IDENTIFY + CAREONLINE

+ managing complexity + risk +
+ treatment guidance + follow-up care +

Treffen des AK IMRT 30. / 31.05.2016 Leipzig

Thomas Speck
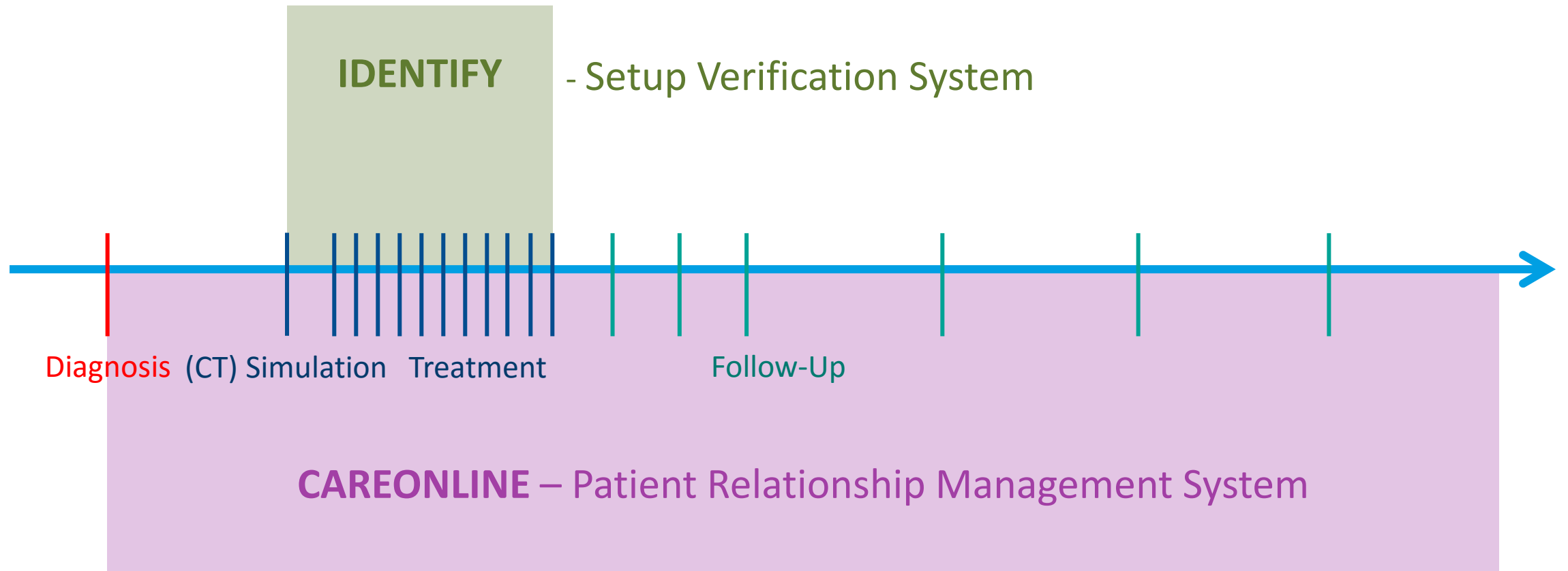
rapp | Radiologie
Umweltschutz
Nuklearmedizin
Strahlentherapie
www.rapp-iso.de

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Patient Journey

IDENTIFY - Setup Verification System

Diagnosis (CT) Simulation   Treatment   Follow-Up

CAREONLINE – Patient Relationship Management System

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IDENTIFY

Safe, Transparent & Efficient

Patient Centric Workflow

1965

2015

Seat Belts

ABS

Airbags

ESR, PSM,
Navigation,
etc ...

