



# North Macedonia Digital Health Implementation

*From 'My Appointment' to 'My Health'*

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## Snapshot – North Macedonia

### Platform for growth

#### Public system, MoH-level

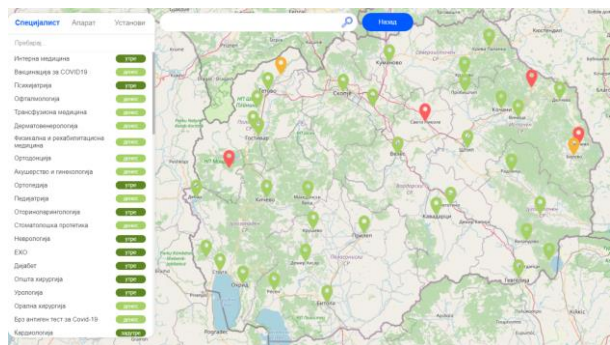
- Pinga deployment – *Moj Termin*
  - National EHR
  - Referrals exchange
  - RIS/LIS for ministry hospitals
  - Specialist software for ministry doctors
  - Patient app – *Moe Zdravje*
  - Prescriptions exchange\*
  - National registers

#### Public hospitals

- UC Cardiology
- Worthwhile expansions: cardiology, then cardiosurgery, then nephrology and others

#### Other

- Very interested in research partnerships based on the data we have available
- Pinga 'PMS (EMR)' for internal medicine, Ob/Gyn



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## Moj Termin in a nutshell

### Annually

- Approx. **2.7m** specialist referrals
- Approx. 400k RDU referrals
- Approx. 1.8m LU referrals
- Approx. 200k hospital admissions
- Approx. 11m GP exams
- Approx. **32m** prescriptions issued
- Approx. **24m** completed prescriptions

### Lifetime

- Approx. 47m total issued referrals
- Approx. 43m total realised referrals
- Approx. 60m prescriptions issued
- Approx. 47m prescriptions completed
- Approx. 1.8m patients have received at least one service



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## The journey from 'booking' to 'health'

### Opening moves

- 'Moj Termin' means 'My Booking' – the initial use case was conceived as a better way to co-ordinate care appointments
- Healthcare is an interconnected space of functions and also of problems
  - This means a powerful solution can also solve many problems at once!
- Initial steps in radiology led to clinical process updates
  - ICD-10 is mandatory, but the only mandatory, parameter for a referral or prescription
  - Clinicians can book (or their staff can book) at *time of referral* – a very efficient interaction

### 'Wide but shallow'

- The reform produced rapid improvements in process and reductions in waiting time
- The reform was possible because it was *simple* – local vendors could easily engage
- By mandating such standards, and enabling compliance, a *de facto* medical record is created – a national HER
  - Clinician efficiency is increased – electronic record and initial standardization
  - After 10 years, all patients have history – so now it is provided by an app, *Moe Zdravje* – i.e. 'My Health'



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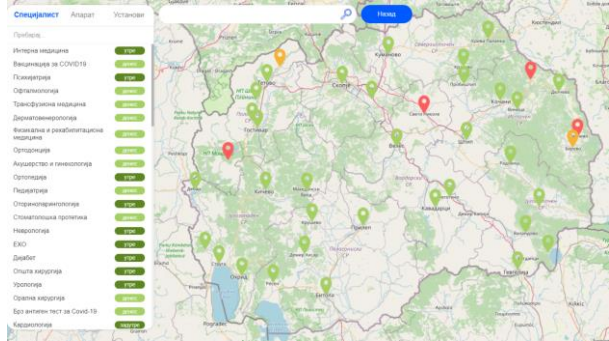
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# MK Landscape

## Platform for growth

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# Moe Zdravje – My Health

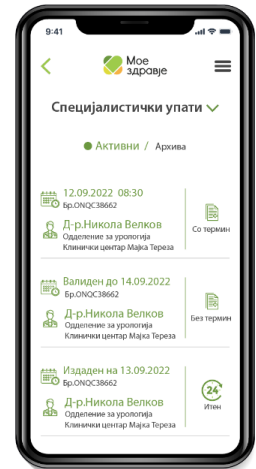
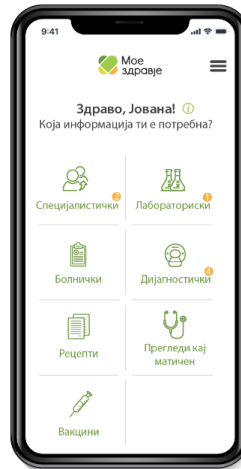
## Basic PHR app

### Direct system integration

- Fetches data from the national system – *Moj Termin*
  - National EHR
  - Referrals
  - Lab reports
  - Prescriptions
  - Imaging
  - Hospital discharge summaries
  - Specialist notes
  - Vaccination record

