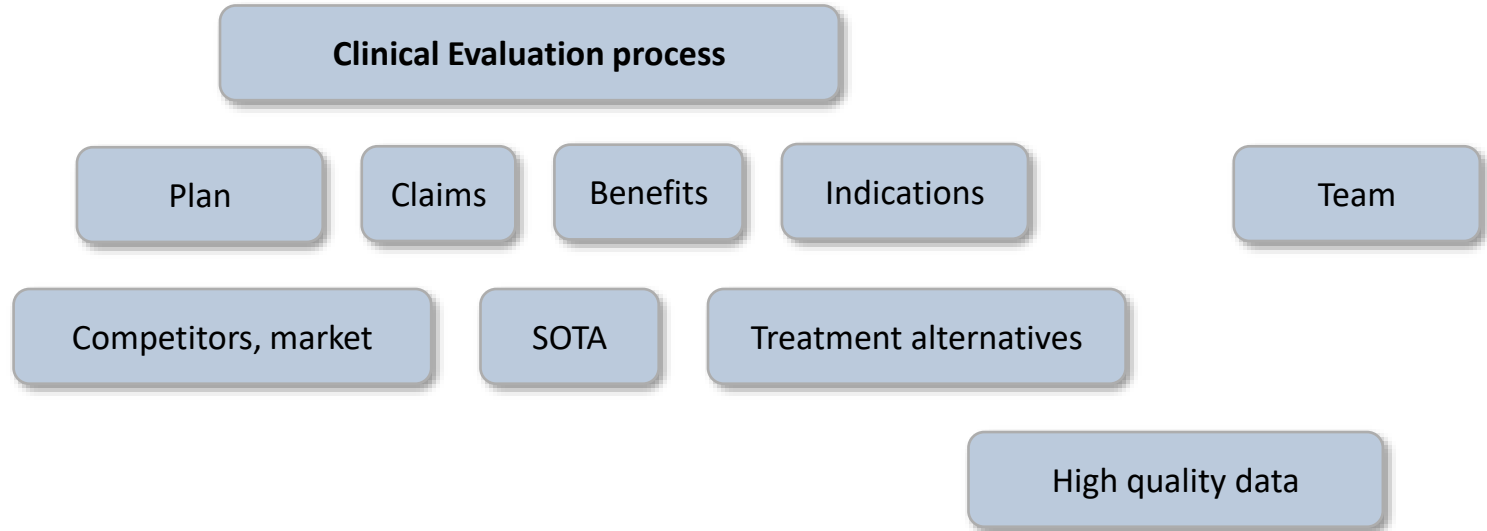
> Clinical Evaluation: goal



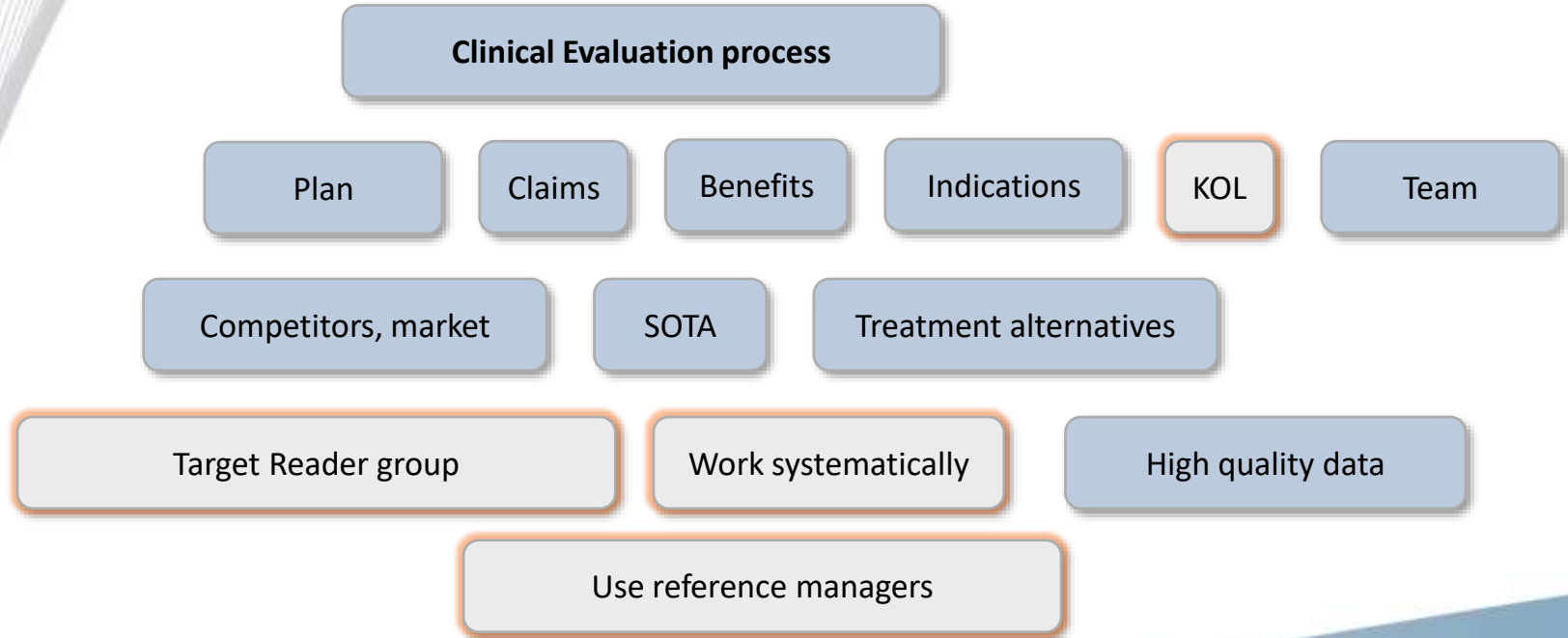
> Clinical Evaluation within CE Conformity Assessment



> Clinical Evaluation Hacks



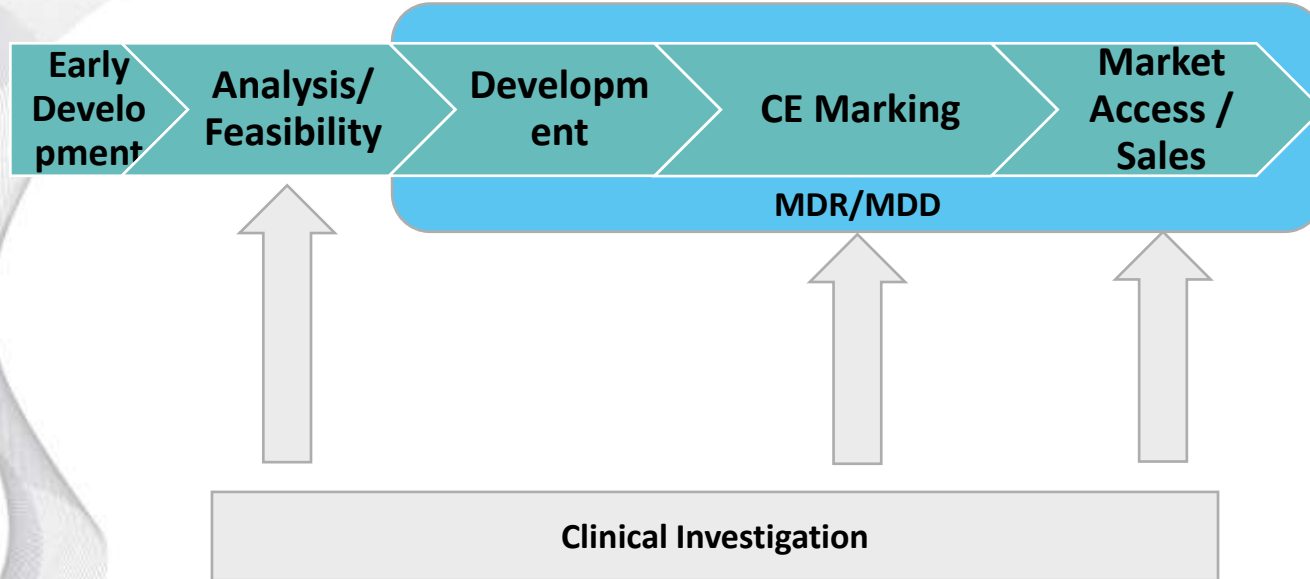
> Clinical Evaluation Hacks



A photograph of several medical professionals in white lab coats sitting around a table, engaged in a discussion. One woman in the center is smiling and looking towards the left. There are papers and a laptop on the table.

