Electronic instructions for use (english)

1) Important information

ATAH

CAUTION: This product is restricted for use by healthcare professionals with the authority to prescribe medication for patients only.

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This instructions for use/user's

The document is intended for use

This instructions for use is an

manual concerns the device, ATAH. ATAH may also be referred to as FMB (Fælles Medicinbeslutnings-støtte). This document and the information included is considered *confidential* and property of Trifork Public A/S. The document may not be reproduced, copied in whole or in part, adapted, modified or disclosed to others without written permission by Trifork Public A/S.

by customers and users of the medical device, ATAH, and to comply with applicable regulatory requirements as per Regulation (EU) 2017/745. Trifork Public A/S has taken care to ensure the accuracy of this document, however Trifork Public A/S assumes no liability for errors and reserves the right make changes to the instructions for use without further notice.

electronic instructions for use. A paper copy of the instructions for use can be requested for delivery no later than 7 days after placement of the order. For the most up to date information in regard to the instructions for use, please always refer to the electronic instructions for use. The electronic instructions for use can be found at *https://wiki.kliniskbeslutningsstøtte.dk*

1.1) General product description

The medical device 'ATAH', also referred to as 'Fælles Medicin Beslutningsstøtte (FMB)', is a standalone software intended for use by healthcare professionals with authorization to prescribe medication to patients. When healthcare professionals prescribe medication to a patient, the device provides messages called *warnings*. The device is offered as a web service accessible through an Application Programming Interface (API) and is intended to be used in a system-to-system communication with Health Information Technology (HIT) systems for healthcare professionals. No graphical user interface is provided by ATAH. Messages are provided based on patient data and clinical datasets. The clinical datasets are an integrated part of the device while patient data is provided by the client HIT systems. The device consists of twelve different configurations called *modules*. The available modules are; interactions, cross-reactivity, max dose, reduced kidney function, double prescription, children, contra-indications, indications, pregnancy, lactation, antibiotics and monitoring. Messages/warnings are intended to provide healthcare professionals with *decision support* that can be used for treatment of short- and long term diseases and/or injuries.

The device is not intended to replace the healthcare professional's decision in regard to prescription of medication but rather support the healthcare professional by making patient data and clinical data more accessible for an informed prescriptive medication.

1.1.1) Intented purpose

The intended purpose of the medical device, ATAH, is to provide client systems with messages based on clinical data sets and patient data. The messages can be used by the general physician as decision support for providing informed prescriptive medication.

1.1.2) Intended users

The intended users of the medical device, ATAH, are healthcare professionals with the authority to prescribe medication to patients in Denmark. The device can be used by healthcare professionals in the general practice and in hospitals where the client system used has implemented the medical device.

1.2) Priciples of operation

Client HIT systems access the medical device, ATAH, through an API. Based on patient data and the medication to be prescribed, the device provides the user with messages/warnings. Three different types of operations are performed; *evaluate*, *evaluateDrugMedications* and *authorize*. *Authorize* is used for authorization and authentication, *Evaluate* is used for review of already prescribed medication, and *EvaluateDrugMedication* is used for prescription of new medication. To provide decision support, the device uses the different codings; NPU, ATC, SKS/ICD-10 and ICPC-2-DK. NPU-codes are used for descision support related to the patients examination results. ATC-codes are used for classification of medicines according to their active ingredients and mode of action and by this, provide decision support in regard to CAVE and double prescription. SKS-ICD-10 is used for identification of diagnoses in the hospital environment. SKS includes the Danish version of the international classification system, ICD-10 from WHO, and is maintained by 'Sundhedsdatastyrelsen'. ICPC-2-DK is a Danish classification of the International Classification of Primary Care (ICPC) and is used for identification of diagnoses in primary care, e.g. the general practitioner. ICPC-2-DK is maintained by KiAP (Kvalitetsudvikling i almen praksis).

The device has eight different types of messages based on severity. The messages are;

- *Contraindicated:* The use of this medication is *contraindicated*
- *Caution:* The use of this medication should be used with caution

- *currentlyUnderReview:* This medication or the type of message/warning is under review
- *notIncluded:* This medication is not included in the clinical datasets
- *mayBeUsed:* This medication or a recommentation may be used if evaluated suitable
- *reviewedNotRelevant:* This medication can be used, decision support not relevant to the module
- *Information:* This medication or a recommendation can be used if evaluated suitable
- *missingData:* More patient data can improve quality of the warning type

1.2.1) Minimum system requirements

No specific system requirements apply, however the client health information technology (HIT) system must be authorized for use and the computer with a HIT system implementing the medical device must have internet access when in use. The implementation is performed by the system administrators alone and the manufacturer, Trifork Public A/S, has no influence on the implementation. The medical device only consist of an API (Application Programming Interface). A guideline for implementation is developed by the customer, Region Nord. The implementation guideline is provided to the system administrator(s) by Region Nord prior to implementation.