### Essential features

- Minimum patient effort
- Secure e-identity (provided by the national system in Macedonia for this)
- Family record integration



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# Introduction to Pinga

## A Health Operating System

- Pinga is a configurable workflow platform for healthcare
- Basic concept:
  - Medical record (EHR)
  - Clinical pathways
  - Forms and worklists

## Use cases

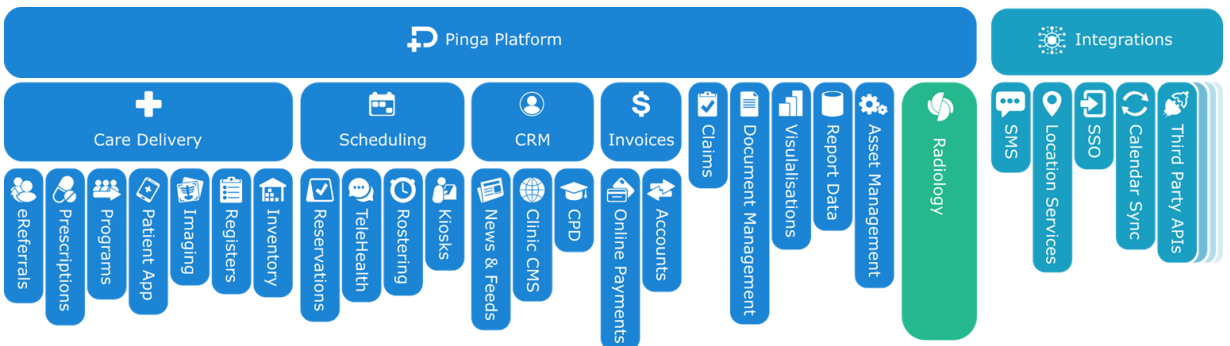
- *Moj Termin* in North Macedonia, and *Moj Doktor* in Serbia
- Breast Screen Aotearoa – RIS for NZ national breast screening
- Radiology – significant market share in ANZ of ‘RIS extender’ (patient and referrer engagement, portals, booking)
- Community care in Aus and NZ
- Allied health – mental health, occupational health, etc
- HIS – UC Cardiology in Skopje



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# What is Pinga



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# Pinga – powerful core components



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Solve Human Health.

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# Dashboards

**Scott Brownless** (33 years)  
 29/05/1988  
 Intake Time: 4:07 pm 13/01/2022 (3 days)  
 Reason for Stay: Chiari Malformation Surgery

**Timeline** (January 2022)

- 12:30 Pre Surgery Consult (Dr Elizabeth Booker)
- 14:00 Patients Consent (Scott Brownless)
- 14:25 MRI (EPHX MRI Service)
- 14:30 Pre Surgery Pathology (Plugged Hairy Hair Removal)
- 16:00 Surgery Preparation (Dr Elizabeth Booker)
- 12:00 Surgery (Dr Benjamin Junker)
- 15:00 Ward Admission (Amalika Boremath)
- 16:26 Ward Measurements (Patrick Warford)
- 17:30 Ward Measurements (Patrick Warford)
- 18:30 Ward Measurements (Repeats Every hour)
- 11:00 Surgeon Follow up (Dr Benjamin Junker)
- 12:00 Vocational Therapy (Linda West)

**Ward Rounds** (Dr Elizabeth Booker)

Provider: Dr Elizabeth Booker  
 Service Date: 15/01/2022 12:30

**Order Specific Details**

Pathways: BP + Cognitive Response Post Operative Neurology Diabetes Type 1

Repeats Every: 1 Hours  
 Repeats Until: 5 Events

Medications: Amoxicillin Clavulanate (250 X), Warfarin (250 X)

Measurements: Blood Pressure (X), Cognitive Score (X)

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# Clinical processes

Reference number : ORLN48008 Room [icon] [icon] [icon] Change treatment type Dossier Covid19 status Load ECG images Delete treatment Towards a reckoning Patient history Archive

## John Smith (88) Echocardiography

Resources Report Therapy Referrals Allergies and intolerances Documents MyTerm

### SEGMENTAL KINETICS

Basal segments	Middle segments	Top segments	USA score
1. Anterior (1)	7. Anterior (1)	13. Anterior (1)	Additional comment
2. Anteroseptal (1)	8. Anteroseptal (1)	14. Septal (1)	
3. Inferoseptal (1)	9. Inferoseptal (1)	15. Inferior (1)	USA score
4. Inferior (1)	10. Inferior (1)	16. Lateral (1)	1
5. Inferolateral (1)	11. Inferolateral (1)	17. Top (1)	
6. Anterolateral (1)	12. Anterolateral (1)		

