EPTRI®
EUROPEAN PAEDIATRIC TRANSLATIONAL RESEARCH INFRASTRUCTURE

DIGITAL INNOVATION FOR DEVELOPMENTAL PSYCHOPATHOLOGY: THE EXPERIENCE OF Medea SmartLab

Dott.ssa Silvia Busti Ceccarelli, Psychologist, Psychotherapist
IRCCS E. Medea – Ass. La Nostra Famiglia

EPTRI 8th webinar - Digital Technologies for Children and Young People
05/11/2024

IRCCS EUGENIO MEDEA

LA NOSTRA FAMIGLIA
CURA RIABILITAZIONE E RICERCA DALLA PARTE DEI BAMBINI

Research and Rehabilitation Institute for Child Development

Medea SmartLab

Digital innovation lab for clinic and research
in Developmental Psychopathology

WEB PLATFORMS

win 4 asd

MedicalBIT

LA NOSTRA FAMIGLIA

WEB PLATFORMS

win 4 asd

Integrating a New Online Platform in Primary Care for Early Detection, Referral, and Intervention in Autism Spectrum Disorder: The First Italian Pivotal Project

by Paola Colombo *, Noemi Buo, Silvia Busti Ceccarelli and Massimo Molteni

Child Psychopathology Unit, Scientific Institute, IRCCS Eugenio Medea, Bosisio Parini, 23842 Lecco, Italy

* Author to whom correspondence should be addressed.

Brain Sci. **2022**, *12*(2), 256; **https://doi.org/10.3390/brainsci12020256**

MedicalBIT
LA NOSTRA FAMIGLIA

A Web Platform for Standardized Data Acquisition, Processing, and Export in the Child Psychopathology Clinical Routine (MedicalBIT): Design and Implementation Study

Paola Colombo, Silvia Busti Ceccarelli, Stefano Pacchiarini, Stefano Cribellati, Massimo Molteni

JMIR Form Res 2022 (Jul 11); 6(7):e36757

Download Citation: END BibTex RIS

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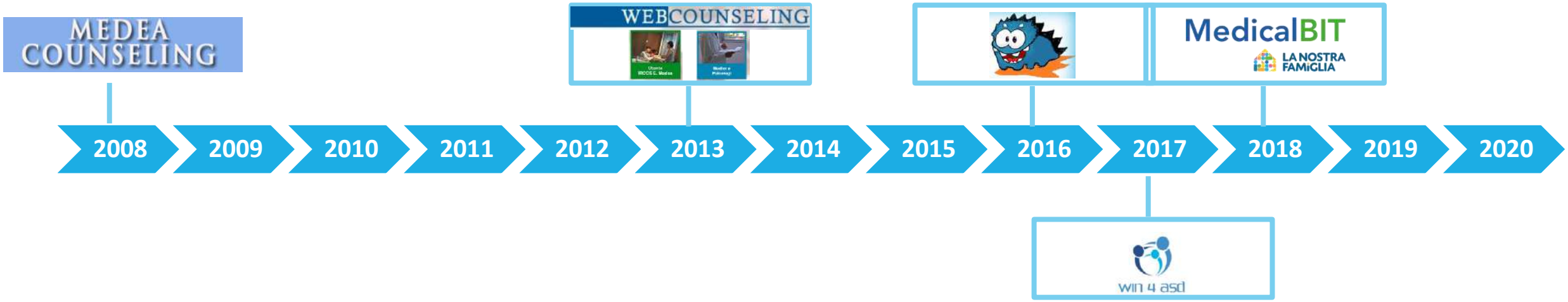
OUR HISTORY

