

In the North of Italy,
in the heart of Europe



Innovation in eHealth

The Digital Information Hub

“Open HoCARE 2.0” transregional public Conference
21st October 2020

Livio De Nardi

ARIA: Who we are

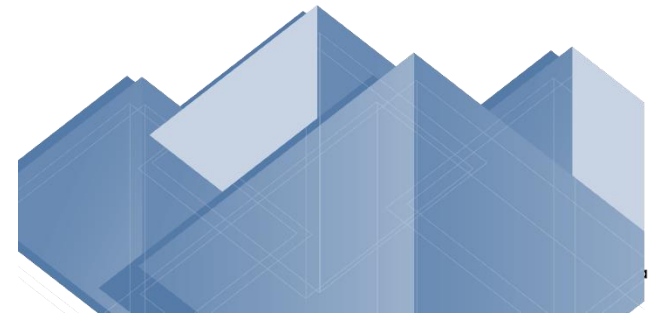
ARIA S.p.A. (Innovation and Procurement Regional Company) is a publicly owned service company of the Lombardy regional government.

The company manages and develops the information systems for the various departments of the institutions of the regional system. It builds solutions and services for digital-health, digital-government and e-procurement.

*Improving the quality of life
of **citizens**
and the competitiveness
of local businesses
through the use
of Information & Communication
Technology*

Aria S.p.A. supports the Lombardy Region for all activities related to:

- 🌱 consulting services and implementation of algorithms for data usage rules;
- 🌱 consulting services on business processes;
- 🌱 management of information assets of Lombardy Region.



What do we mean by innovation in eHealth?

Telemedicine

Big Data

Artificial intelligence

eProcurement

DATA

Electronic Health Record

Electronic Medical Record

New business and service models

How to use data as a system asset?

What data: Healthcare

8 Local Health Authorities

27 Territorial Public Healthcare Providers

26 private and public Scientific Recovery & Care Institutes

Over **300** public and private hospitals

Around **45.000** Specialized physicians

18,5 billion euros for healthcare expenditures

Lombardy Region consolidated balance and 40 annual reports of public enterprises (Departments of Health, Territorial Social/Welfare Enterprises, scientific recovery & care institutes) – around 4000 cost centers

Over 10 million Citizens

1,5 million hospitalizations yearly

4,2 million multichannel booking yearly

5,8 million automated booking

75,3 million pharmaceutical prescriptions yearly

Over **38 million** specialist prescriptions yearly

160 million outpatients treatment yearly

15 million reports consultations by patients and operators yearly

Over 2 million assisted patients subject to screening yearly

Over **100.000 operations** for the choice and revocation of GPs and family pediatricians

yearly 2 million registered vaccinations yearly

Around 85.000 childbirth certificates yearly

10 million Regional EHR

31 million clinical documents per year

Over 200.000 published PHPs

100.000 integrated homecare assistance cases

Around 300.000 prescriptions for prosthesis aids yearly

Around 1.000.000 provisions for celiac disease yearly

130.000 transactions each day

1,1 million transactions for gluten-free products yearly

What historical depth

Financial data since 2002

Consolidated for the Lombardy's social / welfare system since 2002

Management control since 2003

Public and private hospitals since 1999

Healthcare and public and private social / welfare services service points since 1999

Pharmacies and Pharmaceutical Prepays since 2007

Social / welfare operators since 2001

General practitioners since 1999

Specialized physicians since 2015

18 years of hospitalization

11 years of pharmaceutical performances

18 years of specialized performances

Specialized reports since 2008

Screening campaigns (since 2000)

Vaccination campaigns (since 1990)