1.2.2) Training

No particular training is required for the user in order to use the medical device, ATAH. The user is expected to use the medical device in accordance with the instructions for use which can be accessed at any given time.

1.3) Claim(s) and disclaimers

Clinical claims

The clinical claims are divided into performance claims(P) and safety claims (S) and listed below.

- P1: The medical device ATAH supports the general physician in prescribing medication to patients and thereby improves patient management
- P2: The medical device ATAH provides evidence based clinical decision support on all marketed drugs in Denmark
- P3: The medical device ATAH provides clinical decision support based on all applicable and accessible patient data in the patient's electronic health record simulta-neously
- P4: The medical device ATAH supports *optimal* prescription of medication
- S1: The medical device ATAH is safe to use when used as intended

Disclaimer

The following disclaimers applies.

- ATAH is only intended to provide decision support
- The General Physician has the solely responsibility for making any decision regarding prescriptive medication regardless of any messages provided by ATAH
- Clinical datasets are validated by healthcare professionals prior to being incorporated into ATAH
- Only validated client systems can be used in combination with ATAH
- No graphical user interface is provided with ATAH

1.3.1) Clinical benefit

The medical device, ATAH, result in a direct clinical benefit for the healthcare professional in regard to patient management and an indirect clinical benefit for the patient in regard to prescriptive medication. ATAH only takes responsibility for the decision support messages delivered to the client systems and *not* the action performed by the healthcare professional on behalf of their professional expertise and decision support received. The indirect clinical benefit for the patient can- and will not be measured by Trifork Public A/S.

1.3.2) Performance

Performance of the medical device, ATAH, concerns the ability to generate an expected output based on a given input. Manual performance tests are continuosly conducted using a test client and inputs are designed to test expected outputs from each of the decision support modules. System administrators also gain access to the test client in order for them to test new features or functionality before changes are deployed in production.

Operational performance and up-/downtime is continuosly monitored in Trifork Public A/S and via the page https://fmb.statuspage.io/. If operational systems are down, relevant employees are notified urgently.

1.4) Indications for use

'ATAH' is intended for use by all indications and for all situations where medicine is prescribed to a patient by a healthcare professional. Based on patient data, clinical datasets and with the use of the codings described in *1.2 principles of operation*, decision support will be provided.

1.5) Contraindications

No contraindications are identified with the use of the medical device, ATAH.

1.6) Warnings and precautions

ATAH must only be used by healthcare professionals who have the authority to prescribe medication to patients. All healthcare professionals with access to ATAH through the client HIT systems should read this instructions for use prior to using the device. Only validated client systems may access the device. The systems have to be whitelisted by the manufacturer prior to use. Any incident where the user suspects missing or wrong decision support messages, the incident must be reported to the manufacturer according to the provided guidelines for reporting of feedback. To ensure correct use of the device and to avoid risk of patient safety, please read the listed warning(s) and caution(s) below.

Warnings

⚠ The decision support messages provided should only be used as *guidance*.

⚠ The responsibility of the final prescription of medication lies solely with the healthcare professional.

⚠ Redundant warnings have been reduced upon request from the general physicians, why attention is needed in all types of prescriptions.

⚠ If multiple measurements with the same NPU code has been taken at the exact same time, one of the measurements will be chosen arbitrarily for decision support.

Precautions / Important information

ⓘ Proper implementation of the system must be ensured according to provided guidelines.
ⓘ The quality of decision support messages depends on the correctness and availability of patient data.
ⓘ There is a risk of *missing* decision support messages.
ⓘ There is a risk of *wrong* decision support messages.
ⓘ Only approved client systems can access the medical device.
ⓘ No user interface is provided with the medical device.
ⓘ Clinical datasets are validated by general physicians prior to use in the medical device.

Precautions / Important information (drug specific)

ⓘ Two indication codes 693 and 701, are found in relation to "Forebyggelse mod mavesår". Indication code 693 is not belonging to the drug pantoprazol while 701 is. If indication code 693 is used, beware that a max dose of pantoprazol is therefore not included.

