

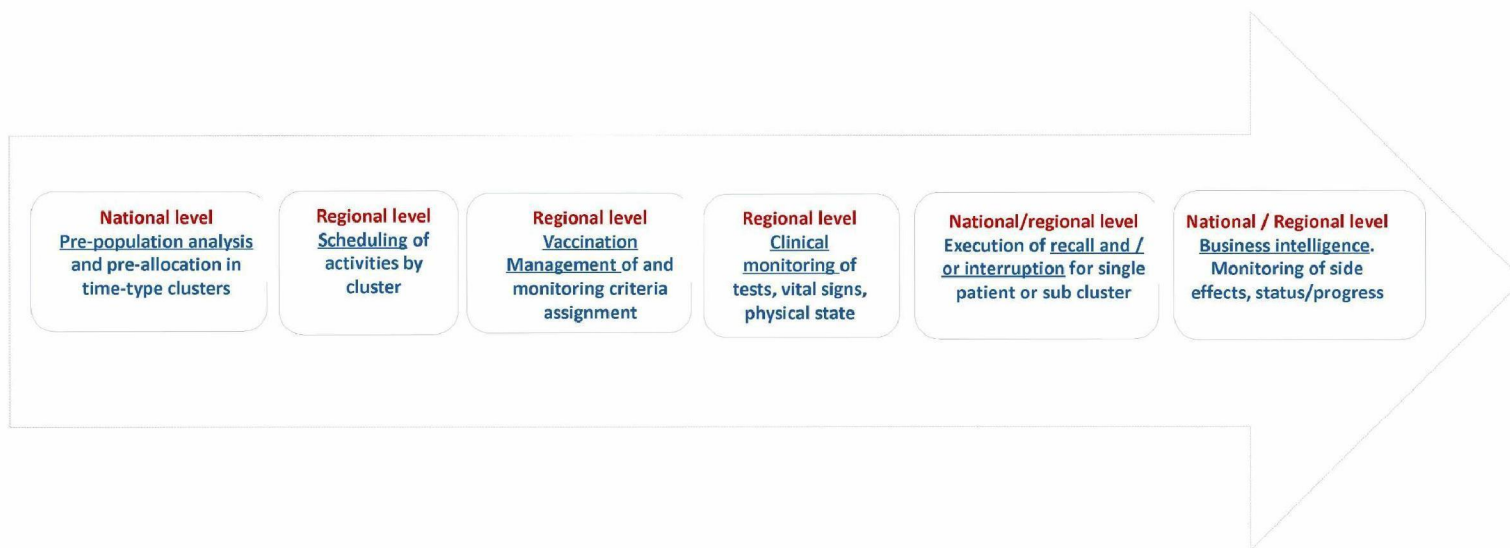


## The challenge

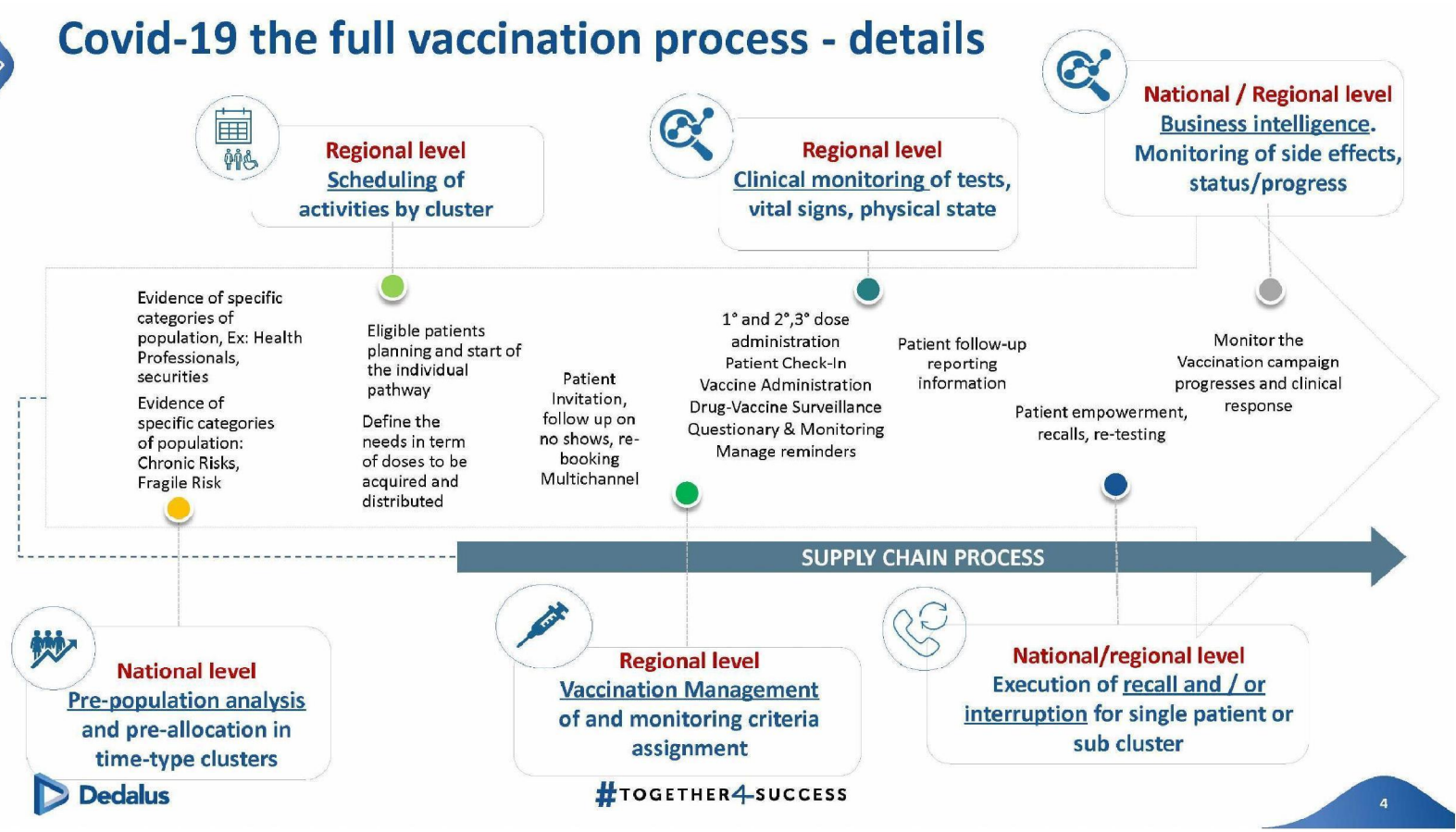
Never in human history a vaccination campaign has been carried out with the following characteristics:

