A Free Project GNU MED for Paperless General Practice

The GNUmed project builds free, *liberated* open source Electronic Medical Record software in *multiple languages* to assist and improve longitudinal care (specifically in ambulatory settings, i.e. multi-professional practices and clinics).

It is made available at no charge and is capable of running on GNU/Linux, Windows and Mac OS X. It is developed by a handful of medical doctors and programmers from all over the world.

It can be **useful to** anyone documenting the health of patients including, but not limited to, **doctors, physical therapists, occupational therapists, acupuncturists, nurses, psychologists, pharmacist etc...**

What can GNUmed do for me today ?

Administration

- Appointment handling (using partner application)
- Branch management
- Inbox Handling
- Staff handling
- Managing Care
  - Care-related Communications (Forms, Letters, Electronic Media)
  - Coding of clinical data
  - Decision Support / Intelligence
  - Document Archive
  - Measurements and Test Results Handling
  - Medication Handling
  - Organizing Care NEW
  - Progress Notes
  - Risk Management
    - Allergies
    - Substance abuse
    - Family History
    - Lifestyle
    - Tags
  - Structured Problem Lists
  - Tracking external care
  - Vaccination Handling
- Patient Handling

Administration

Appointment handling (using partner application)

- KOrganizer
  - view appointments registered in KOrganizer
  - activate patient from KOrganizer appointment
- Terminiko
  - transfer patient from GNUmed to Terminiko for appointment registration
  - activate patient from Terminiko appointment
- Other external appointment managers
  - activate patient in GNUmed
  - create GNUmed patient from appointment
  - depends on external app willingness to co-operate with GNUmed

Branch management

- manage your praxis with any number of branches / offices
- per branch communication channels and addresses
- per branch communications/addresses placeholders

Inbox Handling

- across-staff view, with support for per-message privacy
- from inbox message, jump to unreviewed documents or measurements for this patient
- includes a virtual view of new (and still-unhanded) results and documents
- leave messages to yourself or other providers
- per-staff view

- relevancy and other filters

Staff handling

- manage staff members
- support for recognizing staff-as-patients

Managing Care

Care-related Communications (Forms, Letters, Electronic Media)

- collect documents, files, screenshots, timeline exports, printouts into patient-specific export area (v1.5)
- completed forms/letters are stored with the patient, just like any other document
- encrypted storage of provider autograph scan for insertion into documents
- patient documents export area plugin
- print/mail/fax/burn to CD/DVD/USB patient export area collection (v1.5)
- print manager
- support for designating the receiver(s) of a communication
- transfer data into forms and letters with help of interactive, fully-placeholdered letter templates
- write/fill in template based letters/froms from within GNUmed
    - LibreOffice?
    - (Xe)LaTeX
    - PDF forms (FDF)
    - AbiWord forms NEW

Coding of clinical data

- manage coding of
    - encounters (Reason for/Assessment of)
    - episodes
    - family history
    - health issues
    - measurements (LOINC)
    - medications and vaccinations (ATC)
    - procedures
- support for ATC, ICD-9, ICD-10, ICPC-2, ICPM, LOINC

Decision Support / Intelligence

- algorithm to assist choosing a non-steroid anti-rheumatic drug
- capacity to identify text similarities (trigrams) which may, despite variant and mis-spelt free-text entries, mean the same thing

- display of medication-related lab monitoring
- explicit per-patient reminders with due date/expiry NEW
- generic dynamic automatic hints NEW
- EDC calculator and storage
- GFR calculations
- Long QT Syndrome clinical probability score
- Snellen Chart display (unvalidated)
- Wells scores for DVT and Pulmonary embolism

Document Archive

- access any externally stored originals via permalinks
- add new documents
    - select files from file system
    - drop files onto GNUmed
    - get data from scanners/cameras
- associate metadata and textual descriptions with documents
- classify and sign off documents
- each part of one single document can be of any type, such as text, image, or video
- export documents to files for re-use outside GNUmed
- print, fax, or mail documents
- view documents in different sort modes
- interface with [Orthanc](#) DICOM server

Measurements and Test Results Handling

- any number of test types
- any number of test results
- any number of test result providers
- any number of aggregations of test types into equivalence groups for same-row display
- any number of test type "batteries" / "panels"
- by-day display mode for test results, including within-day replicates
- calculation of eGFR/BMI/body surface/...
- classify and sign off on results
- configurable panel/battery for medication monitoring / prescription risk management
- direct access to online lab test reference information
- display results as tabular grid / detailed per day / in clinical context
- manually manage test results
- support for reference unit and results conversion
- plot test results
- print test results

Medication Handling

- direct access to online dosage recommendations in renal insufficiency
- direct access to Qt related recommendations **NEW**
- document approval or non-approval of intake
- interface with external drug databases
    - check interactions
    - generate prescriptions
    - get in-depth drug information
    - import drugs and substances
- link to WHO ATC list
- manage drugs and substances
- print professional medication lists
- report an adverse drug reaction
- track measurements relevant to drug therapy
- track substance use (medications, drugs, OTC, ...)
- turn medication entries into allergy entries
- warn on known allergies if detected among currently used substances