2) Introducing ATAH

The medical device, ATAH, is provided as a national webservice and intended for integration with the Danish health information technology systems, including the danish 'Lægepraksis systemer' (LPS) and eletronic patient journals (EPJ). The device provides the healthcare professional with different types of decision support messages. Decision support messages can be provided for drugs that are in the Danish Medicines Agency (Lægemiddelstyrelsen) list of drugs marketed in Denmark (medicinpriser.dk), herbal remedies, powerful vitamins

and SAD-drugs.

2.1) Decision support modules

The medical device, ATAH, is provided as an API to client systems. The device can be configured with twelve individual modules to match the need for users of a specific client system. When the device is integrated into the client system, decision support modules can be enabled/disabled as needed.

The twelve individual decision support modules are:

- R1 Interactions
- R2 Cross reactivity
- R3 Max dose
- R4 Reduced kidney function
- R5 Double prescription
- R6 Children
- R7 Contraindications
- R8 Indications
- R9 Pregnancy
- R10 Lactation
- R11 Antibiotics
- R12 Monitoring

Each of the decision support modules are described in further detail in the sections below. The functionality in modules R1, R2, R3, R4, R6, R7, R8, R9, R10 and R11 are developed by Dansk Lægemiddel Information A/S (DLI A/S) in collaboration with Danish healthcare professionals. DLI A/S is responsible for the Danish website, medicin.dk, which is widely used by healthcare professionals to find information about indications, treatment options and drugs.

2.1.1) R1: Interactions

Module 1, R1: Interactions, provides the healthcare professional with decision support messages in regard to *interactions* between drugs. The module uses information from the Danish medicines agency (Lægemiddelstyrelsen) interaction database. Warning type, recommendation and drug class effect from the interaction database is used to build the decision support message where a short text and an action text is provided to the healthcare professional.

2.1.2) R2: Cross reactivity

Module 2, R2: Cross reactivity, provides the healthcare professional with decision support messages if a patient has a registered allergy (CAVE) for a specific drug or for an ATC-code (level 3, 4 or 5) and the healthcare professional prescribes a drug with the risk of cross reactivity. The module is developed by medicin.dk in collaboration with Danish healthcare professionals. Cross reactivity is defined as a sensitivity reaction to a drug that predisposes a patient to react similarly to a different, but related, drug. The module provides decision support of certain safety measures depending on the severity of the patients allergic reactions, e.g. anaphylaxis preparedness or recommendations for treatment with alternative drugs containing different active ingredients. The module covers the drug groups: Antiepileptics, Aminoglycosides, Antiviral agents, Iodinated contrast agents, NSAID / 5-ASA / Paracetamol, Beta-lactams, Vancomycin, ACE inhibitors / AT-II antagonists / Renin inhibitor, Thienopyridines, Proton pump inhibitors (PPI), Calcium antagonists, Fluoroquinolones, Muscle relaxants, Tetracyclines, Macrolides, Sulfonamides, Opioids and Antineoplastic agents. Furthermore, the module also provides decision support for direct CAVE in relation to active ingredients in the drug being prescribed.

2.1.3) R3: Maximum dose

Module 3, R3: Maximum dose, provides the healthcare professional with decision support if the sum of active ingredients in the patient's prescriptions exceeds a given maximum dose in regard to the patient's age, kidney function, weight, body surface and the drug's route of administration (ROA). The module provides decision support for 24 hour intervals which means that the healthcare professional will receive decision support messages if the maximum dose of an ingredient is exceeded within the same 24 hours (00:00-23:59). The decision support message shows the value of the maximum dose as well as the calculated sum of ingredients.

2.1.3.1) Dose calculations

A drug can be prescribed in one of three ways depending on the type of drug and relevant ROA's (route of administraiton). The three possible ways to prescribe a drug are:

- Amount, e.g. 1 pamol 500mg two times a day
- Amount of active ingredients, e.g. 1000mg paracetamol two times a day
- Amount of a drug, e.g. Injection of 100ml

In the API of the medical device, ATAH, the dose is indicated as stated above by providing a dose type and if relevant, a unit information text. The dosage type is validated against the drug.

