



# AEGLE

An Analytics Framework  
for Integrated and  
Personalized Healthcare  
Services in Europe

## AEGLE Project Results The Biolytica Platform

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## PROJECT AIM

- Improve the performance of Healthcare
- Enable healthcare professionals offer precision medicine services

## HOW?

- Insights from BIG medical data after processing with INTELLIGENCE

## CHALLENGES?

- Heterogeneity of database formats
- Hindered procedures for consent – ethics & legal
- Keep price reasonable to reduce healthcare costs

## PROJECT SOLUTION

AEGLE offers a **platform** for **Big medical Data** with libraries of stand-alone **analytics** – the Biolytica Platform



Value  
Proposition



Minimal Viable  
Product

## FOR WHOM?

- RESEARCHERS – hypothesis generation, testing
- CLINICAL PRACTITIONERS – clinical decision making support
- HEALTHCARE PLANNERS – improve public health

## WHAT?

- Descriptive analytics
- Predictive analytics
- 2 User Interfaces: R&D + Clinical Decision Support

# Benefits of the approach

## Clinical trial

- Minimize heterogeneity
- Test one hypothesis
- Artificial environment

**vs.**

## Data driven research

- Embrace heterogeneity
- Exploratory analysis
- Everyday practice data

## 3 Use Cases

- Intensive Care Unit
  - Mechanical ventilation & patient-ventilator interactions
  - Personalization of patient care & early identification of deterioration
- Non-malignant chronic diseases, in particular Diabetes Mellitus Type 2
  - Prediction of response to third-line agents
  - Pharmacovigilance
  - Clustering
  - Prediction of complication rates
- Chronic Hematologic malignancies, in particular Chronic Lymphocytic Leukemia
  - Identification of prognostic factors that lead to CLL onset (immunogenetic, whole exome and RNAseq analyses)

## An example from the ICU use case

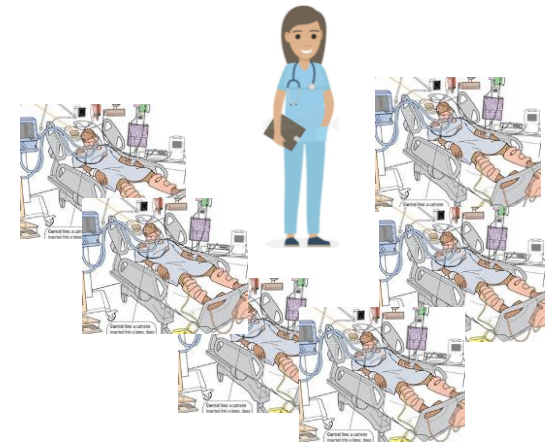
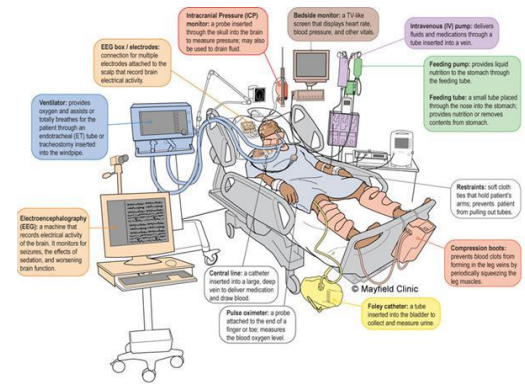
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- Clinical Decision Support user interface (CDS UI)
- Research & Development user interface (R&D UI)



