



Virtual Clinic

AI based educational
simulation platform for
medical interview



About authors

BD Polska is a technology company specializing in Data Science and AI technology.

<http://bdpolska.com>

Our team has experience in buliding IT applications using advanced analytics and open-source software. We have a particular focus on AI-technology:



**Data Analytics
and Risk Management**



Machine Learning



Natural Language Processing



Computer Vision



Products

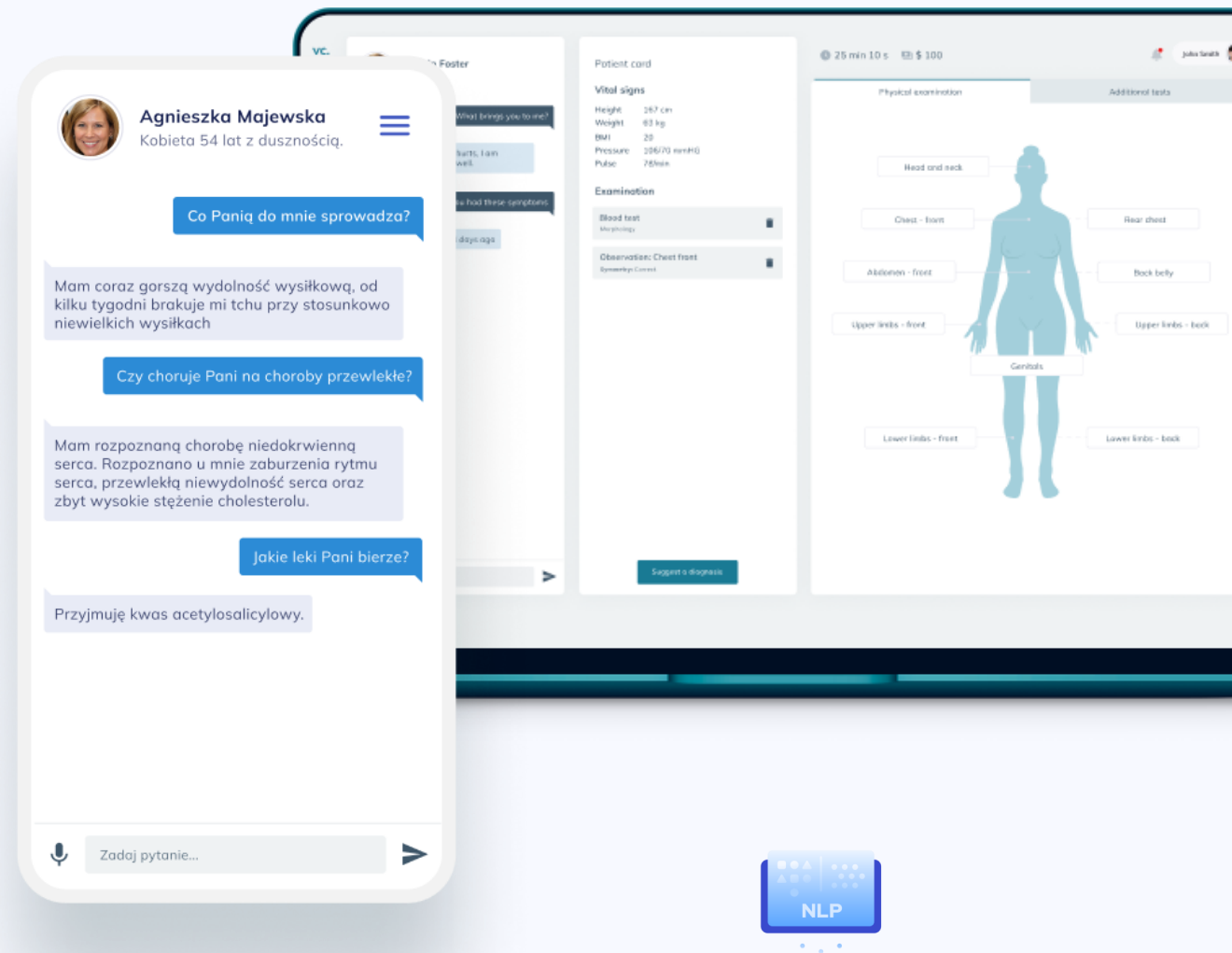
Virtual Clinic

Interactive simulation of medical interview and treatment planning

Case-based learning

Problem-solving

Evidence-based-medicine



<http://wirtualnaklinika.com>

Timeline for Virtual Clinic



Since 2019 we have secured over 1 mln EUR financing for R&D from UE funds

2018–2019

Concept

- Co-operation with **Medical University of Silesia** on design and testing
- Grant for R&D from **National Center for Research and Development**