- {"dosageUnitType": {"type":"Count"}}
- {"dosageUnitType": {"type":"UnitActiveSubstance", "unitText":"mg"}}
- {"dosageUnitType": {"type":"UnitAmountProduct", "unitText":"ml"}}

For prescribing drugs in amount of active ingredients, the following units are allowed:

- EP
  - "Ph.Eur. enheder", conversion factor 1
- IU
  - IE, conversion factor 1
  - ie, conversion factor 1
  - "international enhed", conversion factor 1
  - "internationale enheder", conversion factor 1
- MMO
  - millimol, conversion factor 1
  - mikromol, conversion factor 0.001
- UN
  - enhed, conversion factor 1
  - enheder, conversion factor 1
- mg
  - mikg, conversion factor 0.001
  - mikrog, conversion factor 0.001
  - mikrogram, conversion factor 0.001
  - RG, conversion factor 0.001
  - milligram, conversion factor 1
  - g, conversion factor 1000
  - gram, conversion factor 1000
  - kg, conversion factor 1000000
- ml
  - milliliter, conversion factor 1
  - l, conversion factor 1000
  - liter, conversion factor 1000

For prescribing drugs in amount of product, the following units are allowed:

- mg
  - mikg, conversion factor 0.001
  - mikrog, conversion factor 0.001
  - mikrogram, conversion factor 0.001
  - RG, conversion factor 0.001
  - milligram, conversion factor 1
  - g, conversion factor 1000
  - gram, conversion factor 1000
  - kg, conversion factor 1000000
- ml
  - milliliter, conversion factor 1
  - l, conversion factor 1000
  - liter, conversion factor 1000

NB: combination drugs cannot be prescribed with amount of active ingredients due to combination drugs having multiple active ingredients. Combination drugs can only be prescribed as an amount, e.g. 1, or as an amount of product, e.g. 100ml.

2.1.4) R4: Reduced kidney function

Module 4, R4: Reduced kidney function, provides the healthcare professional with decision support messages in regard to contraindications, precautions and reduction in dose. The module is based on the patients GFR (Glomerular Filtration Rate) and the active ingredients in the patient's prescriptions. Medicin.dk is used for information about dose. This module works in collaboration with module 3, R3: Maximum dose, where limit values are predetermined for an active ingredient and in regard to GFR.

2.1.5) R5: Double prescription

Module 5, R5: Double prescription, provides the healthcare professional with decision support messages for double prescription of combination drugs. The module is intended to be an extension to the information of double prescription that the healthcare professional already receives through FMK (Fælles Medicinkort). FMK provides information based on ATC-code level 5 while this module instead provides decision support based on active ingredients. When using ATC-code level 5 only, the information only reacts to drugs that are generically the same, meaning two similar drugs sharing the same ATC-code. When using active ingredients instead of only the ATC-code, the system is able to provide the healthcare professional with better decision support for combination drugs that are generically similar but doesn't share the same ATC-code. PRN "as needed" prescriptions will not provide the healthcare professional with any decision support messages due to PRN prescriptions for a drug the patient already has prescribed is common practice. The module uses data on active ingredients from medicin.dk to provide decision support.

2.1.6) R6: Children

Module 6, R6: Children, provides the healthcare professional with decision support messages regarding contraindications and precautions. The module uses the patients age as a criteria for providing decision support. The module is developed by medicin.dk in collaboration with Danish healthcare professionals. When the age criteria is met for a specific patient and a specific drug, and the drug has contraindications and precautions relevant in regard to children, a decision support message will be provided.

2.1.7) R7: Contraindiciations

Module 7, R7: Contraindications, provides the healthcare professional with decision support messages regarding contraindications and general precautions in relation to a patient's diagnose(s) when coded with ICD-10 or ICPC-2 diagnose codings. The healthcare professional will receive decision support messages when prescribing a drug that is contraindicated or has precautions for a specific diagnose that the patient has. The module is developed by medicin.dk in collaboration with Danish healthcare professionals. The module is based on SPC's (summary of product characteristics) and the diagnose codings are maintained by the healthcare professionals. If a patient has lab results for potassium, sodium and hemoglobin, these results are automatically converted to diagnoses in order for them to influence the decision support provided by this module.

2.1.8) R8: Indications

Module 8, R8: Indications, provides the healthcare professional with decision support messages in regard to *indications*. The module is intended to help the healthcare professional identify prescriptions with missing indication in patients with polypharmacy. Indications are interpreted from the patient's list of diagnoses using ICD-10 and ICPC2 codings. The data in module 8 includes indications coded with ICD-10 and ICPC2 codings and relevant drugs are attached. The data is developed by medicin.dk in collaboration with Danish healthcare professionals.