> Clinical Investigations in Humans

> Clinical Investigations: Study types



> Clinical Investigations: Study Types

• **Interventional studies**

- Follows study protocol -> standardized, „artificial“ data
- Patients treated „outside“ standard of care with non-CE marked device
- Example: Safety and performance, Efficacy, Effectiveness
- **Need approval by Regulatory Authority and Ethics Committee**

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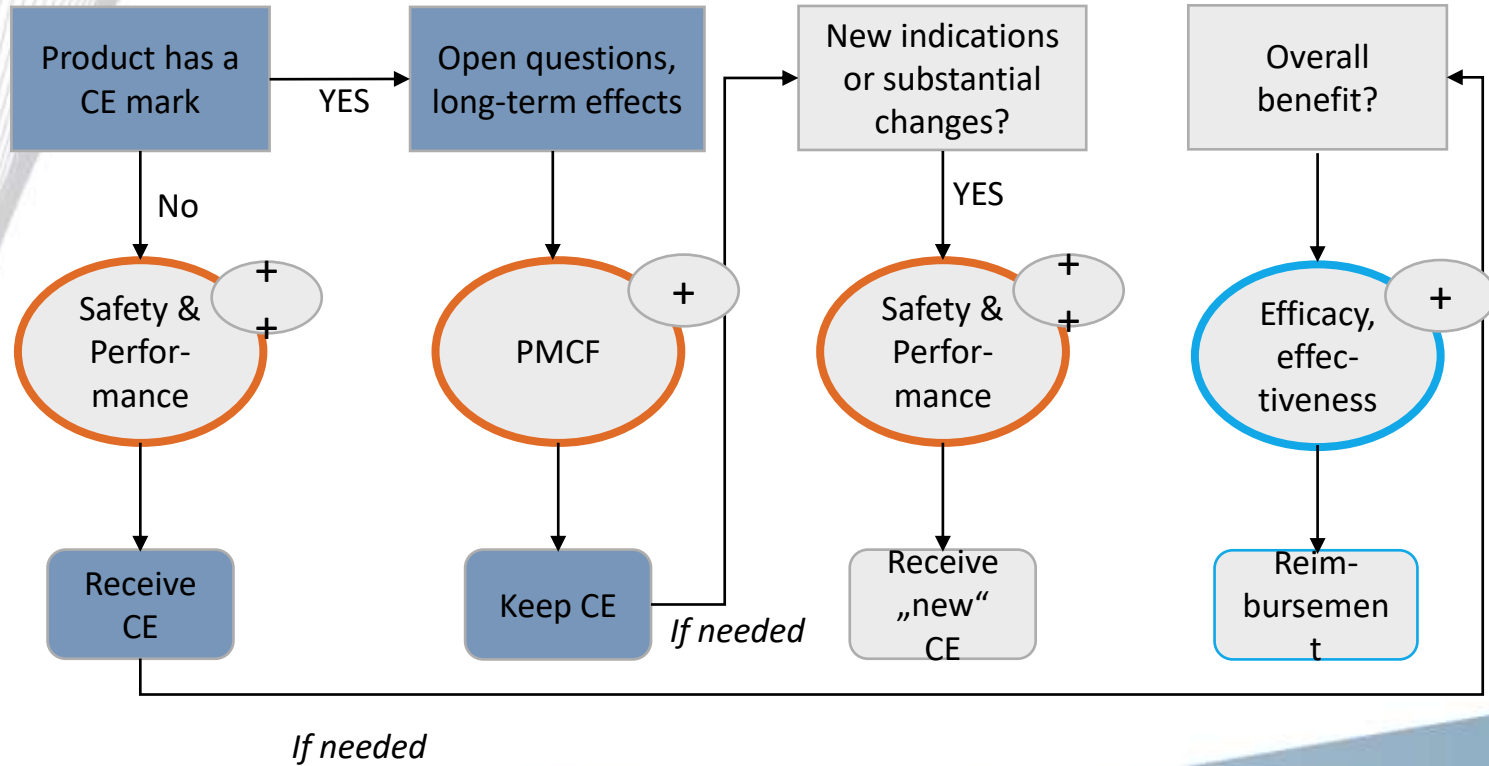
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• **Non-Interventional studies**