EVOLUTION OF DIGITAL INNOVATION AT IRCCS MEDEA



OUR HISTORY

NATIONAL AND INTERNATIONAL COLLABORATIONS WITH OTHER DIGITAL PLATFORMS

ASEBA Achenbach System of Empirically Based Assessment

CBCL

questionnaire

King's College

DAWBA

interview

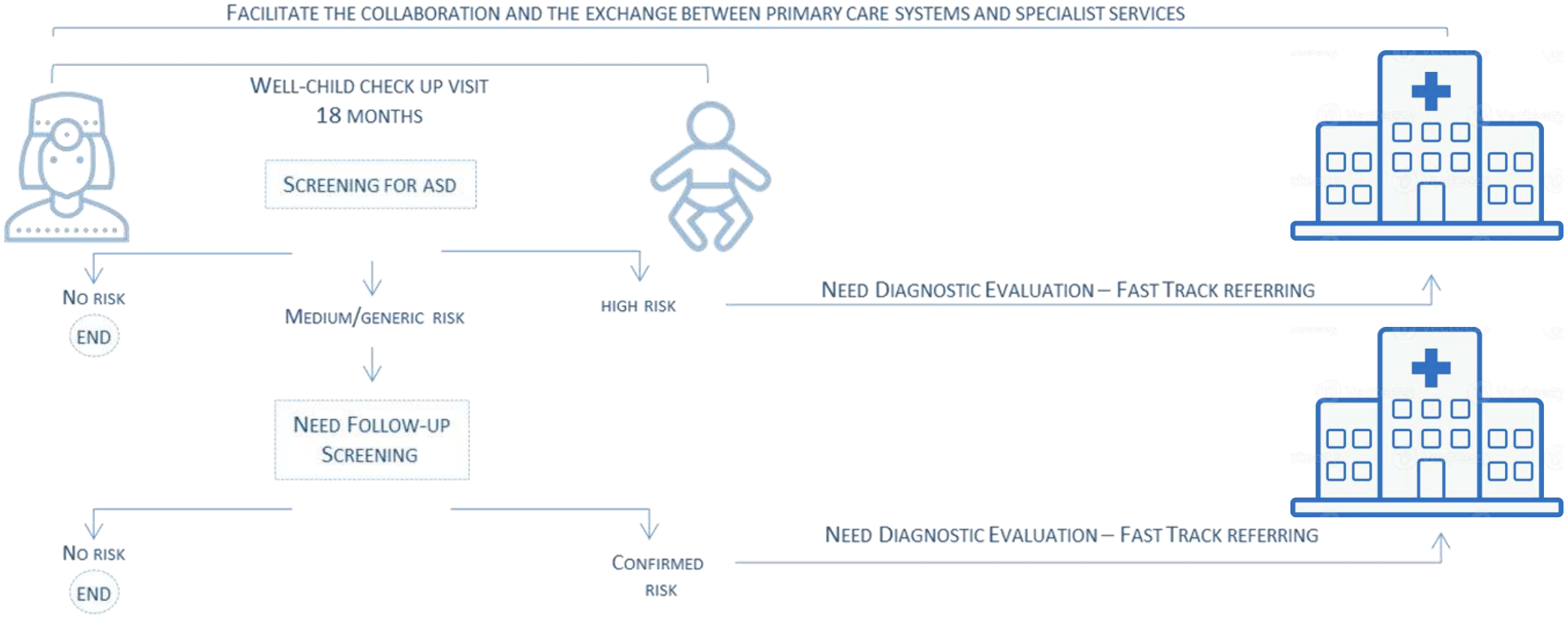
OssNA Osservatorio Nazionale Autismo

WEB ITALIAN NETWORK FOR AUTISM SPECTRUM DISORDER

Web Platform

To facilitate connection between **primary care services** and **child psychiatric services**

WEB PLATFORM WIN4ASD – WEB ITALIAN NETWORK FOR AUTISM SPECTRUM DISORDER



win 4 asd

CHAT

Checklist for Autism in Toddler

JOURNAL OF THE ROYAL SOCIETY OF MEDICINE Volume 93 October 2000

Early identification of autism by the CHecklist for Autism in Toddlers (CHAT)

Simon Baron-Cohen PhD Sally Wheelwright MSc Antony Cox FRCPsych[1] Gillian Baird FRCPCH[1]
Tony Charman PhD[2] John Swettenham PhD[3] Auriol Drew MA[1] Peter Doehring PhD[4]

J R Soc Med 2000;**93**:521–525

The CHecklist for Autism in Toddlers (CHAT) is a screening instrument that identifies children aged 18 months who are at risk for autism. This article explains how the CHAT was developed and how it should be used. First we offer a brief introduction to autism.

syndrome are present, together with a history of language delay (defined as not using single words by two years old or phrase speech by three years old).