2.1.9) R9: Pregnancy

Module 9, R9: Pregnancy, provides the healthcare professional with decision support messages for contraindicated drugs or general precautions in regard to patients who are pregnant. The decision support module also provides information if there is a lack of clinical data to support the application of this decision support module. The healthcare professional will receive recommendations for other treatment options than using the contraindicated drug. The decision support message will contain a short text and a detailed text that describes the decision support in further detail. For more information, the healthcare professional can use the reference links to medicin.dk or to scientific articles which are also contained in the message. The decision support is uniform across generic drugs independent of their SPC's (summary of product characteristics). The module only provides decision support for relevant ROA's (route of administration). The module is an evidence-based decision suppport module developed by medicin.dk in collaboration with Danish healthcare professionals.

2.1.10) R10: Lactation

Module 10, R10: Lactation, provides the healthcare professional with decision support messages for contraindicated drugs or general precautions in regard to patients who are lactating. The decision support module also provides information if there is a lack of clinical data to support the application of this decision support module. The healthcare professional will receive recommendations for other treatment options than using the contraindicated drug. The decision support message will contain a short text and a detailed text that describes the decision support in further detail. For more information, the healthcare professional can use the reference links to medicin.dk or to scientific articles which are also contained in the message. The decision support is uniform across generic drugs independent of their SPC's (summary of product characteristics). The module only provides decision support for relevant ROA's (route of administration). The module is an evidence-based decision suppport module developed by medicin.dk in collaboration with Danish healthcare professionals.

2.1.11) R11: Antibiotics

Module 11, R11: Antibiotics, provides the healthcare professional with decision support messages in regard to the antibiotic guidance developed by pro.medicin.dk. The content of the antibiotic guidance is coded with ICD-10 and ICPC-2 diagnose codings which means that the healthcare professional is able to access guidance for a specific diagnose of a specific patient. The content of the guidance can either be represented directly in the decision support message received in the client HIT (Health Information Technology) systems *or* in the reference links attached in the decision support message.

2.1.12) R12: Monitoring

Module 12, R12: Monitoring, provides the healthcare professional with decision support messages in regard to *monitoring*. The decision support messages provided by this module were previously provided by the modules R4: Reduced kidney function, R6: Children and R7: Contraindications.

2.2) Decision support messages

All patients must be evaluated individually by the healthcare professional regardless of the decision support message provided by the medicin device, ATAH. Eight severity categories have been defined based on the data available to the decision support system. The severity categories are;

- Contraindicated - *The use this drug is contraindicated*
- Caution - *This drug should be used with caution*
- CurrentlyUnderReview - *The drug or the message type is under editorial processing*
- NotIncluded - The drug is not included in the data sets used for decision support
- MayBeUsed - The drug can be used if the healthcare professional evaluates it as appropriate
- ReviewedNotRelevant - *The drug has been reviewed in regard to a specific module but did not have clinical relevance in terms of providing decision support to the healthcare professional*
- Information - *The drug can be used if the healthcare professional evaluates it as appropriate*
- MissingData - *Patient data can improve the quality of the decision support message*