- Follows clinical routine -> Real World Data
- Patients treated „inside“ standard of care with CE-marked device
- Example: PMCF, Efficacy, Effectiveness
- **Need approval by Ethics Committee** (study start needs to be notified to Regulatory Authorities and health insurer associations)

+

> Clinical Investigations: Study types





> Clinical Investigation: Study Design

- Sponsor initiated; Investigator initiated
- Interventional, Non-Interventional
- Monocentric, Multicentric
- National, International
- Controlled
 - Randomized
 - Open
 - Single Blind, Double Blind
 - Parallel group
 - Cross over
- Comparator
 - Sham-Device, Sham-Procedure, etc. => Placebo
 - Other Medical Device

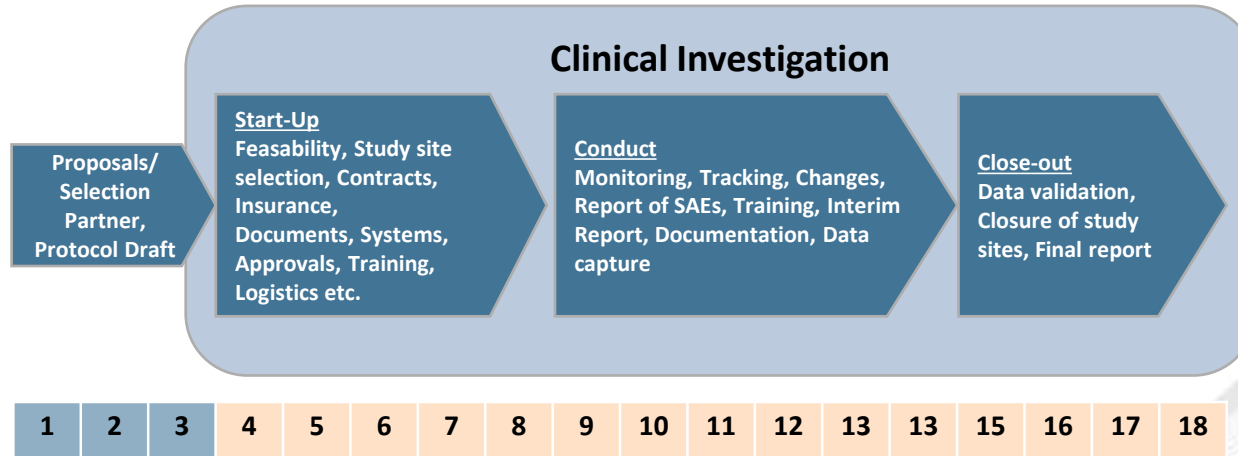
• Randomized Controlled Trial

> Clinical Investigation: Medical Device vs. Pharma

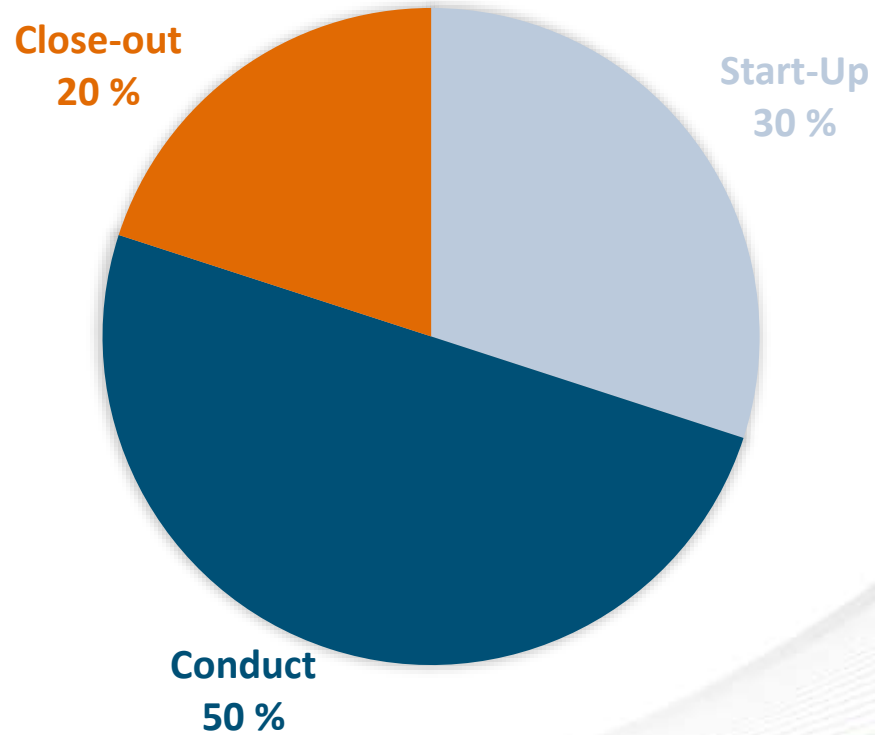


<p>Medicinal product</p> 	<p>Phase I Small study (20-100; healthy or with condition) to determine preliminary safety and dosage</p>	<p>Phase II Larger study (200-500 with condition) to determine efficacy and adverse effects</p>	<p>Phase III (Pivotal) Big study (600-1000 with condition) to determine efficacy and monitor adverse effects</p>	<p>Phase IV Post-marketing study to collect long-term data</p>
<p>Medical Device</p> 	<p>Pilot Small study (10-30) to determine preliminary safety and performance</p>	<p>Pivotal Larger study (150-300) to determine safety and performance</p>		<p>PMCF Long-term data, unanswered questions</p>