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Josef Mayr (m), 19.02.1945

Joseph Mayer (m), 19.05.1941

Wrong Site

Wrong Patient

46%

8%

The New York Times

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stereoscopic & surface navigation

light

patient experience

motion monitoring

sound

RFID reader

interlock

augmented reality guidance

EMR Interface

EMR interface

handheld control

document interface

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(CT) Simulation and Planning
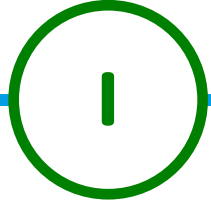
EMR interface for Patient Verification

Auto Setup Notes (ID/POS)

Surface Export (head to toe) to TPS for Collision Avoidance

Orthopedic Setup Reproduction (head to toe)

Breath Signal for 4DCT (30 Hz)

IDENTIFY Workflow

Waiting Room

- Patient Self-Check-In
- Automated Queuing
- Treatment Information (time, location)

Setup is prepared: Patient Positioning

- Patient ID Verification
- Patient (Self)Positioning Guidance
- Verification of Patient Orthopedic Setup (Surface)

Patient Monitoring & Gating, Collision Monitoring

- Patient Surface is monitored for gross Motion
- Marker on Patient is monitored for Gating Techniques
- Treatment is interrupted when Threshold is exceeded

Accessory Set-up & Calling Patient

- Patient Data and Treatment Site Import from OIS
- Accessory Verification & Navigation

Confirming Setup

- Therapist confirms Setup and leaves the Room
- Interlock is cleared for Treatment

End of Treatment

- Automated Treatment Protocol is exported to OIS
- All Data can be drawn from Statistics Interface

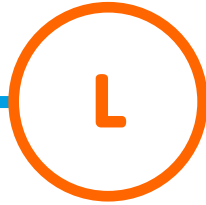1 2 3 4 5 6

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Reception

R

Patient Self-Check-In

Patient Information (time, location)

Automated Queuing in HIS / ARIA / MOSAIQ

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Treatment Accessory Setup

Patient Data and Treatment Site Import

Accessory Verification & Navigation (ID & POS)

Augmented Reality Guidance on wall screen

Patient Information

...

Optical Tracking
⊕ Couchtop

Treatment Setup
✓ Headrest
✓ Vacuum Cushion
✓ KneeSTEP
? Patient
⊘ Vacuum bed

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External Inhibit: Raised

Jonathan Ford
Date of birth: 10-03-1980
Gender: Male
MedRec#: 87587864
Site: prostate

Override Patient

t – Jonathan
Cushion – Jonathan
EP 8**B**

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Patient Setup

Patient Verification

Patient Information

Unexpected Patient

⊘ Patient

Linac 1

Jonathan Ford
Date of birth: 18-03-1960
Gender: Male
MedRecd: 57587064
Site: prostate

...ient tag was already used for another patient.