- Between **60% and 70% of a country's population will need to be vaccinated** in the shortest time possible
- It will be used Vaccines whose efficacy and safety have never really been tested in the field
- **Logistics of different** types of vaccines will have to be managed with complex transport and storage problems
- Individual patients will have to be managed according to pre-assigned vaccination priorities: this **pre-assignment is going to be complex**
- The phase 4, following a phase 3 accelerated as never before in the history of the development of a vaccine, **will have to be carried out as a kind of phase 3bis**
- The relationship with the healthy citizen and with the **patient suffering from any chronic or acute disease cannot be treated in the classical way** of a vaccination campaign

## Covid-19 the full vaccination process



# Covid-19 the full vaccination process - details

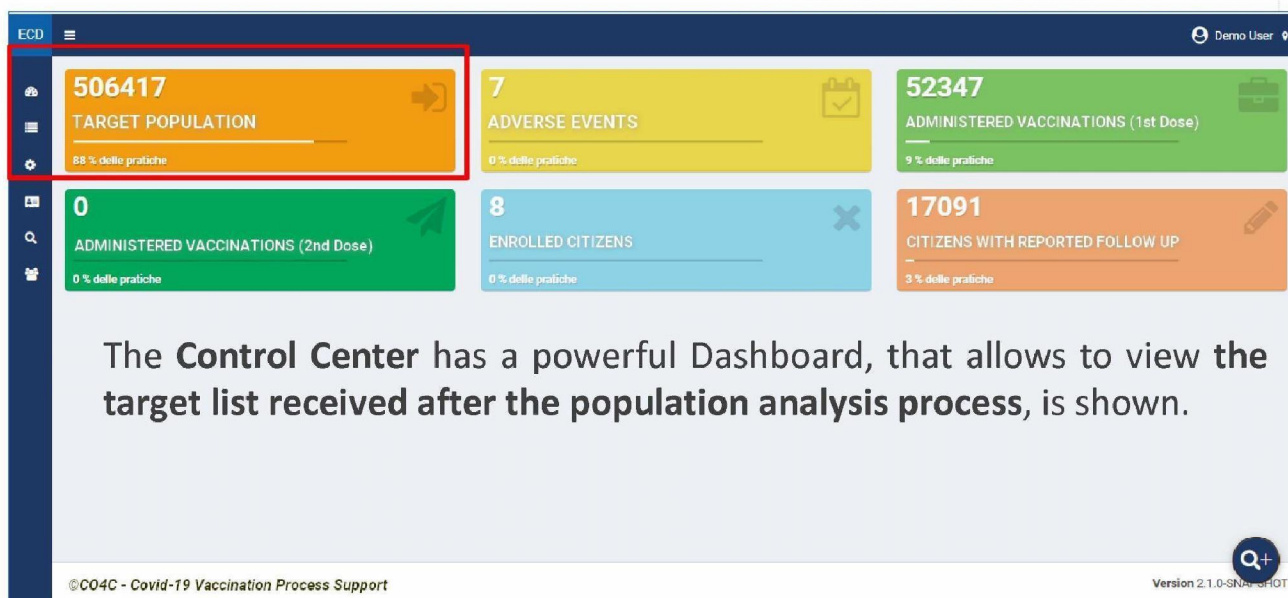




> **Patients enrollment and plan of care**  
Our application – example slides

LIFE FLOWS THROUGH OUR SOFTWARE

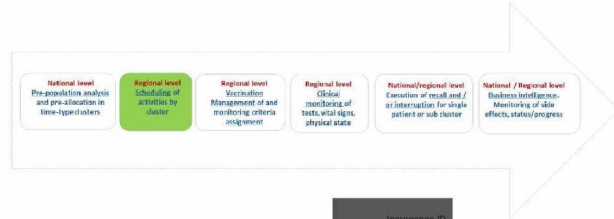
## Co4C: Eligible Population incoming



The **Control Center** has a powerful Dashboard, that allows to view the target list received after the population analysis process, is shown.



## Co4C: Vaccination Point select patients of Cluster and define treatment protocol



Created By	Full name	Pathologies	Criteria	Insurance ID
Authority	LLOYD PATRICK	COVID, Diabetes	Pathologies: Diabetes	13322
Authority	EVANS CARL	COVID, Diabetes	Age Cohort: 60-70	15354
Authority	WILLIAMS ALISA	COVID, Diabetes	Notified By: GP	14403
Authority	GRAY BRAD	BPCO	Area: Milan Cohort South East	16922
Authority	MORRISON LUCAS	COVID, Diabetes	Care giver: Dr. Steve Chen	13704
Authority	THOMAS CHERIEV	COVID, Diabetes	Profession: Pharmacist	18768
Authority	JONES MAYA	COVID, Diabetes	Protocol: AZD1222: AstraZeneca - Half dose	19772
Authority	MANZ ANN	BPCO	Protocol: BNT162b2: Pfizer a BioNTech	10053
Authority	HUNT EDDY	Diabetes	Protocol: AZD1222: AstraZeneca - Half dose	10421
Authority	DOUGLAS MILLEY	COVID, Diabetes	Protocol: AZD1222: AstraZeneca - Full dose	16825
Authority	MORRISON WILLIAM	BPCO		17869
Authority	HAWKINS ADRIANNA	COVID, Diabetes		16925
Authority	BENNETT JESSICA	COVID, Diabetes		16808
Authority	HARPER KATE	COVID, Diabetes	01/05/1980	10520
Authority	FOSTER EMMA	COVID, Diabetes	09/03/1989	11790
Authority	ROSS CHARLOTTE	Diabetes	16/11/1933	18714
Authority	LLOYD VIOLET	COVID, Diabetes	19/09/1952	15358
Authority	DE LORENT MARIO	COVID, Diabetes	30/06/1946	10892
Authority	JUKA MATILDE	COVID, Diabetes	10/03/1991	10899
Authority	...	...	...	...

Select patients and citizens using criteria based on demographic data, profession pathology and defines a treatment protocol

# Co4C: Treatment Protocol



Patient: TESTBAR TESTBAR (AGE: 40.5) | Internal Case ID: 1384 DATA: 12/1/2020 | Created by: OPERATOR | Michael Taylor

Individual Vaccination Plan | Reported Information

Applied Protocol: AstraZeneca Full Dose Protocol - Diabetic patient

Treatment Protocol

Code	Description	Suggested Timing	Assigned Timing	Status
DIA1	FULL DOSE (1st)	T0	T0	●
DIA2	FEEDBACK REPORT	T0 + 24H	T0 + 24H	●
DIA3	BLOOD GLUCOSE MONITORING	T0 + 24h	T0 + 24h	●
DIA4	DIABETOLOGICAL VIRTUAL VISIT	T0 + 24h	T0 + 24h	●
DIA5	FULL DOSE (2nd) - T1	T0 + 14days	T0 + 14days	●
DIA6	FEEDBACK REPORT	T1 + 24h	T1 + 48h	●
DIA7	BLOOD GLUCOSE MONITORING	T1 + 24h	T1 + 24h	●