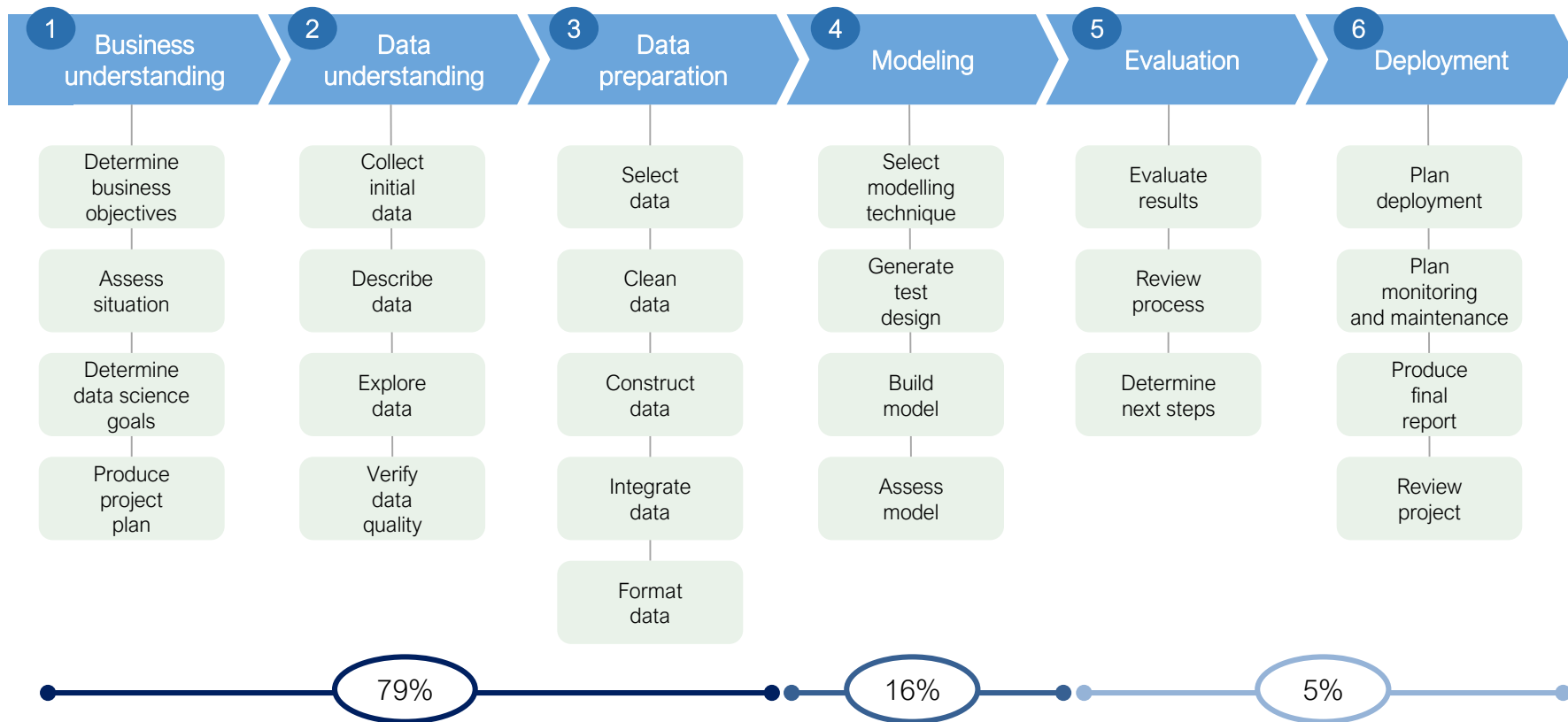
13 years of childbirth certificates

Prosthesis provisions (since 2010)

Provisions for celiac disease (since 2014)