External Inhibit: Raised

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Patient Setup
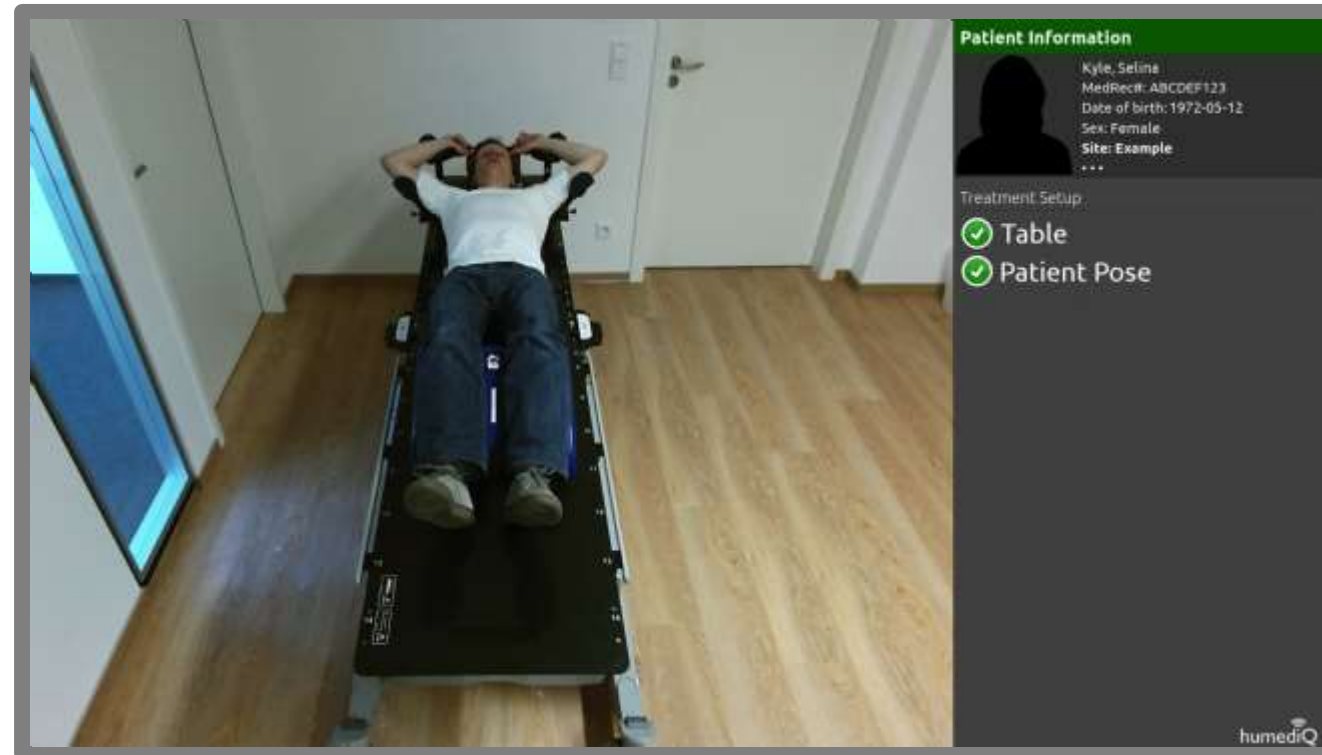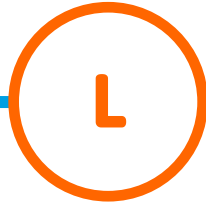

Patient Verification

Patient Setup

Patient Virtual Surface on Screen(s)

Patient (Self) Positioning Guidance

Verification of Patient Orthopedic Setup
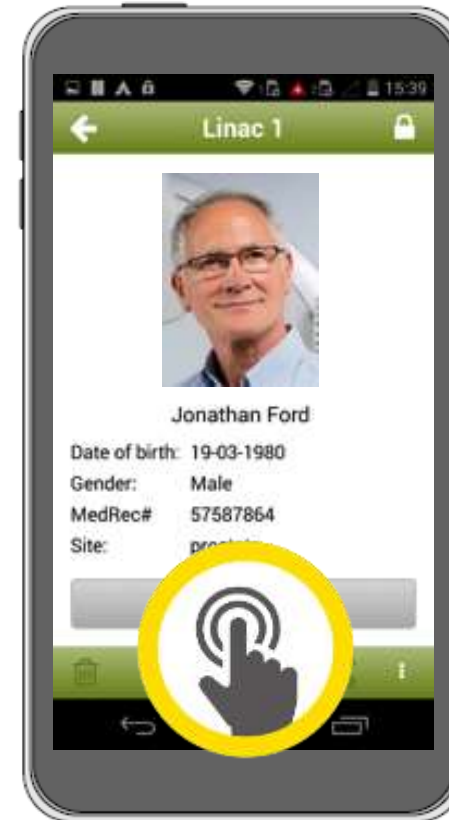
Setup Confirmation

Setup Confirmation

Interlock is cleared for treatment

Patient Selected Light & Sound (option)

Patient Monitoring

Patient Surface Monitoring

(Gating) Marker Monitoring

Breathing Guidance

Collision Monitoring

Automated Session Report

Automated Treatment Protocol Export to OIS

- IDs [patient, therapist, accessories]
- Positions
- Surface
- Setup Photos
- TimeStamps

Statistics Interface

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Surface and markers are tracked in relation to the couch and the couch is tracked in relation to isocenter (update rate 10 and 30 frames per sec)

This allows for **couchkicks and couchmoves** at fluent augmented reality guidance and permanent motion monitoring