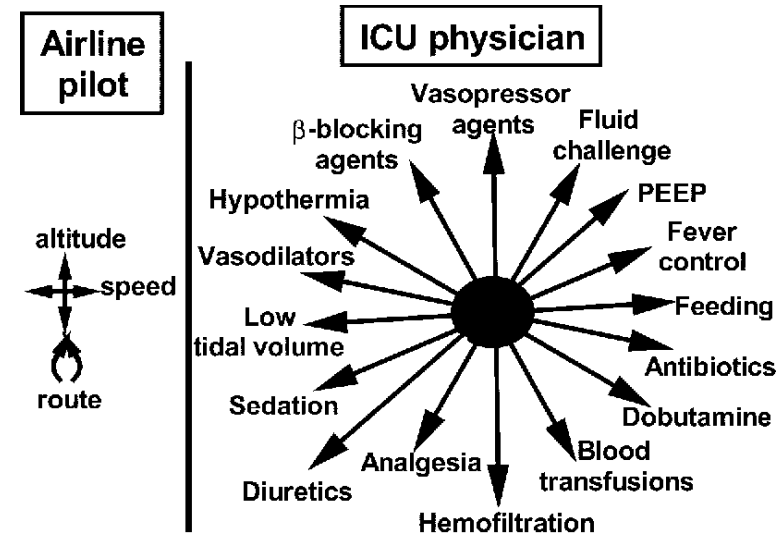
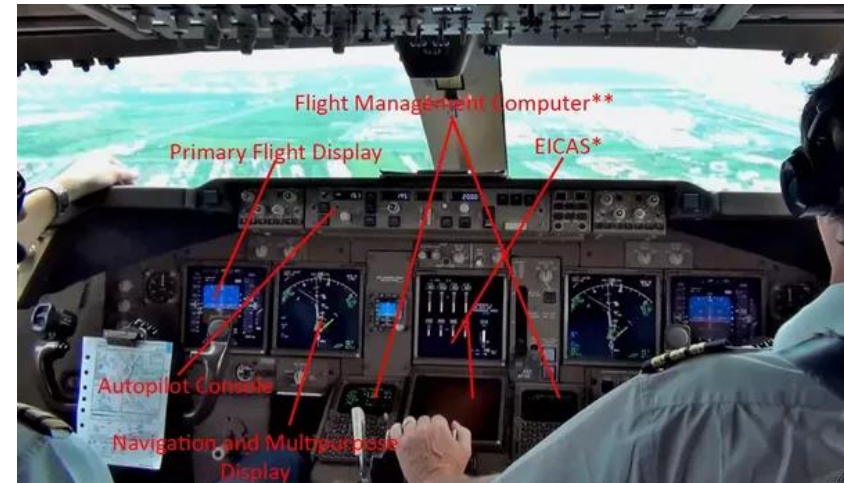
# Personalization of Patient Care & Early Identification of Deterioration – Clinical problems

- Complexity of care
- Minor but significant changes may go undetected
- Important but not life-threatening problems may be neglected
- Reliance on human factor
- Review of an ‘event’ not easy




# Biolytica enables:

1. Calculation of needs
2. Estimation of deficits
3. Visualization of delivery
4. Alerts for delivery below physician-set target (CDS-UI)
5. Predictive analytics based on nutrition and EHR data – alerts for patients at high risk of death
6. Tool to analyze nutrition in association with all EHR data



# Biolytica CDS user interface

CDS

**AEGLE**

Assign Beds.

Select Patient.

Bed.1

Category	Value
gender	MAN
age	73
weight	72
height	165
bmi	26.446
bsa	1.81659021245849

- > Nutrition Single
- > Nutrition Total
- > Drug Administration
- > Hospitalization Info
- > Bennett Menu
- > PVI

Select Time-Series

difference

**PATIENT DETERIORATION DETECTED**



CATEGORY	VALUE
CALORIES ABSOLUTE	4050
CALORIES DEFICIT	-9443.799999999999
CALORIES PERCENTAGE	0.30014
NONPROTEINS	0.776
NITROGEN	0.05