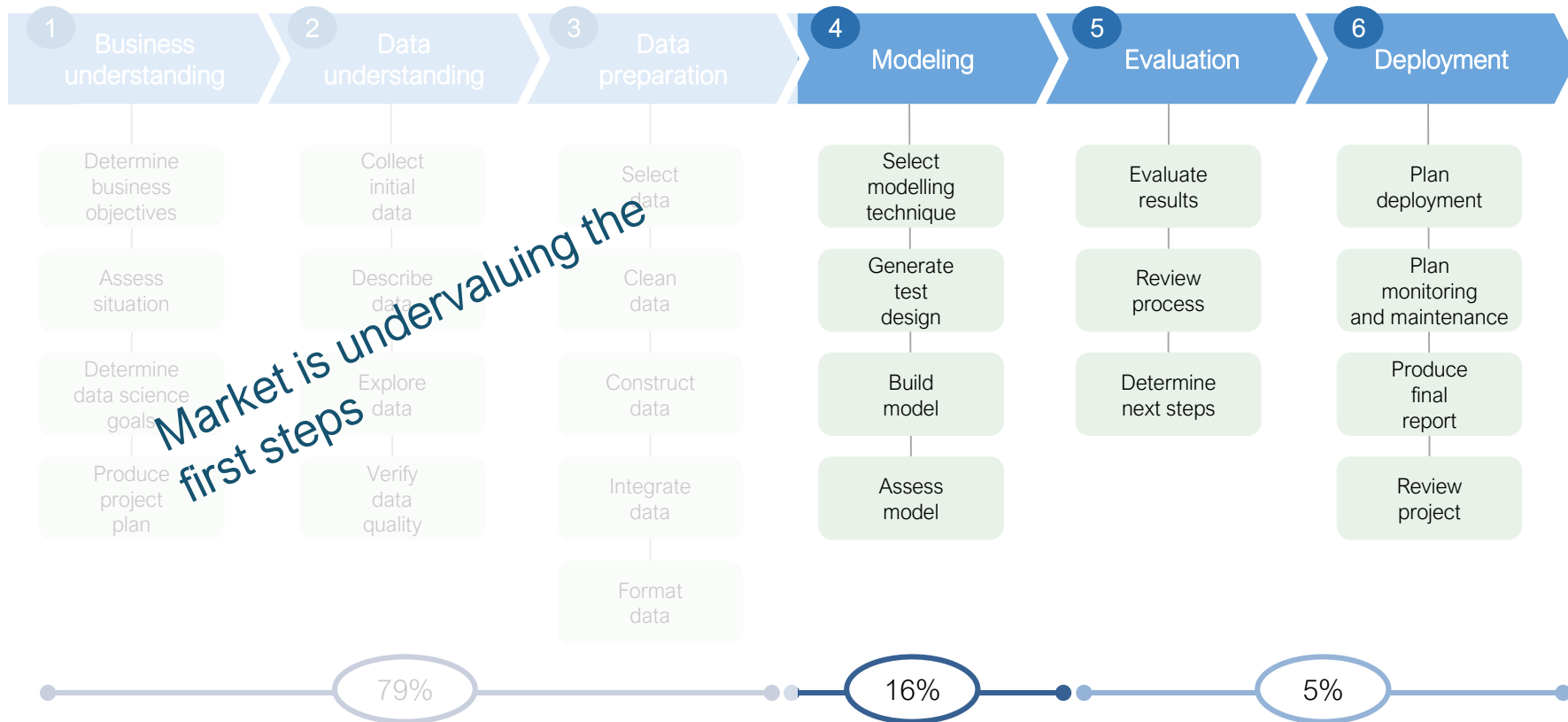
Integrated homecare assistance since 2011