All identities are tracked with their positions, angulations and surfaces in „realtime"
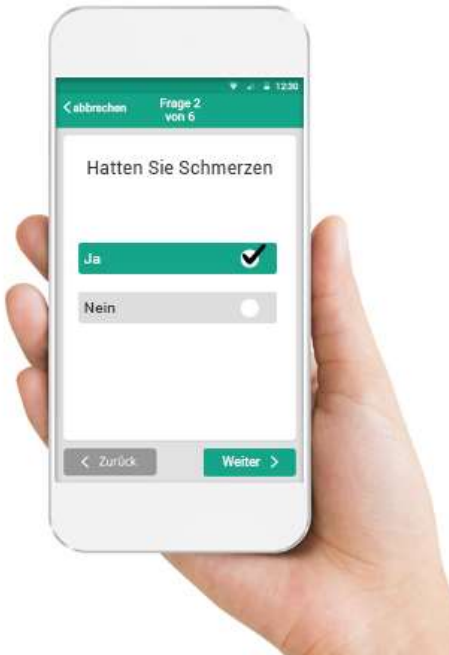
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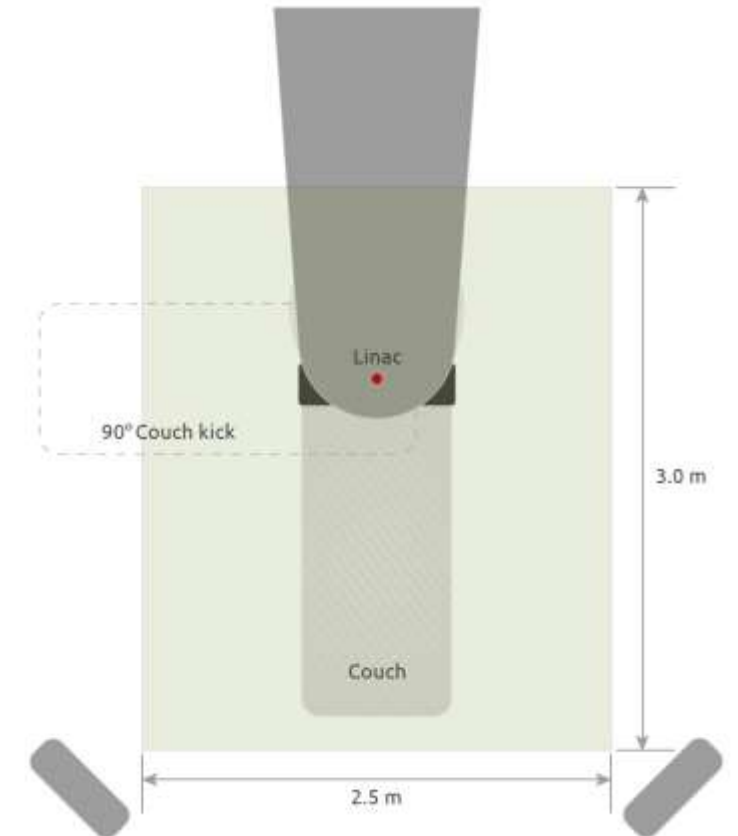
linacs