2.3) Demo client

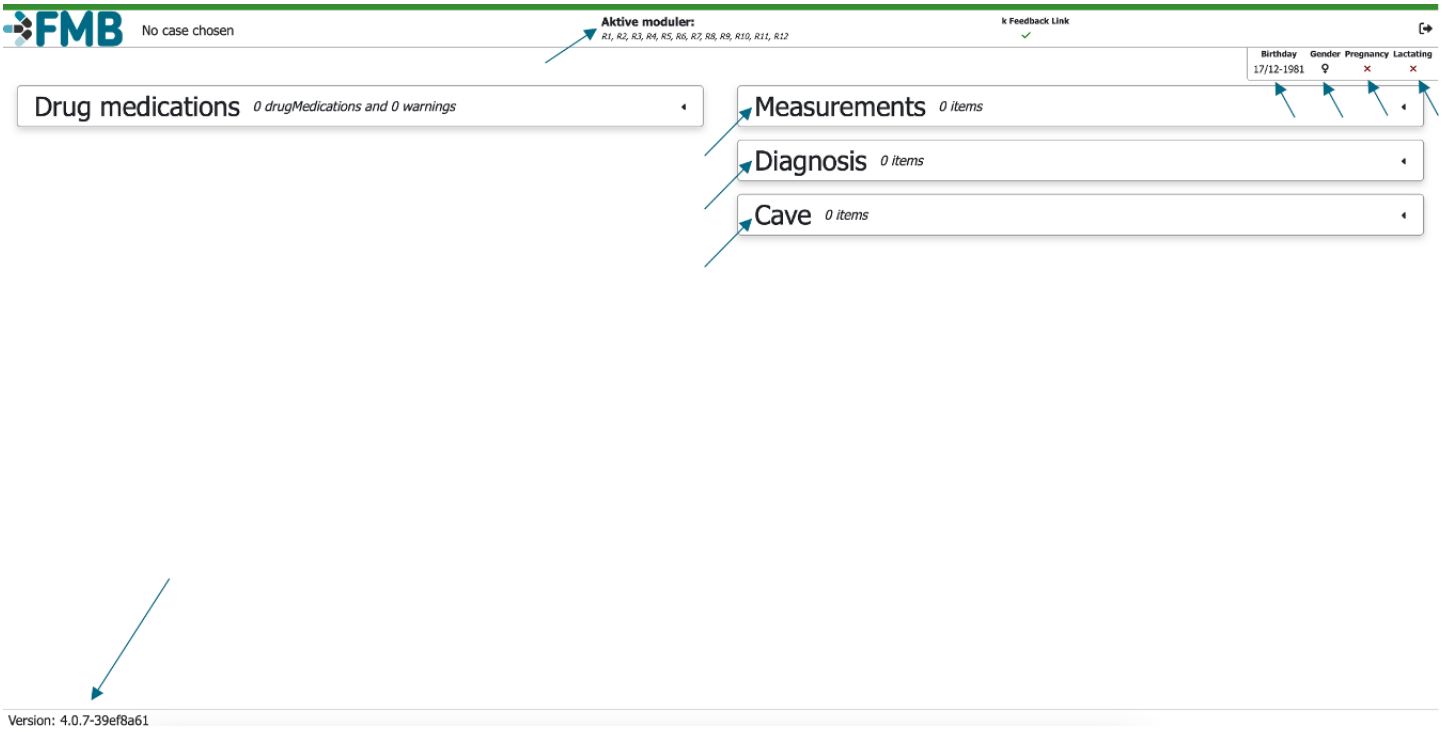
A demo client is developed by Trifork Public A/S for use internally and by system administraters. The demo client can be used for testing the varius decision support modules as well as verification of the output of the decision support messages provided. In this section, figures are inserted to demonstrate the demo client of the medical device ATAH. Please note that the actual medical device does *not* have a graphical user interface why the decision support messages provided may look different dependent on client system used.

NB: This section is only included to demonstrate the use- and functionality of the medical device.

General overview of the demo client

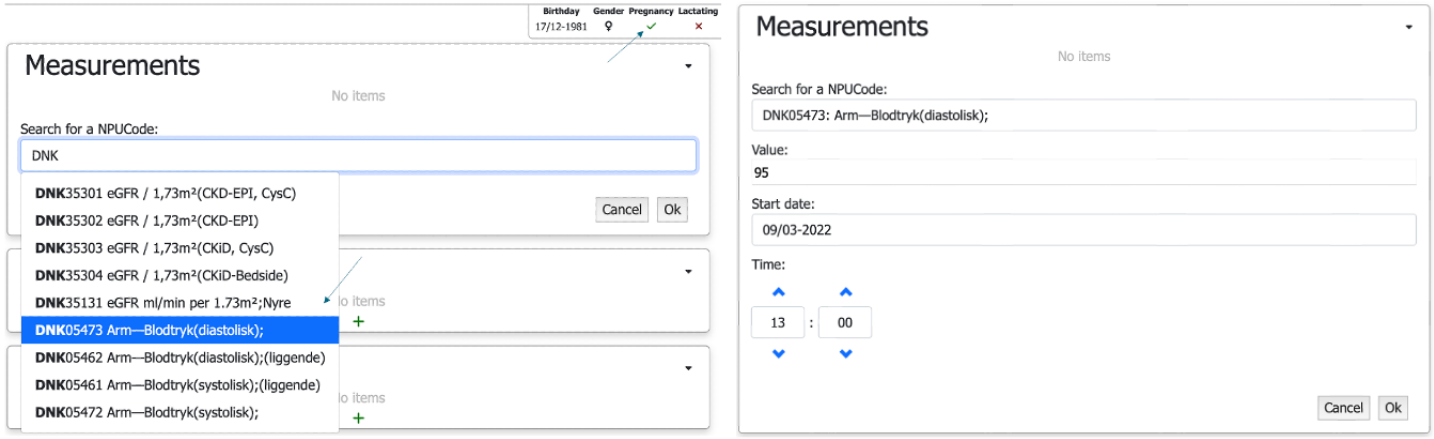
In the figure below, a general overview of the demo client can be seen. The demo client has no patient data why data that is necessary for the system to produce decision support messages has to be added manually by the user. The data relevant could be; Age, gender, measurements, diagnose(s), CAVE, pregnancy and lactation. The modules can be disabled by the user and the active modules are seen in 'Aktive moduler'. The current version used by the demo

client is shown in the bottom left corner.