+ Add service | Edit | Send to Planner



#TOGETHER4SUCCESS



# Planning: book vaccinations



**C19** Patient Enrollment System  
**Patient-provider association**

Dashboard > Clusters > Milan cohort south east > AZD1222:AstraZeneca - Half dose > Patients enrolling

### 7 Patients

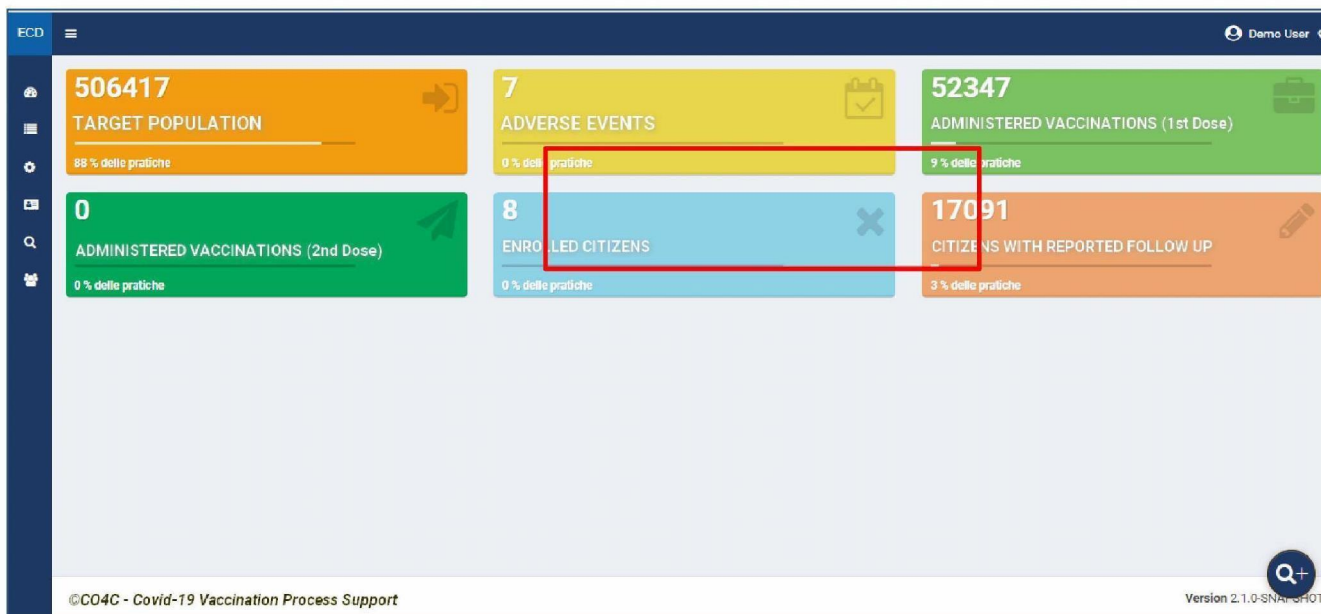
Sort By: Name

Name	Age	Area	Profession
Daniele Siciliano Conditions: Diabete	48 years old 24/11/1972	Milan cohort south east	Pharmacist
James Ford Conditions: Diabete	51 years old 26/05/1967	Milan cohort south east	Pharmacist
Roberta Lupoli Conditions: Diabete	33 years old 26/05/1985	Milan cohort south east	Pharmacist
Thomas Brody Conditions: Diabete	38 years old 26/05/1979	Milan cohort south east	Pharmacist
Brandon Lee Conditions: Diabete	34 years old 26/05/1984	Milan cohort south east	Pharmacist
Carl Potter Conditions: Diabete	59 years old 26/05/1963	Milan cohort south east	Pharmacist
Rita Fusilli Conditions: Diabete	58 years old 04/10/1964	Milan cohort south east	Pharmacist