CT

waiting

server

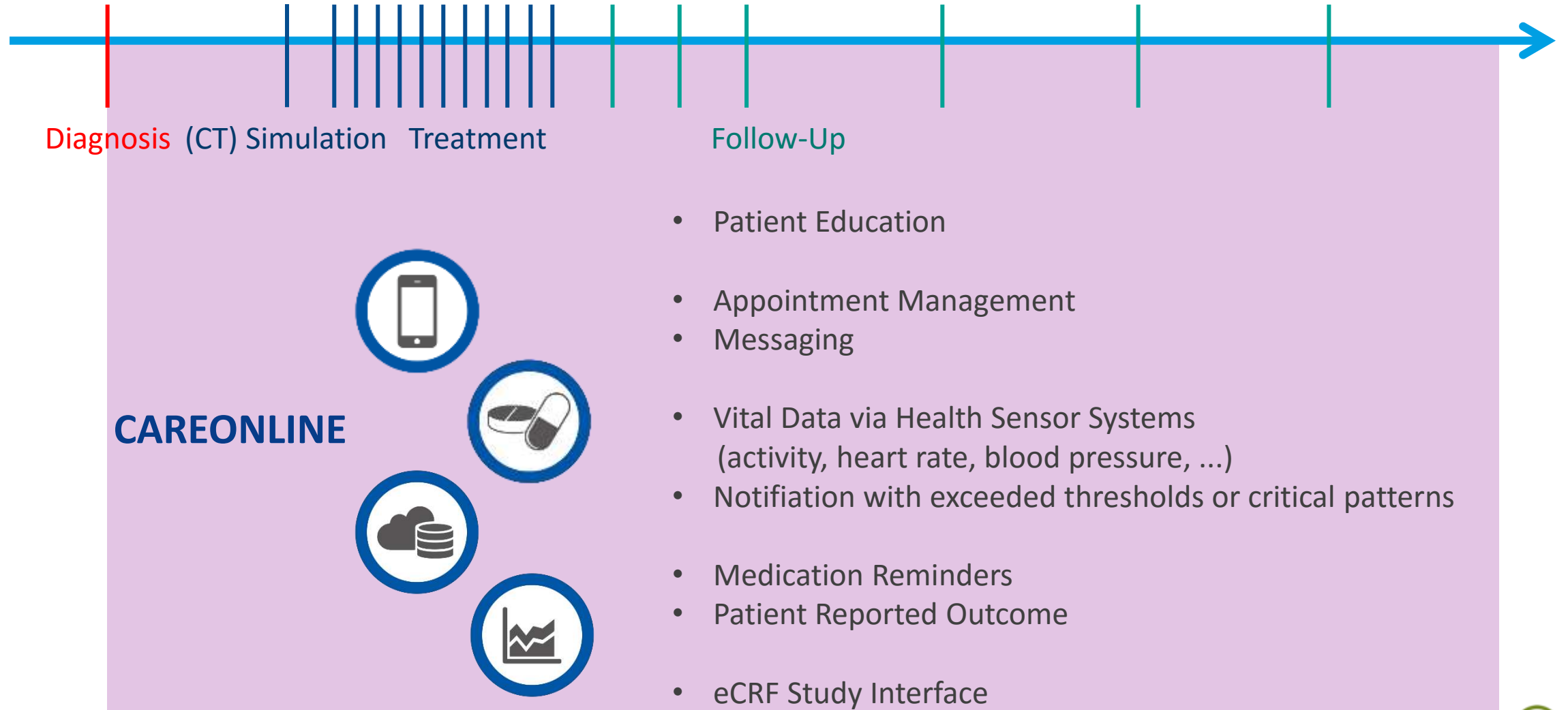Other modalities can be implemented as well (brachytherapy, Gammaknife, PET …)