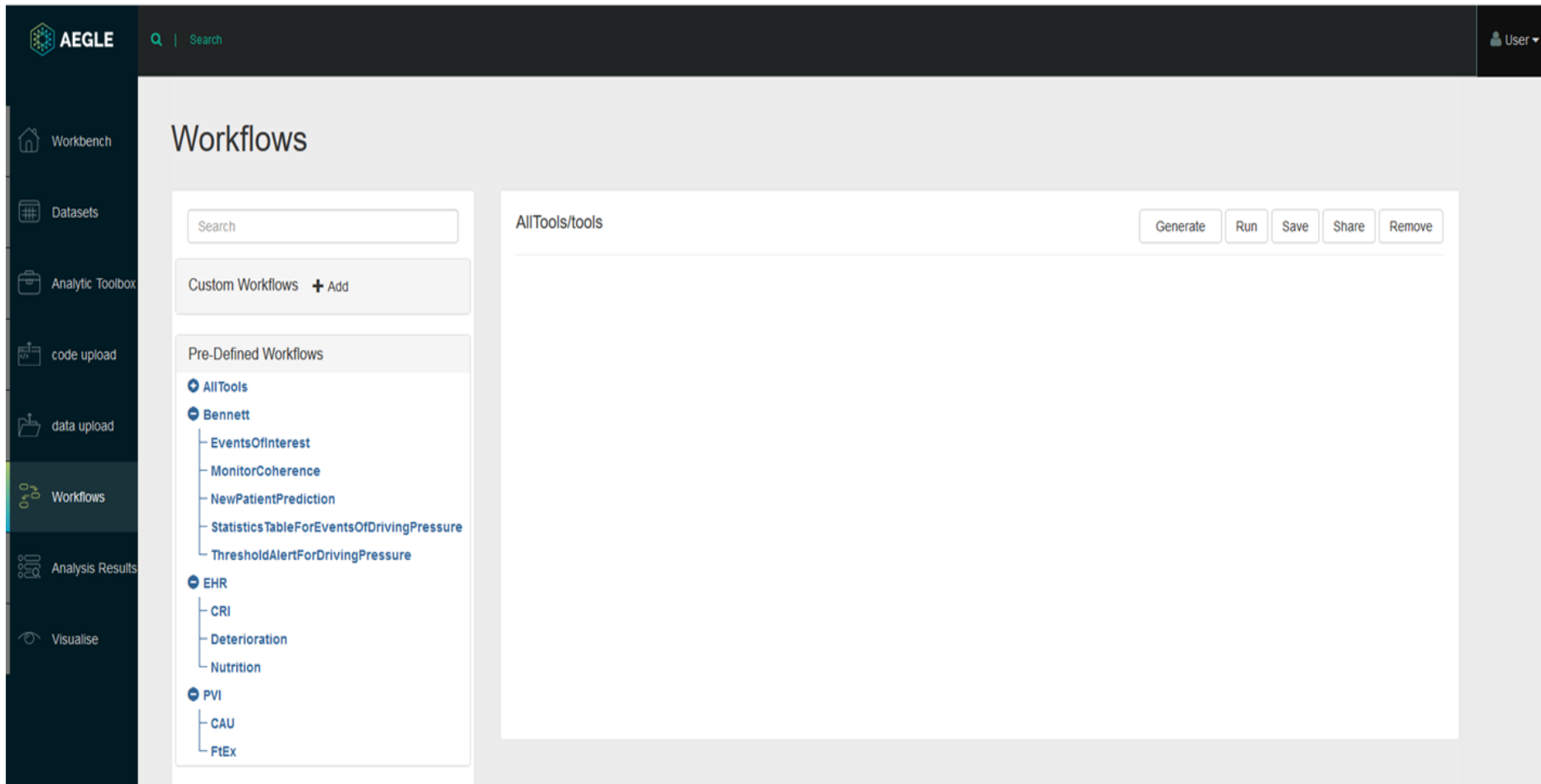
!