Data-driven approach methodology: CRISP-DM stages and tasks

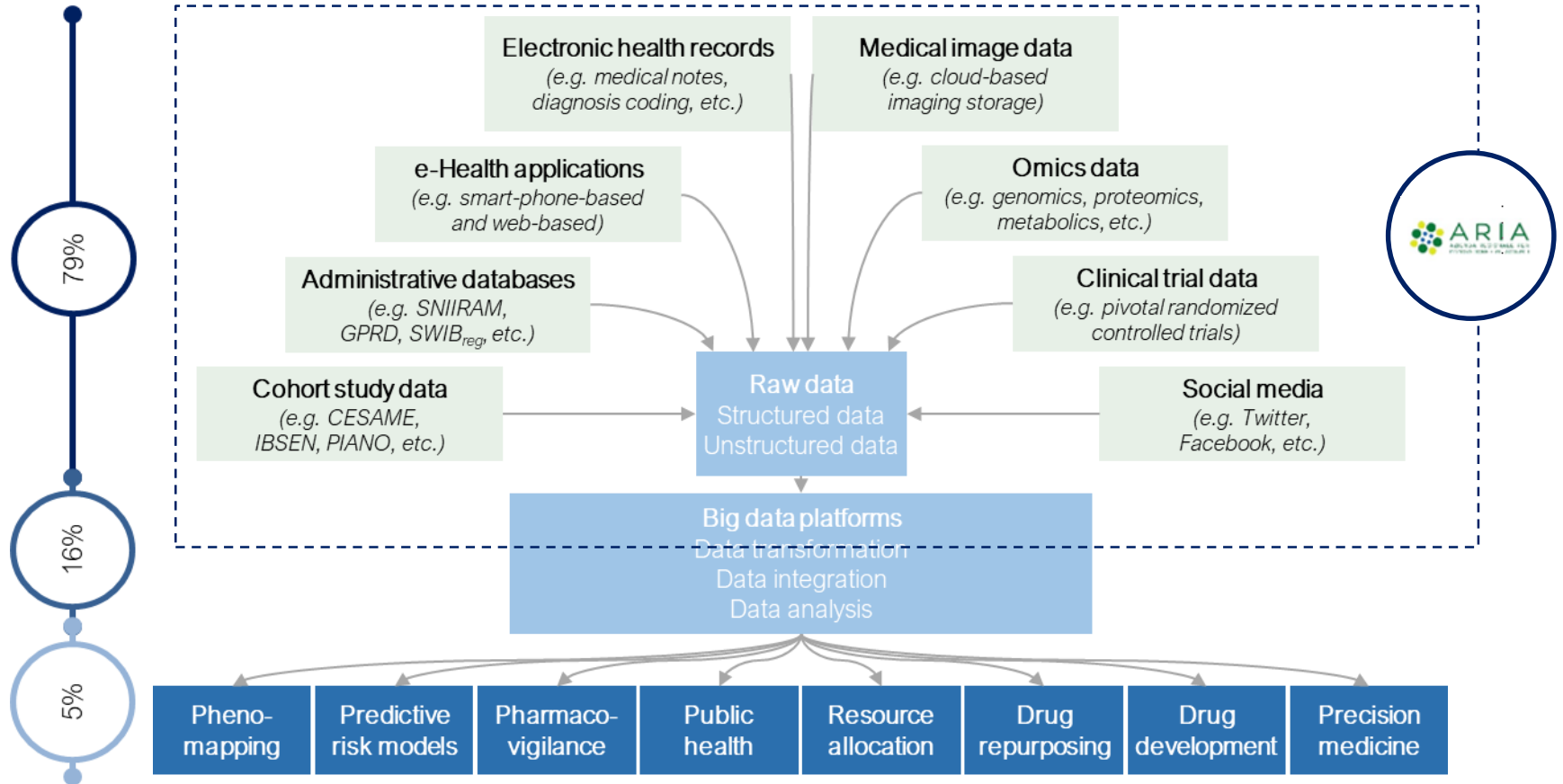


Source: Chapman, Clinton, Kerber, et al. 1999; CrowdFlower, 2016

Data-driven approach methodology: CRISP-DM stages and tasks



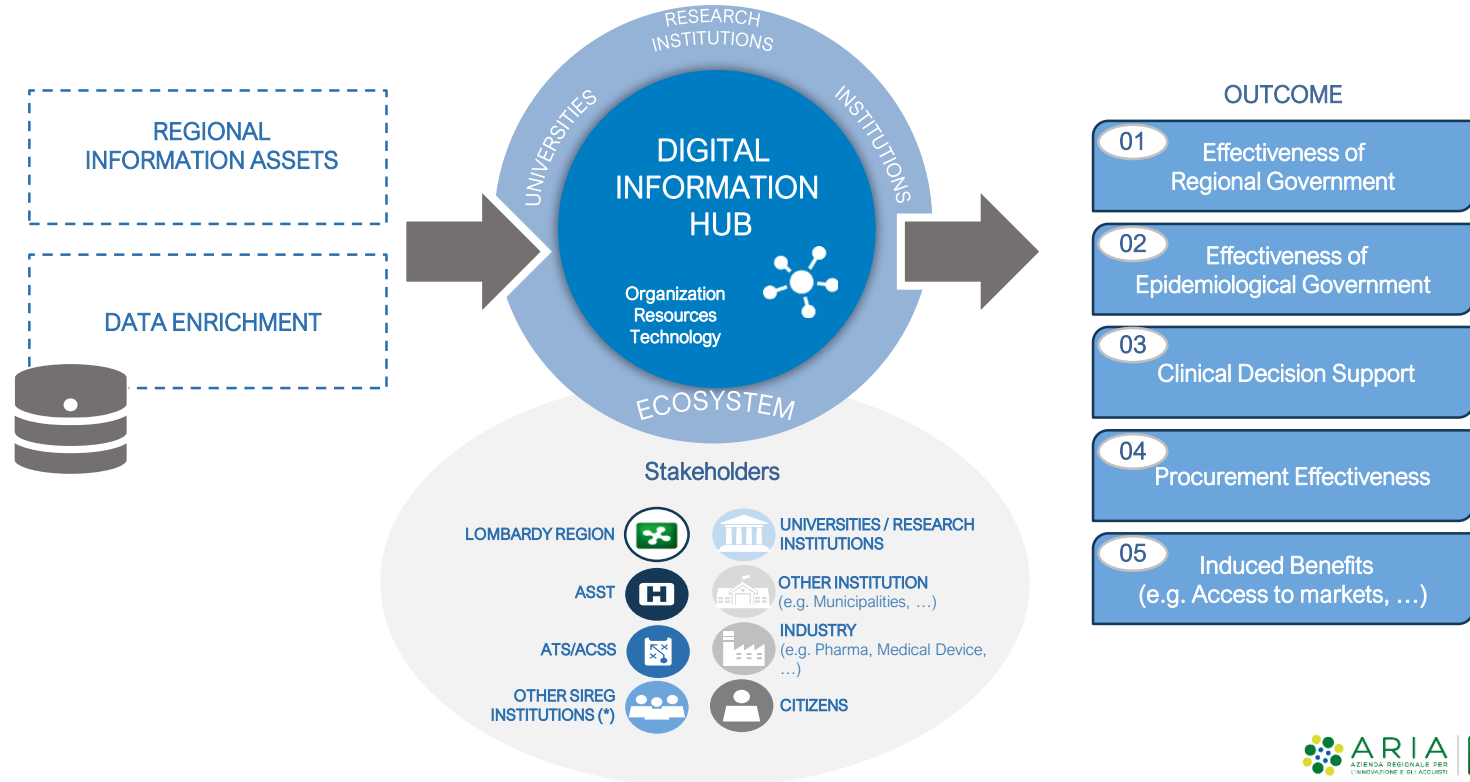
Health Data Science is a multidisciplinary activity



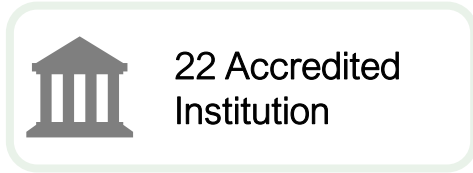
Source: Olivera P. et al. Big data in IBD: a look into the future. Nat Rev Gastroenterol Hepatol. 2019 Jan 18

«Digital Information Hub» (DIH)