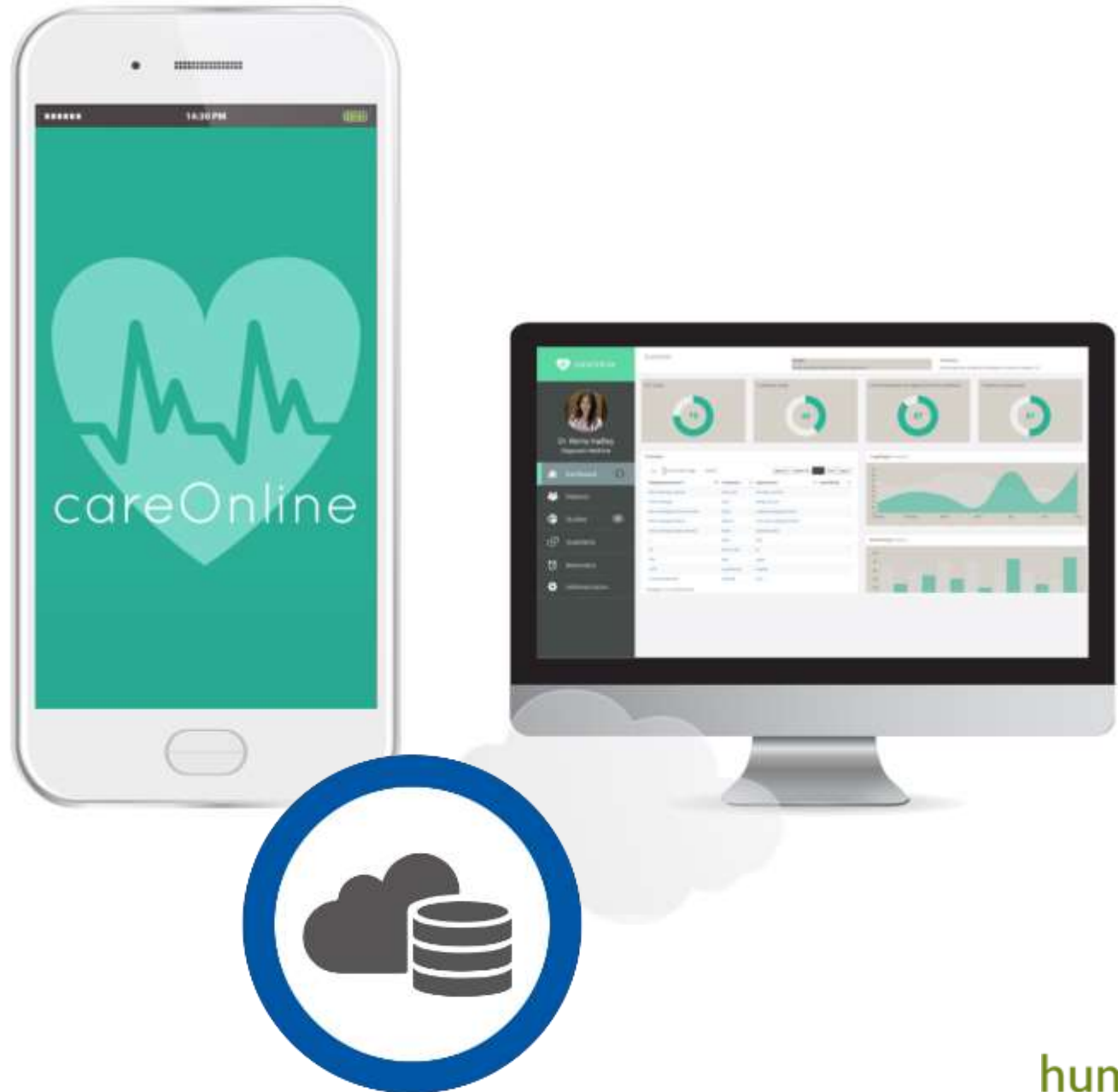
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CAREONLINE
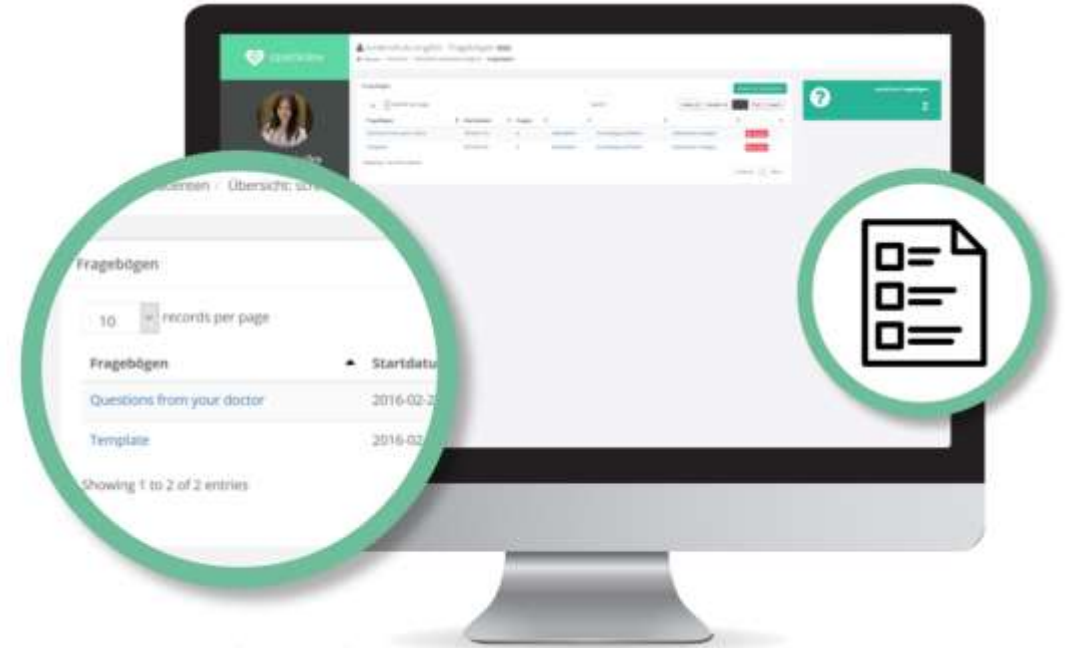
Your 24/7 lifeline