Bed.1

Nutrition

> Calories

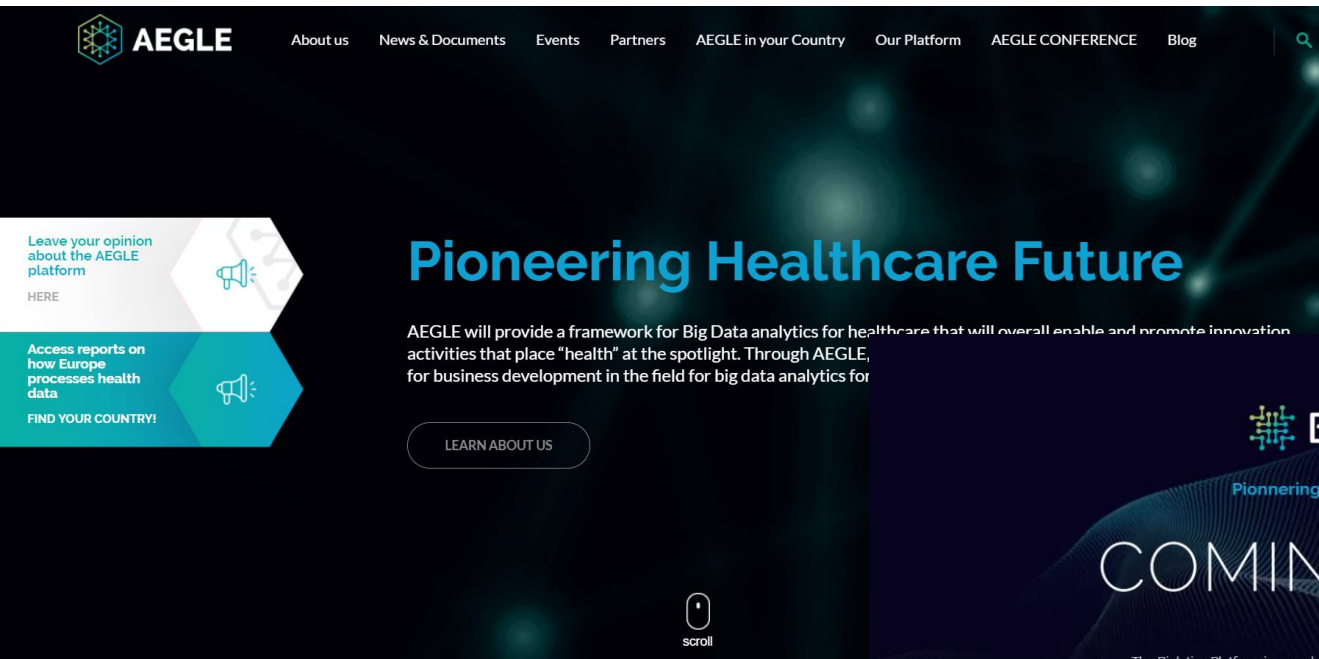
# Biolytica R&D user interface



The screenshot displays the Biolytica R&D user interface. The top navigation bar includes the AEGLE logo, a search bar, and a user profile icon. The left sidebar contains navigation options: Workbench, Datasets, Analytic Toolbox, code upload, data upload, Workflows (highlighted), Analysis Results, and Visualise. The main content area is titled 'Workflows' and features a search bar, a 'Custom Workflows + Add' button, and a 'Pre-Defined Workflows' section. The 'Pre-Defined Workflows' section is organized into a tree structure with expandable categories: AllTools, Bennett (containing EventsOfInterest, MonitorCoherence, NewPatientPrediction, StatisticsTableForEventsOfDrivingPressure, and ThresholdAlertForDrivingPressure), EHR (containing CRI, Deterioration, and Nutrition), and PVI (containing CAU and FtEx). On the right side of the interface, there is a panel titled 'AllTools/tools' with a search bar and a row of action buttons: Generate, Run, Save, Share, and Remove.

More info at:

<http://aegle-uhealth.eu>



The screenshot shows the AEGLE website homepage. At the top left is the AEGLE logo. The navigation menu includes: About us, News & Documents, Events, Partners, AEGLE in your Country, Our Platform, AEGLE CONFERENCE, and Blog. A search icon is visible on the right. The main heading is "Pioneering Healthcare Future". Below it, a paragraph states: "AEGLE will provide a framework for Big Data analytics for healthcare that will overall enable and promote innovation activities that place 'health' at the spotlight. Through AEGLE, for business development in the field for big data analytics for". There are two call-to-action buttons: "LEARN ABOUT US" and "FIND YOUR COUNTRY!". On the left side, there are two interactive elements: "Leave your opinion about the AEGLE platform HERE" and "Access reports on how Europe processes health data FIND YOUR COUNTRY!". A "scroll" indicator is at the bottom right.



The screenshot shows the Biolytica website. The logo "Biolytica" is at the top, with the tagline "Pioneering Healthcare Analytics". The main heading is "COMING SOON". Below it, a paragraph states: "The Biolytica Platform is a product of the AEGLE Project, an H2020 co-funded framework programme of the European Union under Grant Agreement no. 644906." There is a "LEARN ABOUT AEGLE" button at the bottom.

<http://biolytica.eu>

## 28 Legal Reports – AEGLE in your country campaign



 **AEGLE** Published by André Gomes da Cruz [?] · 2 July at 12:31 · 🌐

GREECE report is now up! 🇬🇷 Check how the greek process health data in their country. #GDPR #healthdata #dataprotection