Adding patient data

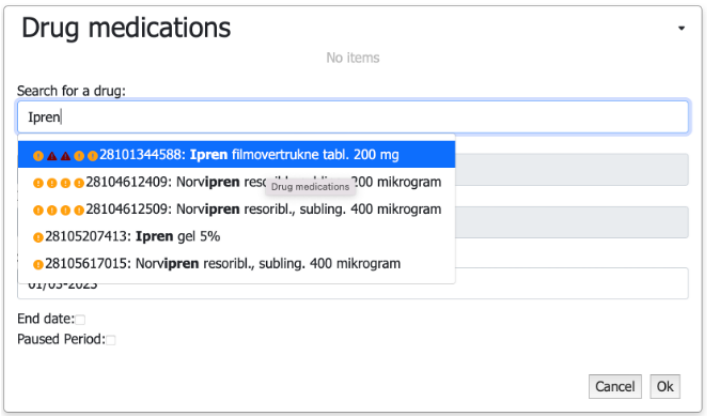
In the figure below, an example of a manually added measurement can be seen. In this example, the patient is pregnant and has a high diastolic blood pressure measurement of 95 mm Hg.

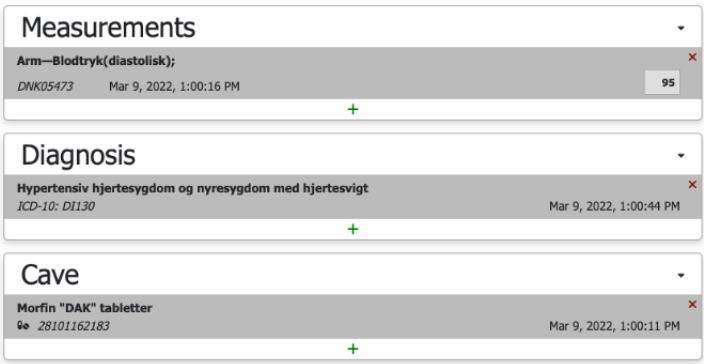


Adding a prescription

In the figure below it is possible to see some of the patient data to the right and a new prescription being created to the left. The blood pressure from the figure above is now illustrated in the patient data as well as a diagnosis and a CAVE has been added to the patient data.