The DIH is an **innovative technical-organizational model** that allows research bodies, Italian and international universities and regional system bodies to access regional information assets to carry out scientific research projects to support the objectives of the Region Lombardy.



The DIH's numbers

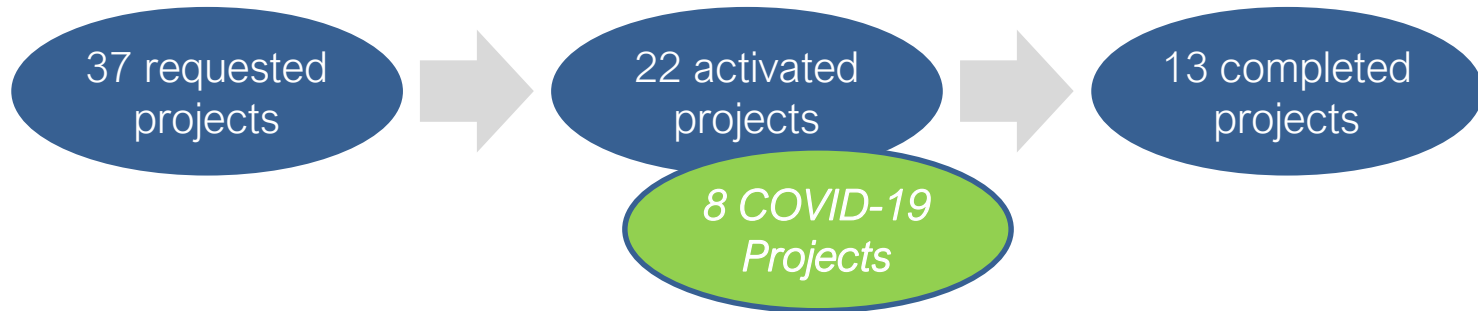


10 public/private IRCCS

9 public/private Universities

1 ASST

2 Regional Institution



Steps to access the DIH service and in particular for Covid-19

The following chart shows the steps of the process to access and use the service.