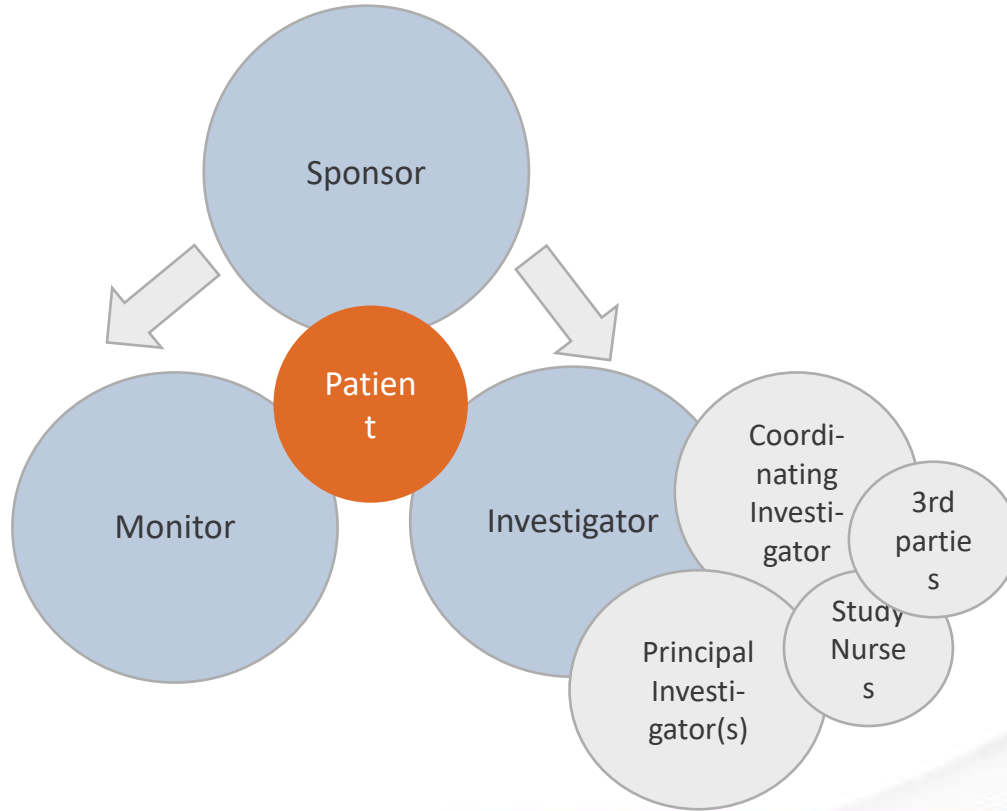
> Clinical Investigations: Phases



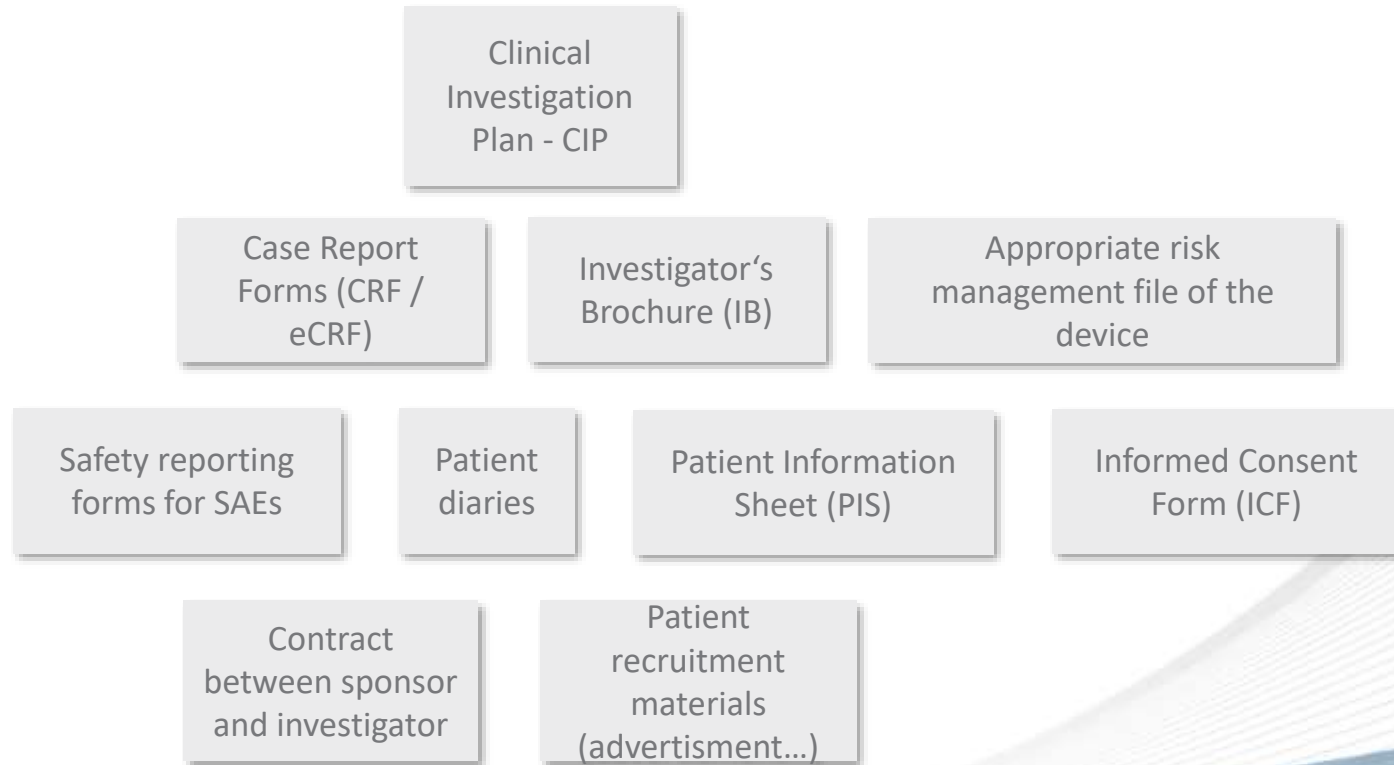
> Cost distribution per phase



> Clinical Investigations: Main Involved Parties



> Start-up: Key documents for EC/RA Approval





Clinical Evaluation for SaMD

03.06.2021

Claudia Dannehl

Claudia.Dannehl@linkmedical.eu



Agenda

- 12:00 pm Welcome and short intro to Nordic Proof and the program
Siri Stabel Olsen, Coordinator Nordic Proof
- 12:10 pm Navigating the regulations for e-Health companies.
Kami Faust, Regulatory Advisor at Norway Health Tech
- 12:25 pm Clinical Evaluation for Software as a medical device
Claudia Dannehl, Medical Device Manager at Link
- 12:45 pm An e-Health companies' journey from concept to submission
Anders Aune, CEO at Picterus
- 1:00 pm Closing of webinar. One2One meetings in separate online meeting rooms
- 3:00 pm End program