Organizing Care **NEW**

- auto-filtering of inbox items on patient activation
- manage episodes from results
- manage primary provider for each patient

Progress Notes

- browse as timeline view
- browse chronologically (pooled), or within an EMR "tree" ordered by
    - health issue
        - episode
            - encounter
- browse revisions of entries
- export to text file
- free text search within and across medical records
- generate letters from progress notes
- SOAP-style input
- threaded, multi-issue encounters
- use included scores to improve care
- use self-expanding text macros with dynamic insert prompts for rapid data entry

- visual progress notes
    - annotate image templates or use (perhaps annotated) clinical photographs as progress notes

- access image capture devices as a source for progress note images
- view visual progress notes in-context within the EMR tree view browser

Risk Management

Allergies

- view at-a-glance the absence (or existence) of allergies
- view (and refresh) when the allergy state was last checked
- quickly confirm / refresh / revise the allergy state
- capture allergies at a drug-specific vs "class" level

Substance abuse

- capture use of nicotine / alcohol / other drugs

Family History

- track patients' risks as suggested by relevant family history

Lifestyle

- interface cardiovascular risk calculators (eg. ARRIBA)
- document approval of substance intake
- keep structured problem list
- many scores for clinical risks **NEW**

Tags

- tag patients with searchable icons with associated comments

Structured Problem Lists

- manage episodes (standalone or associated to a health issue)
- manage encounters (consultations)
- manage Past Medical History (health issues)
- manage progress notes
- quickly get an overview of a patient's relevant care events **NEW**

Tracking external care

- designate care as having been externally-provided
- support for organizational units' external identifiers
- track hospital admissions for patients
- track diagnostic and therapeutic procedures performed on patients, whether during hospital stays or in community

Vaccination Handling

- document vaccinations given or reported

- print latest vaccination status handout
- print vaccination history handout NEW
- report an adverse vaccination reaction (if different from ADR on medications)
- vaccine management including branded vaccines and generic pseudo-vaccines

Patient Handling

Billing NEW

- manage items to be billed to patients NEW
- create/print bills and invoices NEW

- quickly get an overview of a patient's relevant care events NEW

Creating patients

- manually add new patient
- import new patient from legacy software
- import new patient via German medical cards "KVK" and "eGK"
- import patient from the Clinica EMR NEW

Locating and Managing patients and identities

- search for patients by
    - name fragments (soundalikes, previous names, nicknames, ...)
    - any external and internal ID (drivers license, chart no, care plan no, ...)
    - date of birth
- edit patient demographics
    - support for estimated date of birth NEW
    - support multiple identities (names and aliases), addresses, phone numbers, identifiers
    - support emergency contacts
    - support occupation tracking
- concurrently access a patient record (by more than one person at a time)
- disable patient record
- merge two patients

Waiting lists management

- add current patient to user-definable waiting list zone(s) with comment(s)
- filter patients by waiting list zone for a display of Zone, Urgency, Waiting time, Patient, Born, Comment
- activate patient with a double-click

Other Functionality

Customization

- configuration
    - per user, per workplace, *database-based* (thus, site-wide) options
    - configurable client GUI font

- hooks for custom scripts to be run following events in the client
    - e.g. run a script after activating a patient

- reference data
    - download and install data packs independent of application releases

Database Functionality

- access from Linux, Windows, and MacOSX
- backup: automated, hands-off, zero downtime, digitally signed
- installation on RAID/NAS/encrypted devices
- "HIPAA compliance-oriented" auditing and logging

Interfaces

- card-reading support for German eGK/KVK/PKVK on Windows

- external appllication links
    - calculate stroke/MI risk using ARRIBA riskulator
    - display a list of online medical knowledge resources
    - import data from the [Clinica](#) EMR NEW
    - link to an online lab tests reference information database
    - look up drugs in the German *MMI/Gelbe Liste* drug database
        - works under Windows and Wine
    - look up drugs in *!FreeDiams* drug database
    - use a DICOM viewer to display CD-ROMs containing X-Rays, MRs, CTs etc
- HL7 lab results import

Multi-language-capable (i18n)

- a single database can present its
    - menus
    - headings and screen elements
    - listings in multiple languages to different users at the same time

(depends on the user community to contribute translations)

Resilience

- automated logging, recovery from, and reporting of most errors
- lossless upgrades, with emphasis on data integrity

Statistics and Reports

- activate patients right from the report if applicable
- create reports dynamically adjusting to the currently active patient NEW
- display audit log
- run reports of arbitrary statistical complexity over any data in the database
- save report generator results as CSV file
- visualize (plot) the results

Other usability and features

- clipboard-based XML-formatted demographics exchange
- create new test types as results are being created at the point of care
- display of missing gender
- dynamic keyword text expansions
- management of dynamic hints
- per-patient suppression of dynamic hints
- remote control GNUmed from a legacy application
    - activate a particular plugin for that patient
    - import patient from German-style XDT file (BDT/GDT)
    - make GNUmed select that patient
- TLS enabled on sending bug reports
- vCard import/export
- within-patient location of any unreviewed results

For installation and maintainnace visit Futuristic Security on http://futuristicsec.com or you can kindly mail us on zak@futuristicsec.com for further inquery.