Stipulation of agreement

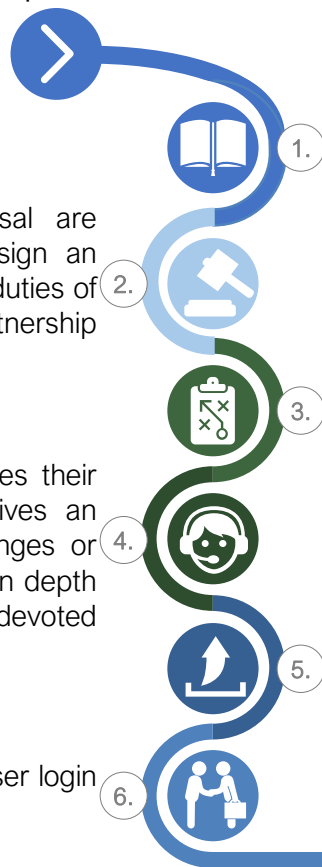
Once the accreditation and the project proposal are accepted, the institution and Lombardy Region sign an **Agreement** that states the aims of partnership, the duties of each sides involved and the duration of the partnership based on the needs of the project.

Service application and Assistance

When the environment is set up, the users receives their login information to access the service. ARIA gives an assistance service for support request (e.g.: changes or problems with login information, library installation, in depth data interpretation) through an email address and a devoted cell phone line (daas@ariaspa.it; +39 0239331729).

End of service

When the research is done, ARIA removes all the user login information and the filing and/or erasing of the data.



Accreditation and Project proposal

The interested institution, which wants to partner with the Lombardy Region free of charge, must present a **formal request of accreditation** to the General Director of the Lombardy Region by 31st December 2020. After acceptance, a **project proposal** will be examined by a **Commission**, composed of health professionals identified by the Crisis Unit.

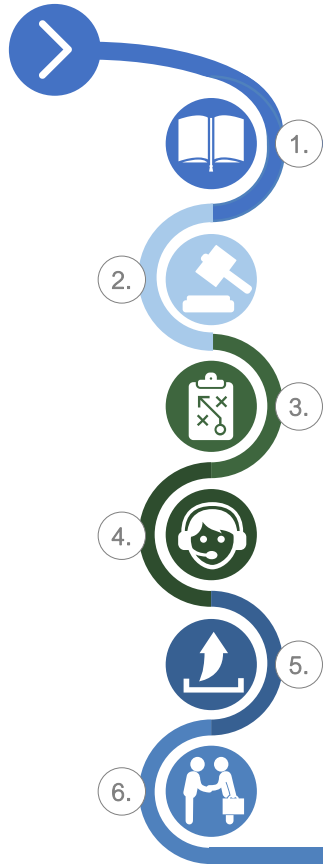
Environment Predisposition

After the agreement is signed, the environment will be set up (VM installation, software, upload of database, set up of user login information). The main characteristics are defined together by the institution and ARIA S.p.A. through the subscription of **operative DaaS KIT**.

Request and output validation

When the institution needs to make a midterm or final output, it fills out a **Declaration of elaboration of research output/ end of the research**. After the validation of this declaration, ARIA makes the outputs available to the legitimate owner.

Papers Step 1: Accreditation (1/2)



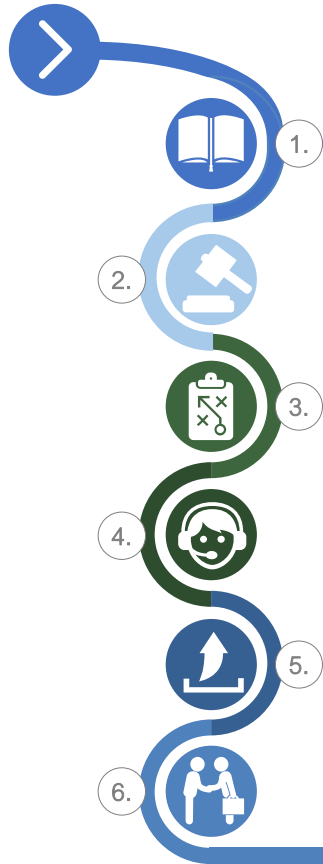
Accreditation Request

The accreditation request is sent by the institution to the General Director Welfare and it must contain:

- form compliant with the appendix A) of D.G.R n° X/4893 of 2016;
- Copy of ID of the legal representative;
- Documentation of the possession of the required qualifications;
- Publications.