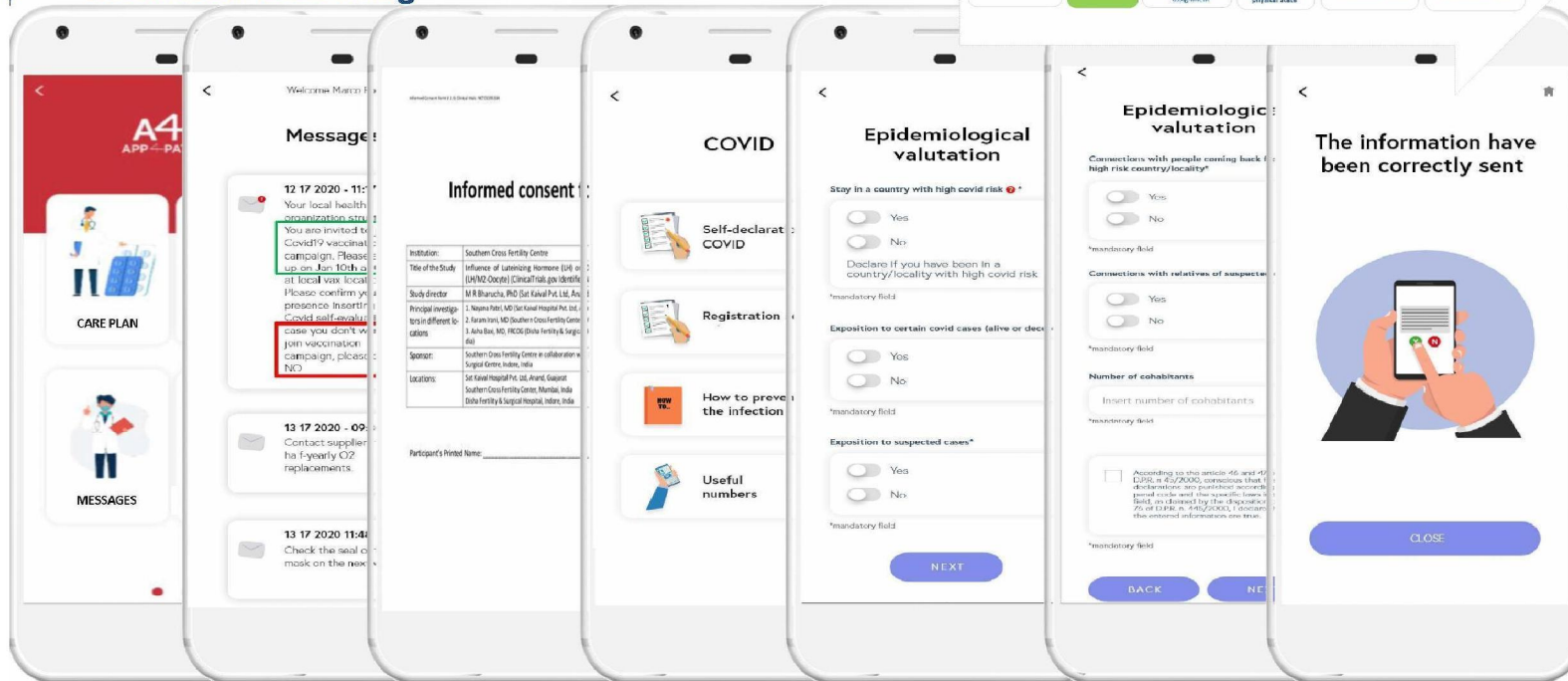
### 4 Providers

Provider	Available Daily Doses	Available Total Doses
PROVIDER 1 Milan cohort south east AZD1222:AstraZeneca - Half dose	24/24 AVAILABLE DAILY DOSES	129/512 AVAILABLE TOTAL DOSES
PROVIDER 2 Milan cohort south east AZD1222:AstraZeneca - Half dose	5/32 AVAILABLE DAILY DOSES	29/312 AVAILABLE TOTAL DOSES
PROVIDER 3 Milan cohort south east AZD1222:AstraZeneca - Half dose	8/24 AVAILABLE DAILY DOSES	329/512 AVAILABLE TOTAL DOSES
PROVIDER 4 Milan cohort south east AZD1222:AstraZeneca - Half dose	24/24 AVAILABLE DAILY DOSES	129/512 AVAILABLE TOTAL DOSES

# Co4C: Cluster 1: patients enrolled



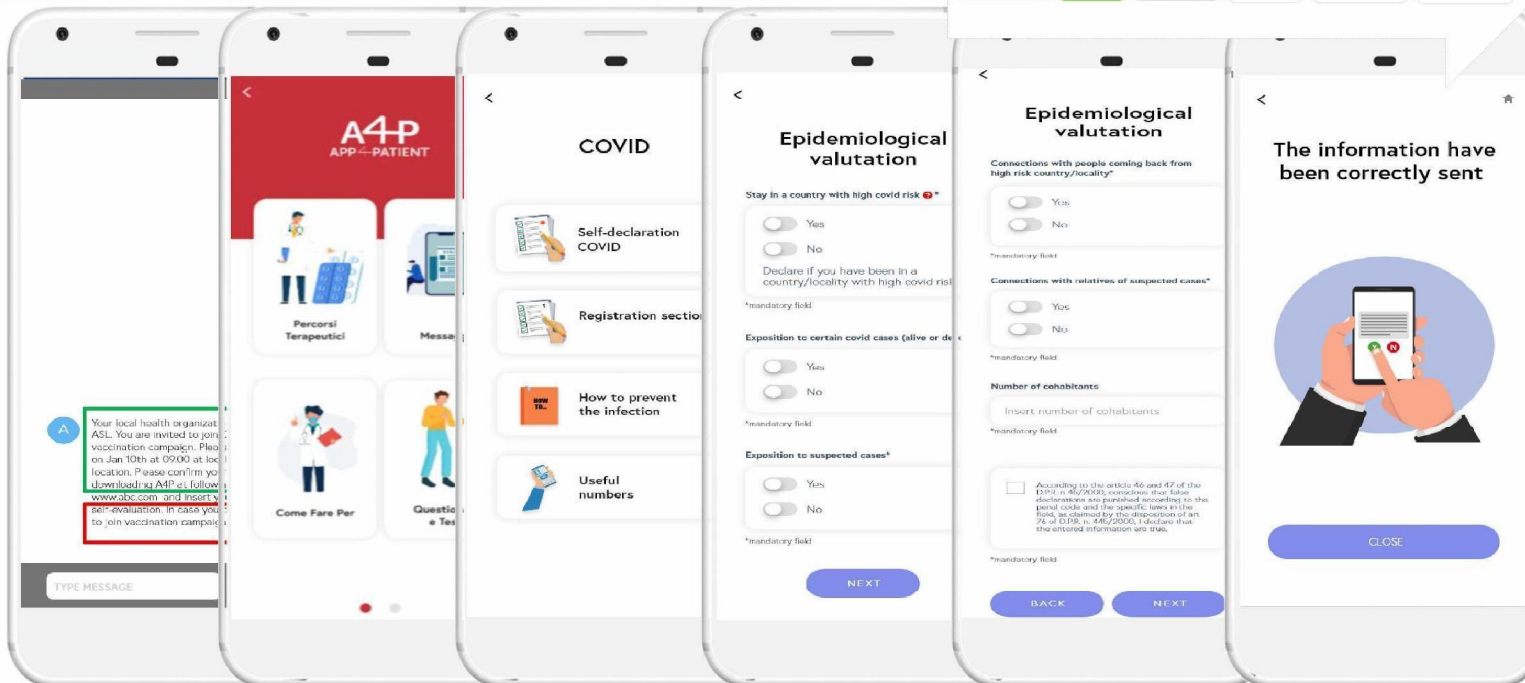
## A4P Multichannel Platform Invitation Receiving



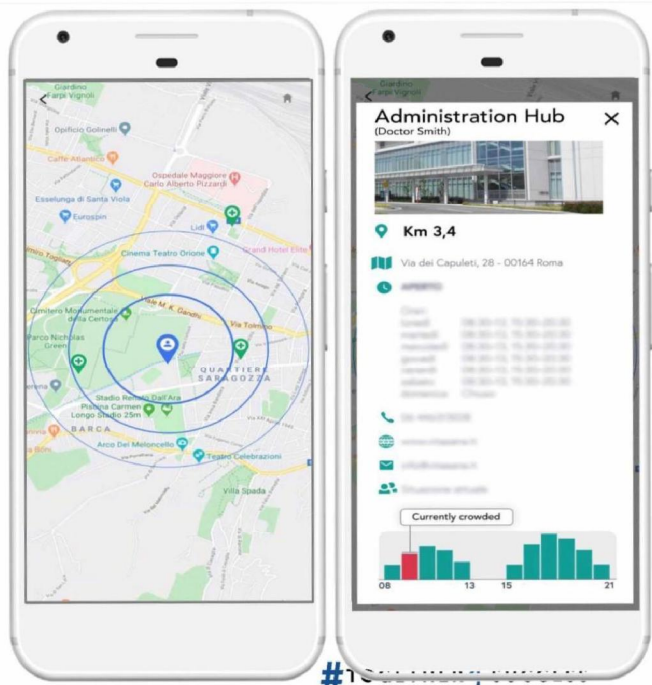
#TOGETHER4SUCCESS



## A4P Multichannel Platform SMS received for invitation



## A4P Multichannel Platform Localizing Administration Hub



#TELECOMUNICAZIONI



# Co4C: Check in for the first Dose



ECD
Derro User

<p style="font-size: 24px; font-weight: bold;">506417</p> <p>TARGET POPULATION</p> <p style="font-size: 12px;">88 % delle pratiche</p>	<p style="font-size: 24px; font-weight: bold;">7</p> <p>ADVERSE EVENTS</p> <p style="font-size: 12px;">0 % delle pratiche</p>	<p style="font-size: 24px; font-weight: bold;">52347</p> <p>ADMINISTERED VACCINATIONS (1st Dose)</p> <p style="font-size: 12px;">9 % delle pratiche</p>
<p style="font-size: 24px; font-weight: bold;">0</p> <p>ADMINISTERED VACCINATIONS (2nd Dose)</p> <p style="font-size: 12px;">0 % delle pratiche</p>	<p style="font-size: 24px; font-weight: bold;">8</p> <p>ENROLLED CITIZENS</p> <p style="font-size: 12px;">0 % delle pratiche</p>	<p style="font-size: 24px; font-weight: bold;">17091</p> <p>CITIZENS WITH REPORTED FOLLOW UP</p> <p style="font-size: 12px;">3 % delle pratiche</p>

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Version 2.1.0-SNAPSHOT

## Co4C Worklist

Every Vaccination Point has its own agenda, that can be filtered by Month, Week, Day

The list displays information about Demographics, Vaccination, Contacts.