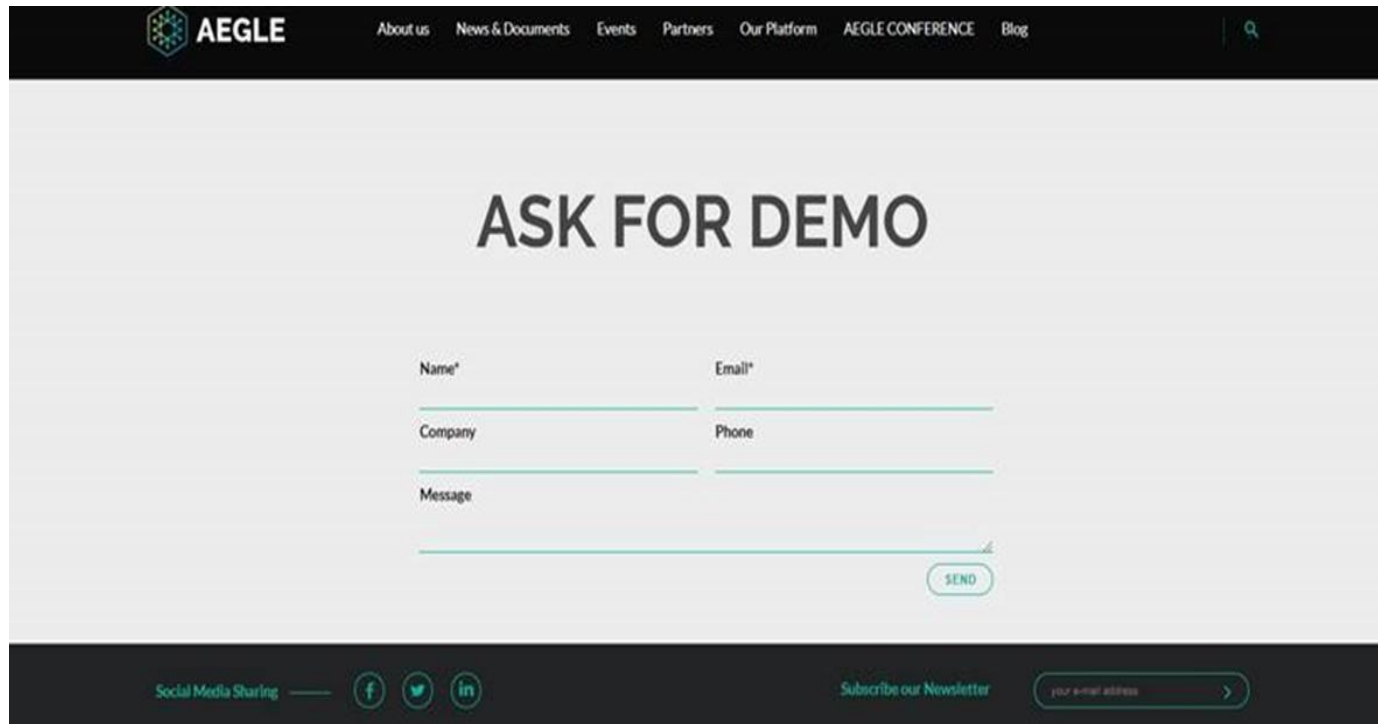
**AEGLE in your country**  
How does your country process Health data after GDPR?



AEGLE-UHEALTH.EU  
**Greece Report**

The image shows a social media post from AEGLE. The post text says 'GREECE report is now up! 🇬🇷 Check how the greek process health data in their country. #GDPR #healthdata #dataprotection'. Below the text is a graphic with a dark blue background featuring a map of Europe. On the right side of the graphic is a padlock with a small flag of the European Union on top. The text 'AEGLE in your country' is written in large white letters, followed by the question 'How does your country process Health data after GDPR?'. In the bottom left corner of the graphic is the flag of Greece. At the bottom of the post, it says 'AEGLE-UHEALTH.EU' and 'Greece Report'.

# We are looking for key partners!



The screenshot shows the AEGLE website's 'ASK FOR DEMO' form. The header includes the AEGLE logo and navigation links: About us, News & Documents, Events, Partners, Our Platform, AEGLE CONFERENCE, and Blog. The main heading is 'ASK FOR DEMO'. The form fields are: Name\*, Email\*, Company, and Phone. Below these is a Message field with a text area and a 'SEND' button. The footer contains 'Social Media Sharing' with icons for Facebook, Twitter, and LinkedIn, and a 'Subscribe our Newsletter' section with an input field for an email address and a right-pointing arrow.



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[www.aegle-uhealth.eu](http://www.aegle-uhealth.eu)

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## Partners

EXODUS AE (Coordinator), ICCS, KINGSTON, CERTH, Maxeler  
Technologies Limited, UPPSALA UNIVERSITET, UNISR,  
Time.Lex, EUR, CHS, LOBA, PAGNI, GNUBILA FRANCE, NTU



# Precision medicine in Chronic Lymphocytic Leukemia

*matching patient profiles with treatments*