to your patient

CAREONLINE

Diagnosis (CT) Simulation   Treatment   Follow-Up

CAREONLINE

- Patient Education

- Appointment Management
- Messaging

- Vital Data via Health Sensor Systems
  (activity, heart rate, blood pressure, ...)
- Notifiation with exceeded thresholds or critical patterns

- Medication Reminders
- Patient Reported Outcome

- eCRF Study Interface

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Infrastructure

iOS & Android

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workflow

Easy Connect

Create Questionnaires

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Create templates

See movement profiles

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Remind your patient to fill out the questionnaire

Add Withings Devices

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Best Overview of the data

Export

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workflow
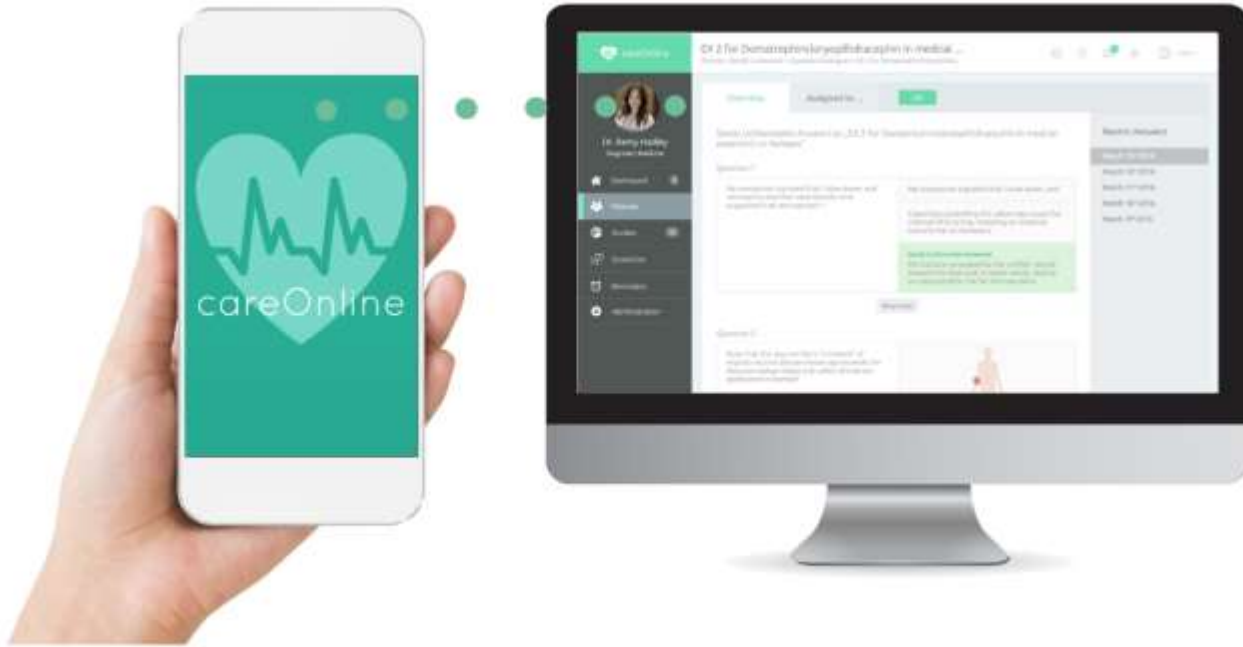

Set thresholds and get notified if problems occur!