**After having prepared the dose will be used for every patient, the operator can check the correct pairing patient-dose**

**National level**  
Epidemiology analysis and pre-allocation in time-type clusters

**Regional level**  
Scheduling of activities by cluster

**Regional level**  
Vaccination Management of and monitoring criteria assignment

**Regional level**  
Clinical monitoring of tests, vital signs, physical state

**National/regional level**  
Faculation of recall and / or interruption for single patient or sub cluster

**National / Regional level**  
Business intelligence Monitoring of side effects, status/progress

DEMO VACCINATION CENTER

< > Today

Month Weekly Agenda Daily Agenda Monthly List Weekly List Daily List

November 30, 2020

Monday

- JOHN DOE - Male, Age 71 || mobile Phone 333 2345678 || First Dose AZD1222: AstraZeneca || Test Boulevard, 75000 Paris
- SUSAN MARPLE - Female, Age 65 || mobile Phone 555 2345678 || First Dose AZD1222: AstraZeneca || Demo Square, 75000 Paris

DEMO VACCINATION CENTER

< > Today

Month Weekly Agenda Daily Agenda Monthly List Weekly List Daily List

November 30, 2020

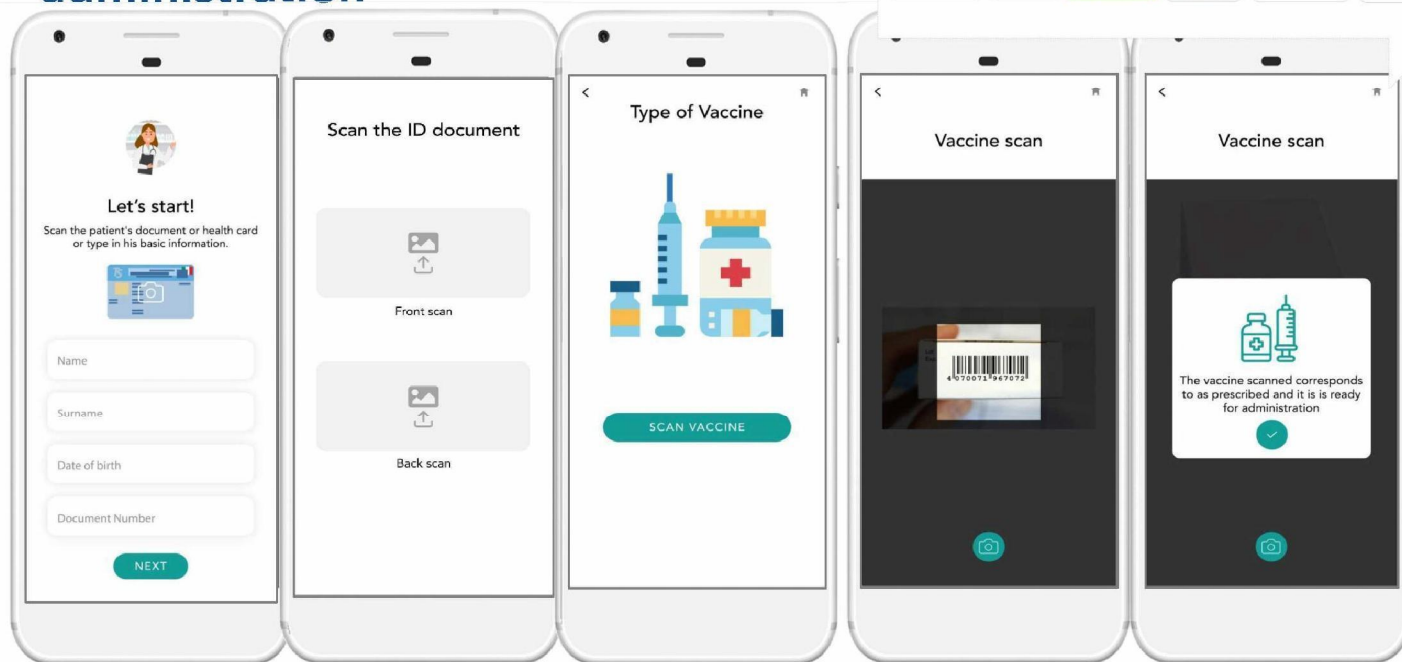
Monday

JOHN DOE  
Male  
Age 71  
Mobile Phone 333 2345678  
First Dose AZD1222: AstraZeneca  
Test Boulevard, 75000 Paris

SUSAN MARPLE  
Female  
Age 65  
Mobile Phone 555 2345678  
First Dose AZD1222: AstraZeneca  
Demo Square, 75000 Paris



## Via A4H: dose scanning and administration



# C4H: Stock administration

**COVID 19 Vaccine BNT162b1**

<b>Stock</b>	24 Doses
<b>LOT</b>	12644759301
<b>Expiry Date</b>	14/01/2028
<b>Supplier</b>	Pfizer Limited
<b>Maintenance</b>	Preserve in fridge at -80 -60 degrees

**Information**

No grade 1 or greater change in routine clinical laboratory values or laboratory abnormalities were observed for most participants after either of the BNT162b1 vaccinations. Of those with laboratory changes, the largest changes were decreases in the lymphocyte count after the first dose in 8.3% (1 out of 12), 43.8% (5 out of 11) and 50.0% (4 out of 8) of participants who received 10 µg, 30 µg and 100 µg BNT162b1, respectively. One participant each in the 10 µg (0.8% (1 out of 12)) and 30 µg (9.1% (1 out of 11)) groups and 4 participants in the 100 µg group (50.0% (4 out of 8)) had grade 3 decreases in the lymphocyte count. These decreases in lymphocyte count after the first dose were transient and returned to normal.

In addition, grade 2 neutropenia was observed in 1 participant each in the 10 µg and 30 µg groups.