eHealth solutions
with global impact



Anders Aune, CEO

Picterus AS



140+ million babies are born every year

60 – 80% of these will get jaundice

100,000 deaths
175,000 babies with
brain damage

Jaundice is the **number one** reason for hospital readmission after birth in high income countries

Current solutions

Blood sample



Transcutaneous reader



Accurate but expensive

Visual inspection



Cheap but unreliable

The Picterus app



State-of-the-art bio-optics
Physics based simulations
Color calibration card & app

Affordable



Easy-to-use
Used in any setting

Available



Immediate results
High accuracy

Accurate

Picterus screening tool

System of 3 components:

Smartphone
application

Image analysis
on server

Color
calibration
card

Intended use:

- Screening tool – not diagnosis
- 1st version for health care workers
- Assist in jaundice assessment
- Skin type and phone limitations

Later versions:

- Parents as users
- All skin types
- “All” phones
- New markets

Relevant risks – clinical evaluation

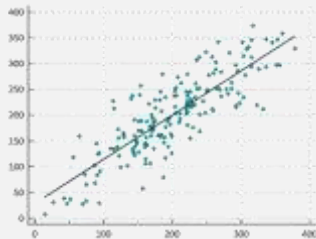
POTENTIAL HAZARD	FORESEEABLE SEQUENCE OF EVENTES	HAZARDOUS SITUATION AND HARM	RISK MITIGATION
Transcutaneous levels of bilirubin are not correlated to serum levels	Serum bilirubin levels cannot be detected on skin surface	Detection of jaundice might be false negative and therefore misdiagnose	Perform clinical literature search
Bilirubin estimates obtained from digital images are not correlated to serum levels	Serum bilirubin levels cannot be detected by digital imaging	Detection of jaundice might be false negative and therefore misdiagnose	Perform clinical literature search
Picterusestimates are not correlated to serum levels	Serum bilirubin levels cannot be detected by Picterus	Detection of jaundice might be false negative and therefore misdiagnose	Perform clinical studies

Clinical studies

- Patient group: Term born, normal birth weight with and without jaundice
- Bilirubin in blood sample (gold standard) compared to estimates from Picterus app

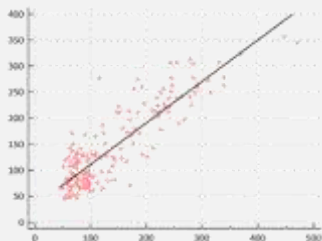
Norway:

- › St.Olav and Ahus
- › 301 newborns



Mexico:

- › Irapuato
- › 166 newborns



	Norway	Mexico
Correlation (Pearson)	0.84	0.87
Standard error of estimate	43 umol/l	43 umol/l
Sensitivity (Severe jaundice)	100%	90 %
Specificity (Severe jaundice)	67%	90 %

*Extensive data-base of clinical data collected:
Norway, Mexico, Nepal, Indonesia and
Uganda.*

1400+ data sets of newborns

Enabling AI improvements of system

Our Journey

Company

- Idea 2012
- Master thesis 2014
- Company founded 2015
- 1st Clinical study 2017
 - AA PhD 2016
- Study Mexico
 - Student thesis
- EIC Accelerator grant
- 12 full-time employees
- QA/RA manager 2021

Regulatory

- QMS ISO13485 certified 2019
- Classification issue MDD
 - Class 1 or Class 1m
- Classification MDR
 - IIa
 - Calibration card class I
- Technical file submitted April 1st
 - CE mark Sept/Oct?



picterus

Thank you for your attention!