Medication Reminders
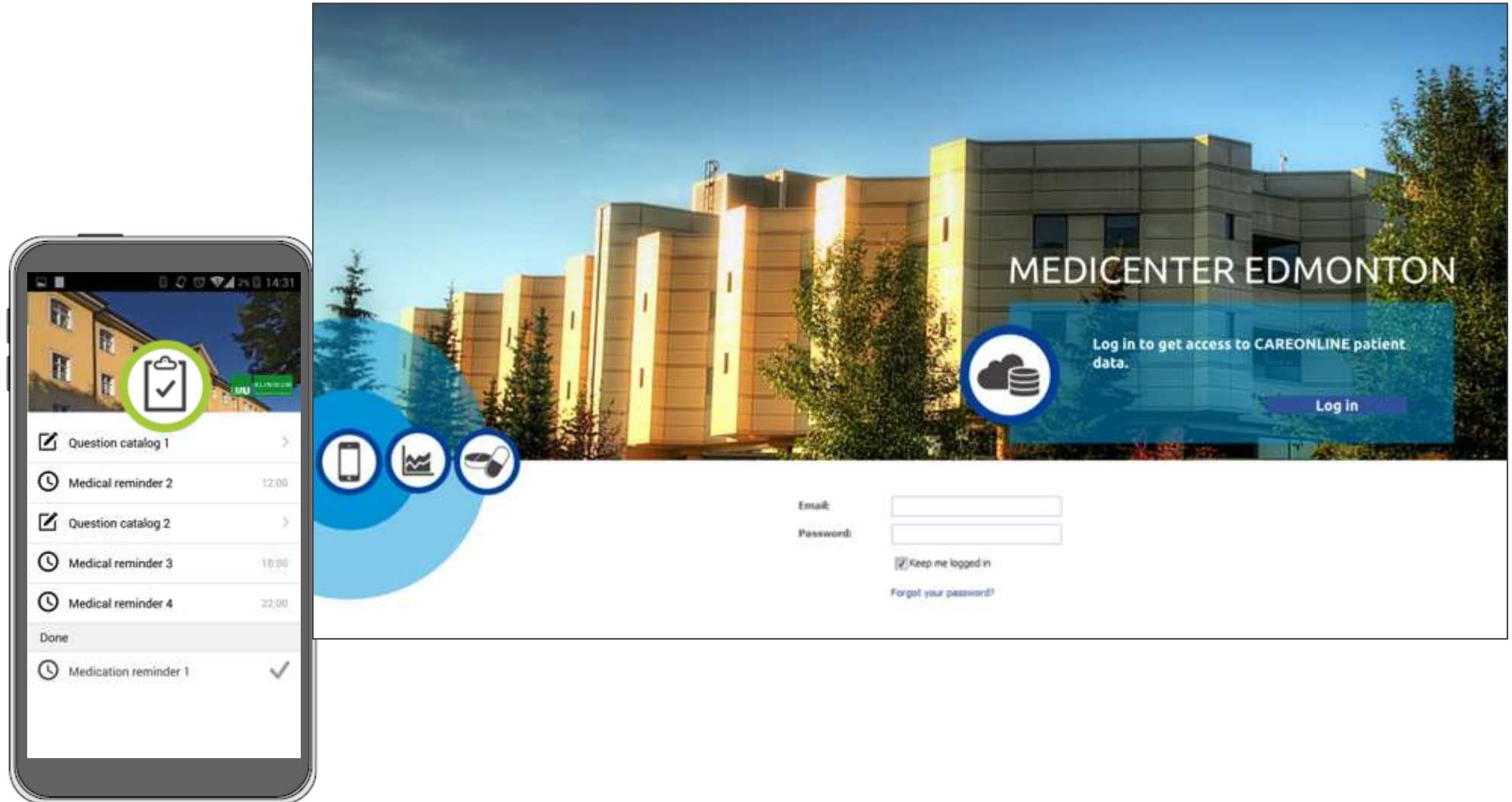
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workflow

Manage appointments

Communicate securely

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Branding example

safety in your life

Vielen Dank für Ihre Aufmerksamkeit