Email address devoted to the request: welfare@pec.regione.lombardia.it

Papers Step 1: Project proposal (2/2)



Project proposal

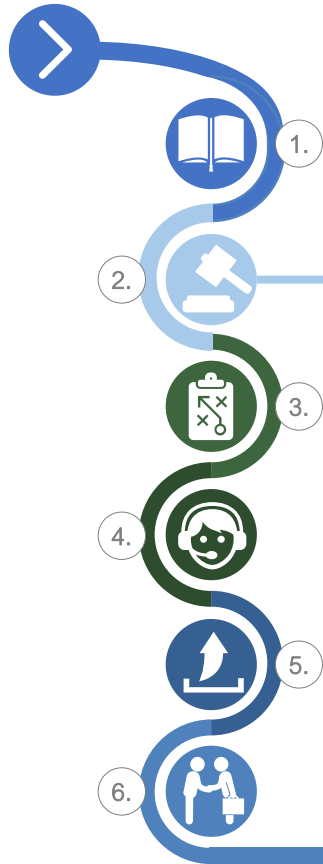
After the acceptance of the application for accreditation, the Institution sends the project proposal to the Welfare General Director and it must contain:

- Title, description and objectives;
- Project references;
- Thematic/Research area;
- Duration;
- Expertise of the research team.

The project proposal will be examined by a Commission, composed of health professionals identified by the Crisis Unit (Decreto no.4564 of Apr. 15, 2020)

Email address devoted to the request: welfare@pec.regione.lombardia.it

Papers Step 2: Agreement



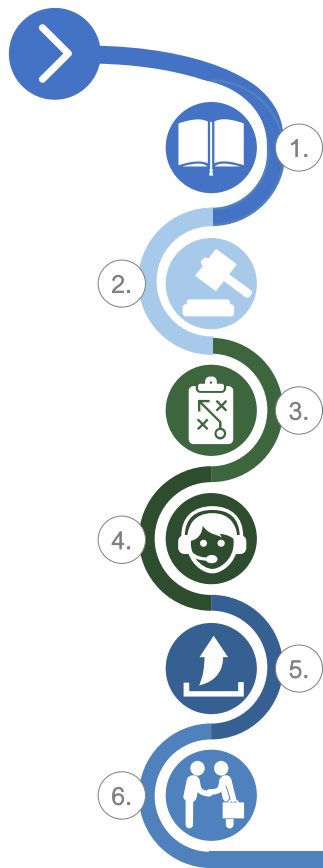
Agreement

The agreement states the aims of the partnership between the institution and Lombardy Region. It contains the description of the fields of interest, the data sets available, the duration and the duties of each sides involved.

Appendix:

1. Executive Project: description and main aims of the project;
2. Description of the project activities and work plan;
3. Appointment of personal Data Processor: choice of the Data processor and sub processors.
 - 3.1. List of treatments of personal data owned by Lombardy Region
 - 3.2. Lombardy Region Instructions on personal data processing;
4. Terms and general conditions of supply of DaaS service.

Papers Step 3: Environment Predisposition



Operative KIT DaaS

The document is necessary for the technical predisposition and beginning of the service .
Appendix:

1. A: Details on data extraction;
B: Details on data upload;
2. List of people involved in data elaboration;
3. Declaration of Responsibility of Privacy Principles;
4. List of specific techniques according to the kind of service offer (Basic, Project-Specific).

Step 4: Service Application and Assistance



Features of the service

- Data extraction in the regional information asset to fulfill the planning requirements;
- Application for consultation, analysis, elaboration and custom data presentation based on the user needs;
- Access from remote through a safe, separated, scalable, virtual environment;
- Room available for data analysis and sharing of results;
- Assistance service: technical support in the configuration/activation of the service and operative assistance during the application.

Contacts : daas@ariaspa.it; +39 0239331729



ARIA
AZIENDA REGIONALE PER
L'INNOVAZIONE E GLI ACQUISTI



**Regione
Lombardia**

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Lombardia**