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# Dynamic Grids

Home / Assessments Export

Id	Debtor	Clinic	Full Name	Appointment Date		Date of Birth	Services	Status	Info
				From	To				
4926	Randstad Pty (117)	South Perth	John Smith	06-02-23 08:00 - 08:45	1988-07-27	[Icons]	In Progress	[Icons]	
5251	Labourao (335)	Cannington	John Smith 2	06-02-23 08:00 - 09:00	1993-01-12	[Icons]	In Progress	[Icons]	
4824	All West Pty (128)	South Perth	Patient 1x1	06-02-23 08:00 - 09:00	1987-08-19	[Icons]	In Progress	[Icons]	
5245	Karridale Pty (184)	South Perth	Scott John	06-02-23 08:00 - 09:00	2000-03-16	[Icons]	Pending Review	[Icons]	
4600	Brunel Energy (146)	South Perth	John S.	06-02-23 08:00 - 09:00	1999-02-13	[Icons]	In Progress	[Icons]	
4934	Avopling Pty (425)	South Perth	Will Smith	06-02-23 08:00 - 09:00	1995-01-11	[Icons]	In Progress	[Icons]	
4705	Central Pty (247)	Cannington	Good Will	06-02-23 08:00 - 09:30	1969-10-10	[Icons]	No Show	[Icons]	
5354	Pix N Portal (135)	Cannington	Jason M.	06-02-23 08:00 - 09:00	1970-08-29	[Icons]	In Progress	[Icons]	
4866	Origin HSE Pty (323)	Cannington	Robert X.	06-02-23 08:00 - 09:00	2023-01-27	[Icons]	No Show	[Icons]	
5352	All West Pty (128)	Cannington	Mr Ali	06-02-23 08:00 - 09:00	1990-01-14	[Icons]	No Show	[Icons]	
5339	Private (260)	Cannington	Marcy M.	06-02-23 08:00 - 09:00	1984-05-22	[Icons]	Pending Review	[Icons]	
5300	Linkforce Pty (86)	Cannington	Michael J.	06-02-23 09:00 - 10:30	2023-02-02	[Icons]	New	[Icons]	

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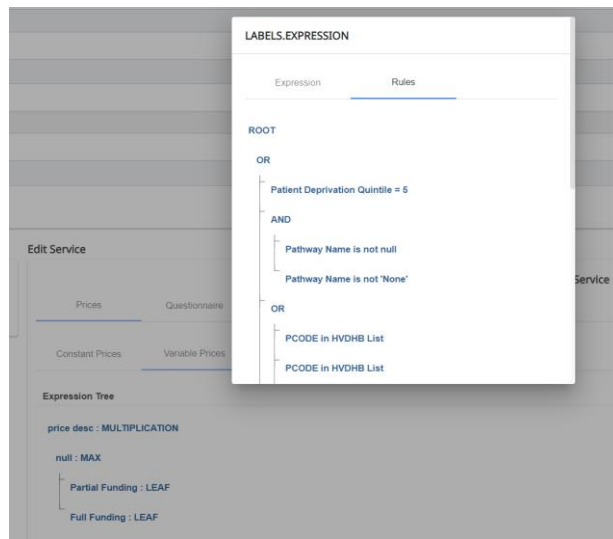
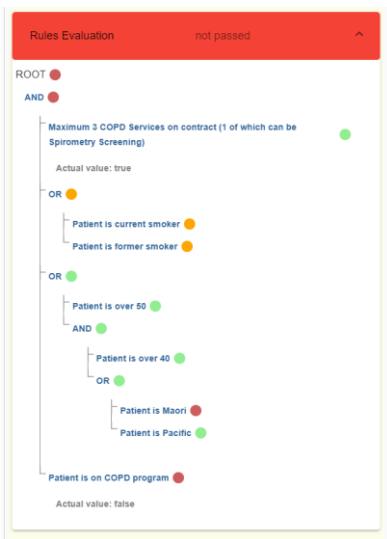
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# Dynamic Grids

#	Program	Care Team	Full Name	Email	NHI	Intake Data	Intake Date	Care Plans
1	Hauora Plan			sss@aaa	AAA		08.02.2023 04:33	
2	Hauora Plan		D Patient	patient50@gmail.com	SSS		08.02.2023 04:32	
3	Pae Ora Plan		B Patient	bpatient50@outlook.com	B		08.02.2023 04:14	Hora Te Pahi Health Services
4	Hauora Plan		B Patient	bpatient50@outlook.com	B		08.02.2023 04:11	
5	Pae Ora Plan		B Patient	bpatient50@outlook.com	B		08.02.2023 04:10	To Ora Compass Health (Fitness)
6	Hauora Plan		B Patient	bpatient50@outlook.com	B		08.02.2023 04:09	

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# Evaluation Engine



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# Integrations