**COVID 19 Vaccine BNT162b1**

<b>Stock</b>	23 Doses
<b>LOT</b>	12644759301
<b>Expiry Date</b>	14/01/2028
<b>Supplier</b>	Pfizer Limited
<b>Maintenance</b>	Preserve in fridge at -80 -60 degrees

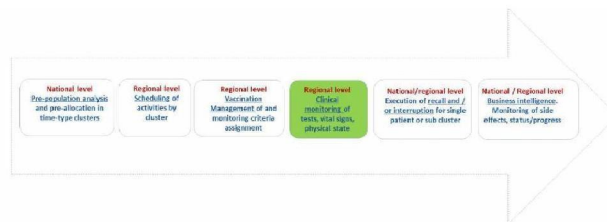
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In addition, grade 2 neutropenia was observed in 1 participant each in the 10 µg and 30 µg groups. These neutropenia values were transient and returned to normal. One participant in the 100 µg group had an abnormal result (neutropenia) that was reported to SPC. None of the other laboratory abnormalities observed were associated with clinical findings.

- National level**  
Efficacy analysis and pre-allocation in time-type clusters
- Regional level**  
Scheduling of activities by cluster
- Regional level**  
Allocation Management of and monitoring criteria assignment
- Regional level**  
Clinical monitoring of tests, vital signs, physical state
- National/regional level**  
Facilitation of recall and/or interruption for single patient or sub cluster
- National / Regional level**  
Business intelligence - Monitoring of side effects, status/progress

# Co4C: Follow up

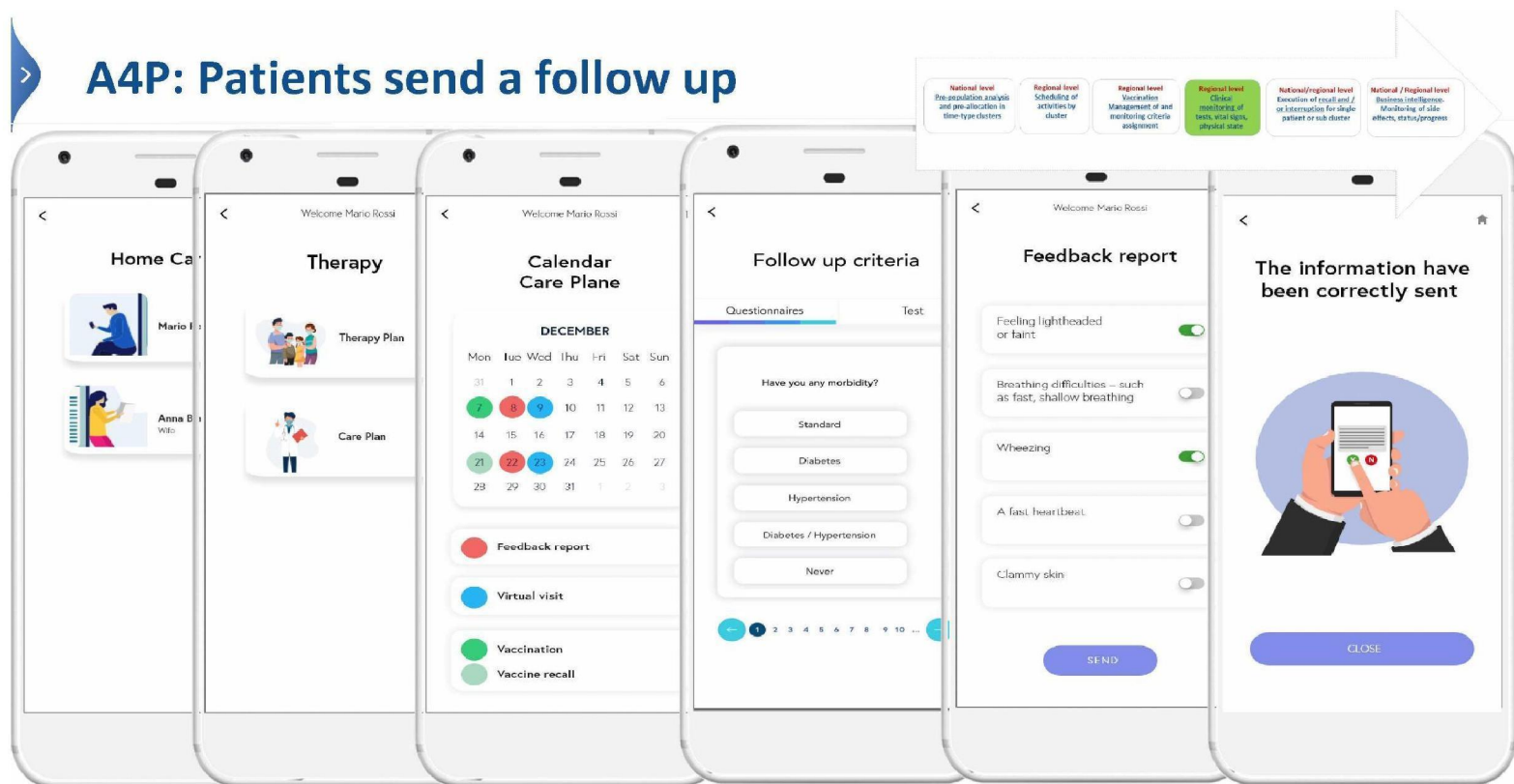


Metric	Value	% della pratica
TARGET POPULATION	506417	88 %
ADVERSE EVENTS	7	0 %
ADMINISTERED VACCINATIONS (1st Dose)	52347	9 %
ADMINISTERED VACCINATIONS (2nd Dose)	0	0 %
ENROLLED CITIZENS	8	0 %
CITIZENS WITH REPORTED FOLLOW UP	17091	3 %

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Version 2.1.0-SNAPSHOT

## A4P: Patients send a follow up



**National level**  
 Re-evaluation analysis and pre-allocation in time-type clusters

**Regional level**  
 Scheduling of activities by cluster

**Regional level**  
 Vaccination Management of and monitoring criteria assignment

**Regional level**  
 Clinics monitoring of tests, vital signs, physical state

**National/regional level**  
 Execution of recall and / or interventions for single patient or sub cluster

**National / Regional level**  
 Business intelligence: Monitoring of side effects, status/progress

# Co4C: Doctor reporting: self-evaluation patient answers



Patient Data

Id Patient	Name	Birth Date	Telephone Contact	Email	Zip Code
1524552	Prova Prova		35541256	5.1.2@prova.it	95030

Seriousness

- Death
- Life-threatening
- Hospitalization (initial or prolonged)
- Disability - significant, persistent, or permanent change
- Requires Intervention to prevent permanent impairment or damage

Treatment

- Use an adrenaline auto-injector if the person has one
- Call 999 for an ambulance immediately (even if they start to feel better)
- Lie the person down flat
- Give another injection after 5 to 15 minutes

Symptoms

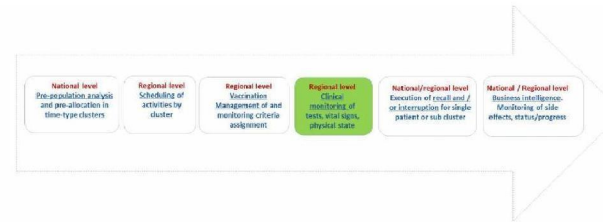
- Feeling lightheaded or faint
- Breathing difficulties - such as fast, shallow breathing
- Wheezing
- A fast heartbeat
- Clammy skin
- Confusion and anxiety
- Collapsing or losing consciousness