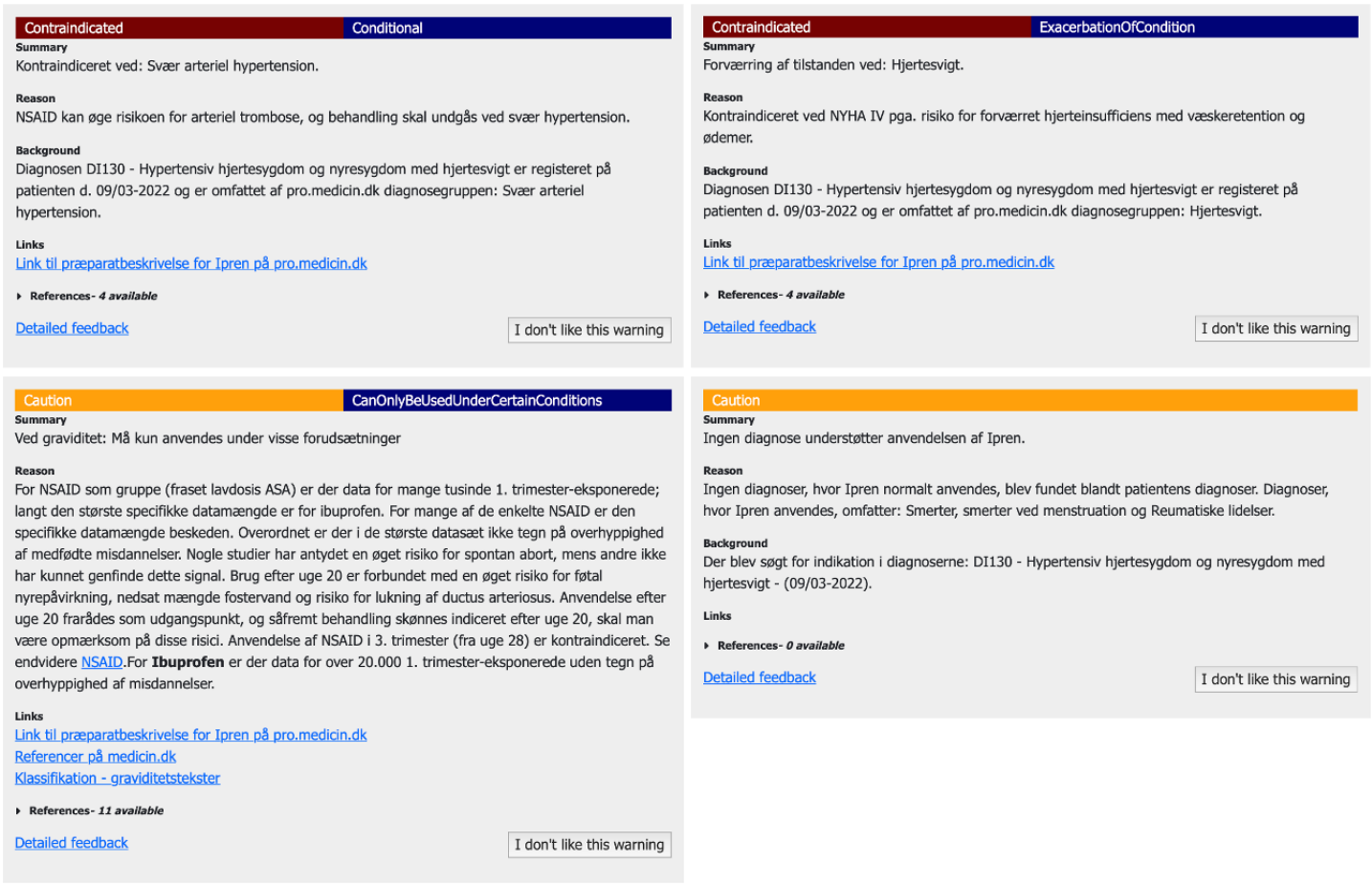
When prescribing a new drug it is possible to see whether the different drugs will produce any serious warnings (contraindications) or less serious warnings (cautions).





Decision support messages

The decision support messages provided by the demo client in this example are presented in the figure below. The colors indicate severity where dark red indicates *contraindication* and yellow indicates *caution.* Each message will contain a summary, a reason for providing decision support, background information if applicable and reference links for more information. The references are provided by medicin.dk and either refers directly to pages on medicin.dk or to relevant scientific literature. If a certain decision support message is deemed irrelevant, the user can press 'I don't like this warning'. Additional reporting of feedback and complaints by the users of the medical device, ATAH, is described in section 3) Complaints and feedback.



3) Complaints and feedback

Complaints and feedback should be reported through https://jira.netic.dk/. A guide to reporting is documented on https://wiki.kliniskbeslutningsstøtte.dk/. For creation of users in Jira, please contact beslutningsstotte@rn.dk.

4) Contact information

For support, questions or assistance for the medical device, ATAH, customers and users are referred to follow the guideline which can be accessed through the following link:

https://wiki.xn--kliniskbeslutningssttte-4mc.dk/lib/exe/fetch.php?media=bst:rn:public:support:procedure_for_indmeldelse_af_fejl_v7.pdf

The guideline is provided in Danish, but can be provided in English upon request.

For access to the medical device, including the API, or the demo client, please contact Michael Jensen,

- mlj@trifork.com

For urgent matters and critical requests, Michael Jensen can be contacted by phone:

- +45 40879079

5) Primary label

NB: This is a draft label for use after the device is placed on the market under the MDR.

MD	ATAH is a medical device
REF	Version 3.0.0 +
	Trifork Public A/S Europaplads 2, 1. 8000 Aarhuc C Denmark info@trifork.com +45 87 32 87 87 SRN: DK-MF-000002045
	2020-05
CE 2797	CE-marked as class IIa BSI as notified body
UDI	GS1 company prefix: 57400204 UDI-DI: UDI-PI: available at
	available electronically at: https://wiki. kliniskbeslutningsstøtte.dk