2020

Pilot

- Evaluation of MVP at **Warsaw Medical University**
- Getting feedback from users and adding new features

2021

Stabilization

- First commercial contract and successful implementation of Virtual Clinic at **Poznan University of Medical Sciences**

2022–2023

Expansion

- 3 universities use Virtual Clinic
- 4 others are in a pipeline
- 1Q2023 launching Virtual Clinic for individual users

Innowator Mazowsza 2022

- Virtual Clinic won the 1st place in the innovative firm contest

Innovation Register 2022

- Ministry of Health recommended Virtual Clinic to be used at Medical Schools

Customers who put trust in us:





Clinic



Exercises

Exams

Roles

Patient record

Chat

Physical examinations

Additional examinations



Jerzy Jaworski

A man comes to the hospital with severe abdominal pain.

how long does stomach hurt you

For two days. ...

how strong is it

The pain is severe (from 7 to 10 on a scale of 10). ...

do you wake up because of the pain

I don't wake up because of the pain. ...

where in particular you feel the pain

I can't say. ...

is the pain dependent on the time of day

I can't say if the stomach pain is dependent on the time of day. ...

Message...

Inspection

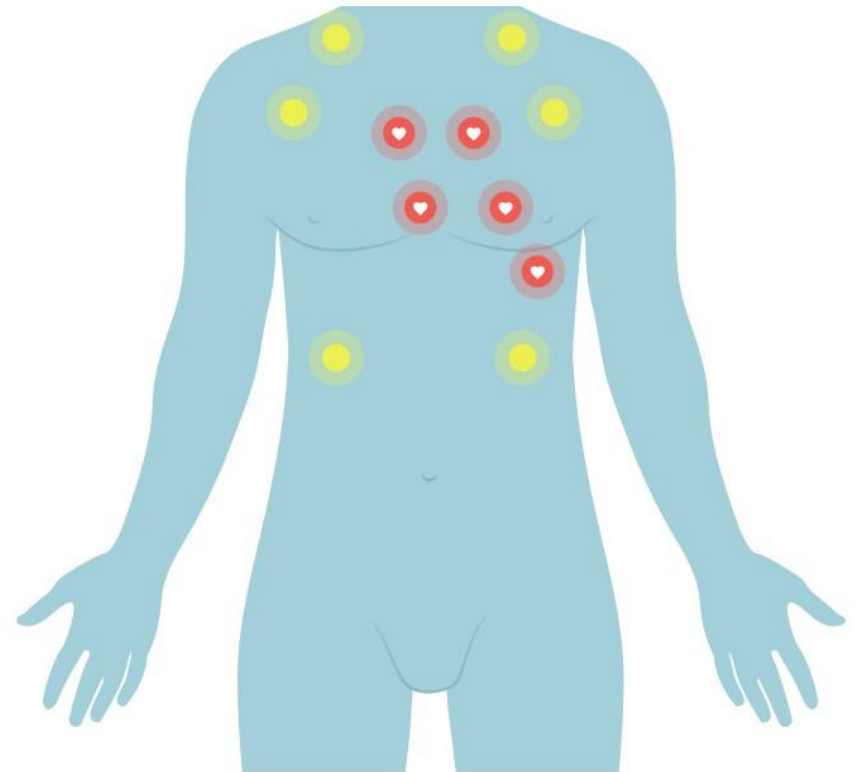
Percussion

Auscultation

Palpation

Neurological Examination

< Return





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Jerzy Jaworski

A man comes to the hospital with severe ab

For two days. ...

The pain is severe (from 7 to 10 on a scale of 10). ...

I don't wake up because of the pain. ...