Reporting

Destination	Detail
<input type="text"/>	<input type="text"/>

... through patient self-evaluation

# Co4C: Doctor reporting can register adverse reactions



☑

Patient Data					
Id Patient	Name	Birth Date	Telephone Contact	Email	Zip Code
1524552	Prova Prova		35541256	prova@prova.it	05030

Seriousness	Treatment	Symptoms
<input type="checkbox"/> Death <input type="checkbox"/> Life-threatening <input type="checkbox"/> Hospitalization (initial or prolonged) <input type="checkbox"/> Disability – significant, persistent, or permanent change <input type="checkbox"/> Requires intervention to prevent permanent impairment or damage	<input type="checkbox"/> Use an adrenaline auto-injector if the person has one <input type="checkbox"/> Call 999 for an ambulance immediately (even if they start to feel better) <input type="checkbox"/> Lie the person down flat <input type="checkbox"/> Give another injection after 5 to 15 minutes	<input checked="" type="checkbox"/> Feeling lightheaded or faint <input type="checkbox"/> Breathing difficulties – such as fast, shallow breathing <input checked="" type="checkbox"/> Wheezing <input type="checkbox"/> A fast heartbeat <input type="checkbox"/> Itchy skin <input type="checkbox"/> Confusion and anxiety <input type="checkbox"/> Slipping or losing consciousness

Reporting	
Destination	Detail
<input type="text"/>	<input type="text"/>

Save

for example after tele-visit



# Co4C: Monitoring patient conditions



**Questionnaire**

Date	Title	View
2020-03-26	Self Assessment Questionnaire	View
2020-03-26	Fowler's Questionnaire	View
2020-03-29	Rare Disease Questionnaire	View

**Blood pressure**

Line graph showing Systolic pressure (mmHg) and Diastolic pressure (mmHg) over time from Mar 10 12AM to Mar 10 9PM. The y-axis ranges from 80 to 140 mmHg.

**EDD**

Datetime	Heart rate	QTc	QRS	QT
2020-03-09 04:15:42 pm	66 bpm	413 bpm	74 bpm	336 bpm
2020-03-09 04:22:29 pm	61 bpm	414 bpm	63 bpm	337 bpm
2020-03-09 02:26:51 pm	68 bpm	399 bpm	71 bpm	376 bpm
2020-03-09 01:41:12 pm	75 bpm*	404 bpm*	69 bpm*	362 bpm*

**SPD**

Datetime	Code	Value	Range	Interpretation
2020-03-10 12:18:12 pm	Saturazione dell'ossigeno (%)	91 %		
2020-03-10 12:18:15 pm	Indice di perfusione (PI)	2.2 PI		
2020-03-10 12:18:12 pm	Frequenza cardiaca da polso (bpm)	62 bpm		
2020-03-10 06:13:12 pm	Saturazione dell'ossigeno (%)	91 %		
2020-03-10 06:13:12 pm	Indice di perfusione (PI)	1.8 PI		

### Self Assessment Questionnaire

**COVID-19 MONITORING SYSTEM  
RESPIRATORY DISEASES EVALUATION QUESTIONNAIRE**

**GENERAL INFORMATION**  
 Date: 2020-03-20 Time: 12:40

**COMPILED BY (WHEN NOT COMPILED BY THE PATIENT)**  
 Family name: DOE First name: JOHN  
 Acting as: CHILD  
 Phone: +391204567890 Email: john.doe@domain.com

**PATIENT INFORMATION**  
 Family name: ANGELO First name: MARELLA  
 Tax code: BL8ML63MS3E2908 Gender: FEMMINA  
 Birth date: 1963-06-13 Birth place: IMPERIA  
 Living address: - City: - Country: -  
 Mobile: - Phone: -  
 Email: - Cohabitants: 4

**PATIENT EPIDEMIOLOGICAL PROFILE**

**RECENT STAY IN A RISK COUNTRY/AREA:**  Yes  No  Not known

**RISK LOCATION DEPARTURE DATE:** 2020-02-09

**EXPOSURE TO CONFIRMED CASES (living or deceased):**  Yes  No

**EXPOSURE TO SUSPECTED CASES (high probability cases):**  Yes  No

**CONTACTS WITH PEOPLE RETURNED FROM RISK COUNTRIES/AREAS:**  Yes  No

**CONTACT WITH RELATIVES OF SUSPECTED CASES:**  Yes  No



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> **Focus on: KPI to governance and  
campaign monitoring**

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# BI4H: Issues reported monitoring



**Dedalus BI4H** | Hello, Giulia

Home > Overview > Issues Reported > Questionnaires

### Issues tracking

- Fever after 2 days (4023 - 89.11%)
- Fatigue (2632 - 25.59%)
- Headache (1936 - 14.93%)
- Nausea (1241 - 12.06%)
- Stomach ache (854 - 8.30%)