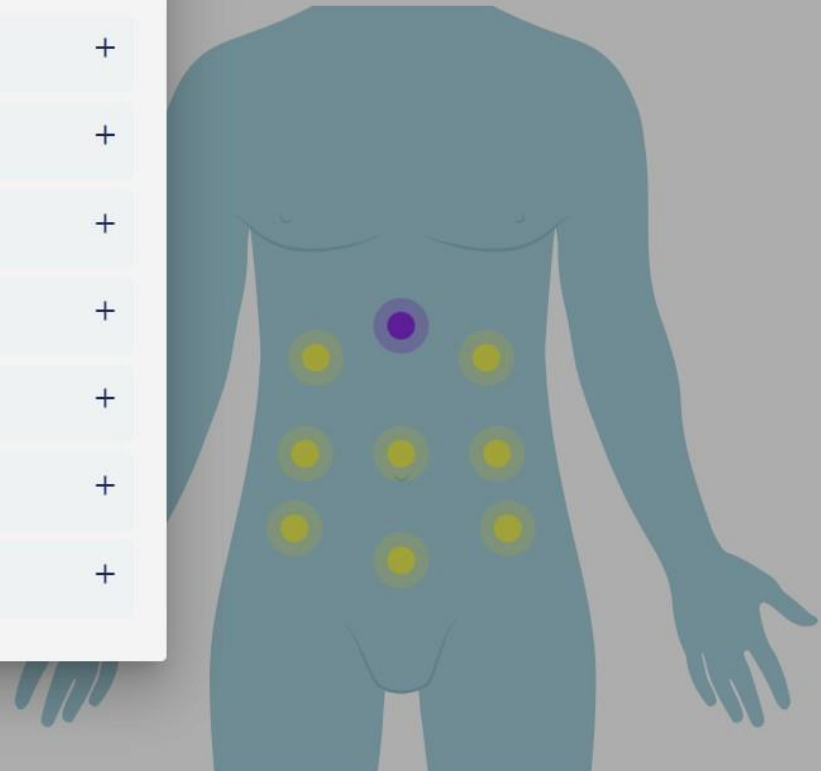
I can't say. ...

I can't say if the stomach pain is dependent on the time of day. ...

Message...

Abdomen > palpation > epigastrics

- Resistance**
lack +
- Muscular defense**
Increased +
- Soreness**
pain during palpation +
- Peritoneal symptoms**
Absent +
- Skin, warm**
Valid +
- Skin, moisture**
correct humidity +
- Skin, elasticity**
correct flexibility +



ULTRASOUND > Abdominal ultrasound

Liver enlarged, without focal changes, with smooth outlines, increased echogenicity as in the case of steatosis.

In the bile ducts, intrahepatic or extrahepatic deposits are not visible. Intrahepatic bile ducts not widened. Extrahepatic bile ducts not widened.

Gallbladder not enlarged. Thin-walled gallbladder. Gallbladder without deposits, inflammation.

Hepatic veins not expanded, encode correctly in Doppler examination.

The veins of the portal system are not widened, correctly encode in the Doppler study.

Pancreas of normal size, homogeneous. Wirsung cable not wide. Pancreas without focal lesions. Head of the pancreas enlarged, hypoechoic, with a blurred outline. Perianally visible fluid collections and reactive changes in adipose tissue - a picture as in the case of moderate ACS. The body of the pancreas is enlarged, hypoechoic, with a blurred outline. Perianally visible fluid collections and reactive changes in adipose tissue - a picture as in the case of moderate ACS.

Spleen not enlarged. Homogeneous spleen. Spleen without focal changes.

Adrenal fields free.

Kidney of the law of the correct size. Right kidney with a smooth outline. Within the right kidney, deposits are not visible. UKM of the right kidney not widened. Left kidney of normal size, with a smooth outline. Within the left kidney, deposits are not visible. UKM of the left kidney not widened.

Bladder well filled, with a non-thickened wall.

Prostate gland not enlarged, homogeneous.

Retroperitoneal lymph nodes not enlarged.

Abdominal aorta not widened.

Visualized arterial vessels normal.

A small amount of free fluid in the abdomen.

widok

1 / 2





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Jerzy Jaworski

A man comes to the hospital with severe abdominal pain.



Cancel diagnosis

Propose the diagnosis

Additional examinations

ULTRASOUND > Abdominal ultrasound

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0 Continue to cart

Search for an examination



Blood



Urine



Cerebrospinal fluid



Feces



ULTRASOUND



X-RAY



ECG



General



Clinical scales



Packages



Creator



Patient info

Medical examination

Physical examination

Diagnostics

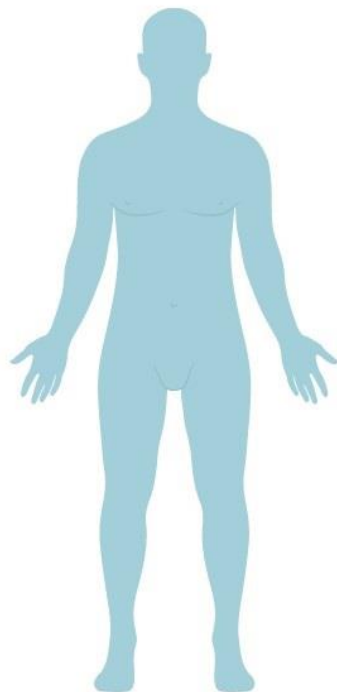
Treatment



Save

File

Clear



Head and neck

Upper limbs front

Chest front

Abdomen (2)

Perineum

Lower limbs front

Upper limbs back

Chest back

Back down

Rectal area

Lower limbs back

Selected points of physical examination

View



Abdomen > palpation

epigastrics

0

Muscular defense

- Increased

Soreness

- pain during palpation

Required

umbilical region

0

Muscular defense

- Increased



Reviews

Medical University of Silesia in Katowice

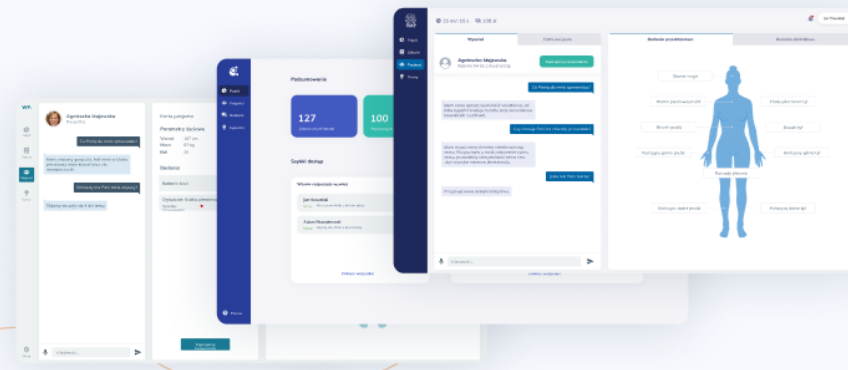


"The element that distinguishes the Virtual Patient platform from similar solutions is an innovative approach to communication and the ability to learn from the system based on the analysis of user activity. The innovative elements of the application constitute a new quality for both students and lecturers."

Warsaw Medical University



"A unique functionality is the simulation of a subjective examination conducted with the use of natural language: the examination imitates the conversation between the diagnostician and the patient, teaches the correct conduct of a medical interview and building questions understandable to the patient."



Opinion from users

Based on the opinions of the participants of the 10th edition of the Summer Camp of the International Association of Medical Students IFMSA-Poland (September 12-16, 2022)



Student

Virtual Clinic gives a lot of possibilities, allows you to learn a lot and verify your knowledge in practice.



Student

As students of the Medical College of the Jagiellonian University, we will be very happy to learn with this application at our university. Please contact the medical teaching institution, we will be grateful as students.



Student

I would like to use the application both at home and at university. I think it would be helpful every step of the way.

Our approach

SaaS subscription to Virtual Clinic Platform

We deliver technology

Experts provide medical cases

Users buy subscription to the platform



Plans for 2023

6+

Subscriptions from
Medical Universities

5 000 +

Individual subscriptions

export

International sales

- More subscriptions from Medical Universities and Individual Users
- More independent experts providing expert input
- Launching international sales

We are looking for



Medical Universities and HealthCare companies interested in using and/or development of Virtual Clinic



Independent experts interested in building medical cases in Virtual Clinic



Investors with experience in HealthCare sector happy to assist us in international expansion and development of Virtual Clinic

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