#### Fatigue

0% 100%

#### Fever after 2 days

0% 100%

#### Headache

0% 100%

#### Nausea

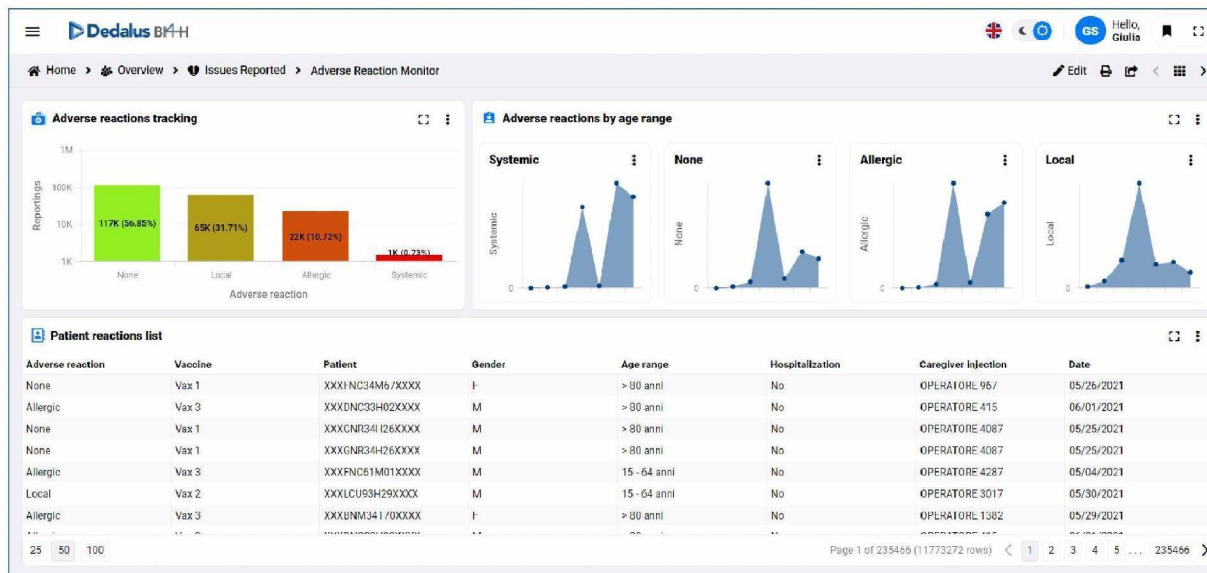
0% 100%

#### Stomach ache

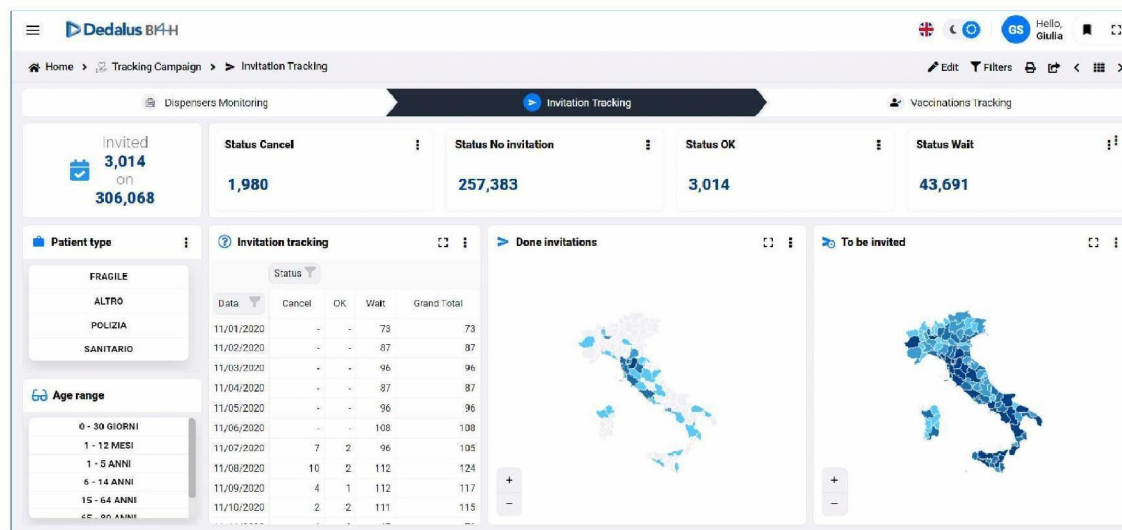
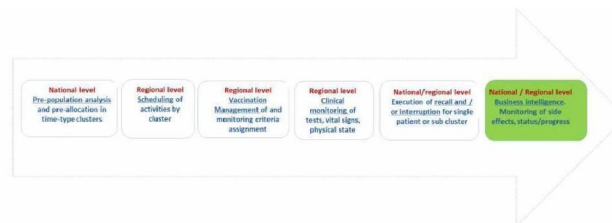
0% 100%

Vax	Injection date	Fiscal code	Surname	Age range	* Fatigue		* Fever after 2 days		* Headache		* Nausea		* Stomach ache	
					Yes	No	Yes	No	No	No	No	No		
Vax 1					2	7	69	1,488			7		7	7
Vax 2					-	-	1	12			-		-	-
	12/31/2020				-	-	-	1			-		-	-
		XXXFNC44P57XXXX			-	-	-	1			-		-	-
	12/31/2020		PAZIENTE 121024		-	-	-	1			-		-	-
		XXXFNC44P57XXXX	PAZIENTE 121024	65 - 80 anni	-	-	-	1			-		-	-
	03/06/2021				-	-	-	1			-		-	-
		XXXMRA30P08XXXX			-	-	-	1			-		-	-
	03/06/2021		PAZIENTE 265910		-	-	-	1			-		-	-

# BI4H: Adverse reaction monitor



# BI4H: Vaccination campaign progress - invitations



# BI4H: Vaccination campaign progress - vaccinations



**Dedalus BI4H**
6S Hello, Giulia

Home > Tracking Campaign > Vaccinations Tracking
Edit Filters

Dispensers Monitoring
Invitation Tracking
Vaccinations Tracking

### Injection tracking

Date Hour

Done  
**1,912**  
on accepted invitations  
**3,014**

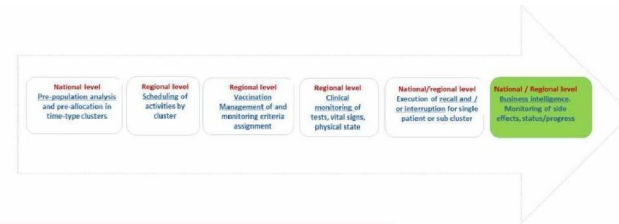
See patients list

### Injections by dispenser

Injection Date, Erogatore	Vaccinated patients	1° round	2° round	See details
01/01/2021	52	52	0	🔍
EROG ABC	52	52	0	🔍
01/02/2021	52	0	52	🔍
EROG ABC	52	0	52	🔍
01/03/2021	156	52	104	🔍
EROG ABC	156	52	104	🔍
01/04/2021	104	104	0	🔍
EROG ABC	104	104	0	🔍
01/05/2021	104	52	52	🔍
EROG ABC	104	52	52	🔍

Page 1 of 111 (2208 rows) < 1 2 3 4 5 ... 111 >

# BI4H: Monitor distribution and stocks of doses



**Dedalus BI4H** | Hello, Giulia

Home > Tracking Campaign > Dispensers Monitoring

### Distribution of dispensers on the territory

### Vaccines available (not booked)

Dispenser	Vax 1	Vax 2	Vax 3	Vax 4
Dispenser 27RNO	-	-	17	-
Dispenser 20AD	-	8	15	-
Dispenser 22AP	-	8	16	-
Dispenser 23AN	-	8	16	-

Vax 1	Vax 2	Vax 3	Vax 4
107	31	78	82

### Distribution of dispensers on the territory

Dispenser	Percentage
Dispenser 24SP	32 - 10.74%
Dispenser 11RE	27 - 9.06%
Dispenser 21MA	52 - 10.74%
Dispenser 2000	30 - 10.07%
Dispenser 2900	35 - 11.74%
Dispenser 27RNO	17 - 5.70%
Dispenser 20AD	22 - 7.72%
Dispenser 22AP	24 - 8.05%
Dispenser 24AD	24 - 8.05%
Dispenser 19ALE	21 - 7.05%
Dispenser 1505	- 0.00%
Dispenser 1504	- 0.00%
Dispenser 16EL	- 0.00%
Dispenser 17EL	- 0.00%
Dispenser 230RE	- 0.00%
Dispenser 12AN	- 0.00%
Dispenser 25AL	33 - 11.07%

### Vaccines available (not booked)