EARLY DETECTION

Fast and simple screening tool:
(14 items, 10 minutes)

- ✓ Section A: **questions for parents**
- ✓ Section B: observational **items checked by pediatrician**

Integration of direct and indirect informations

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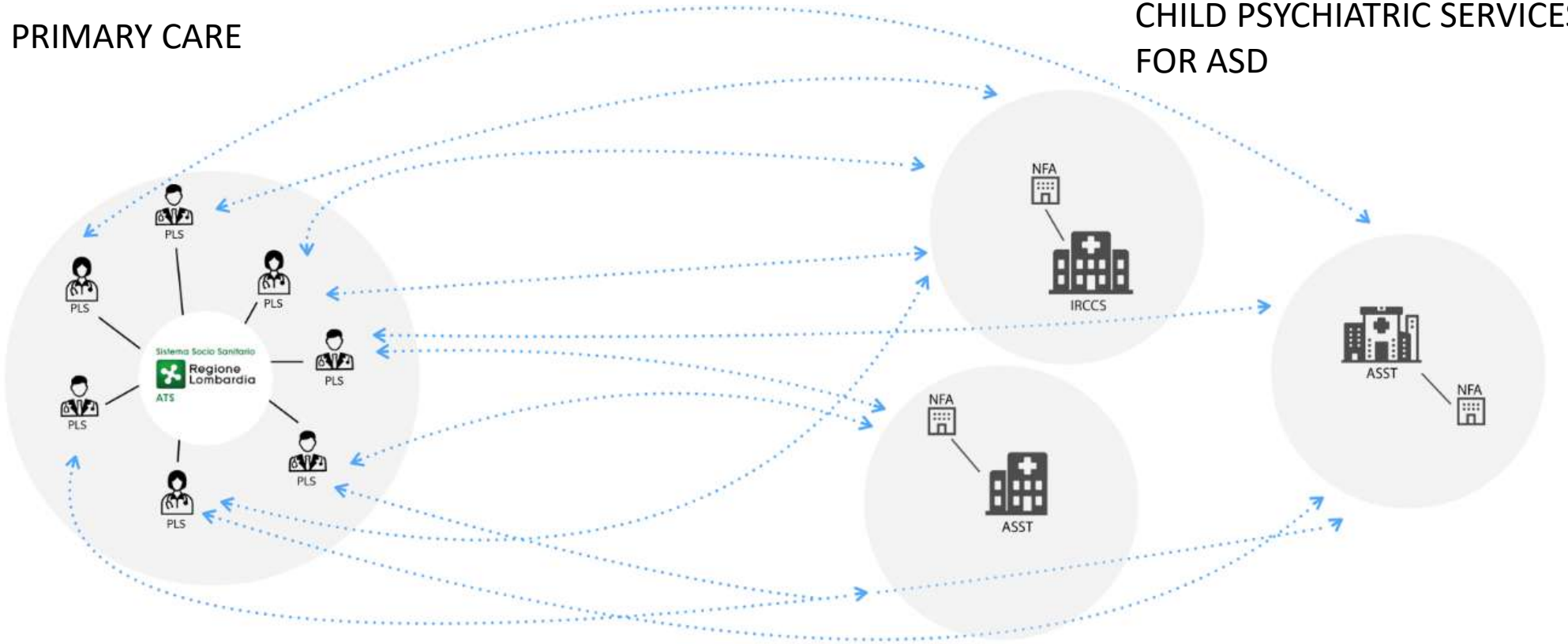
PRIMARY CARE

CHILD PSYCHIATRIC SERVICES FOR ASD



brain sciences

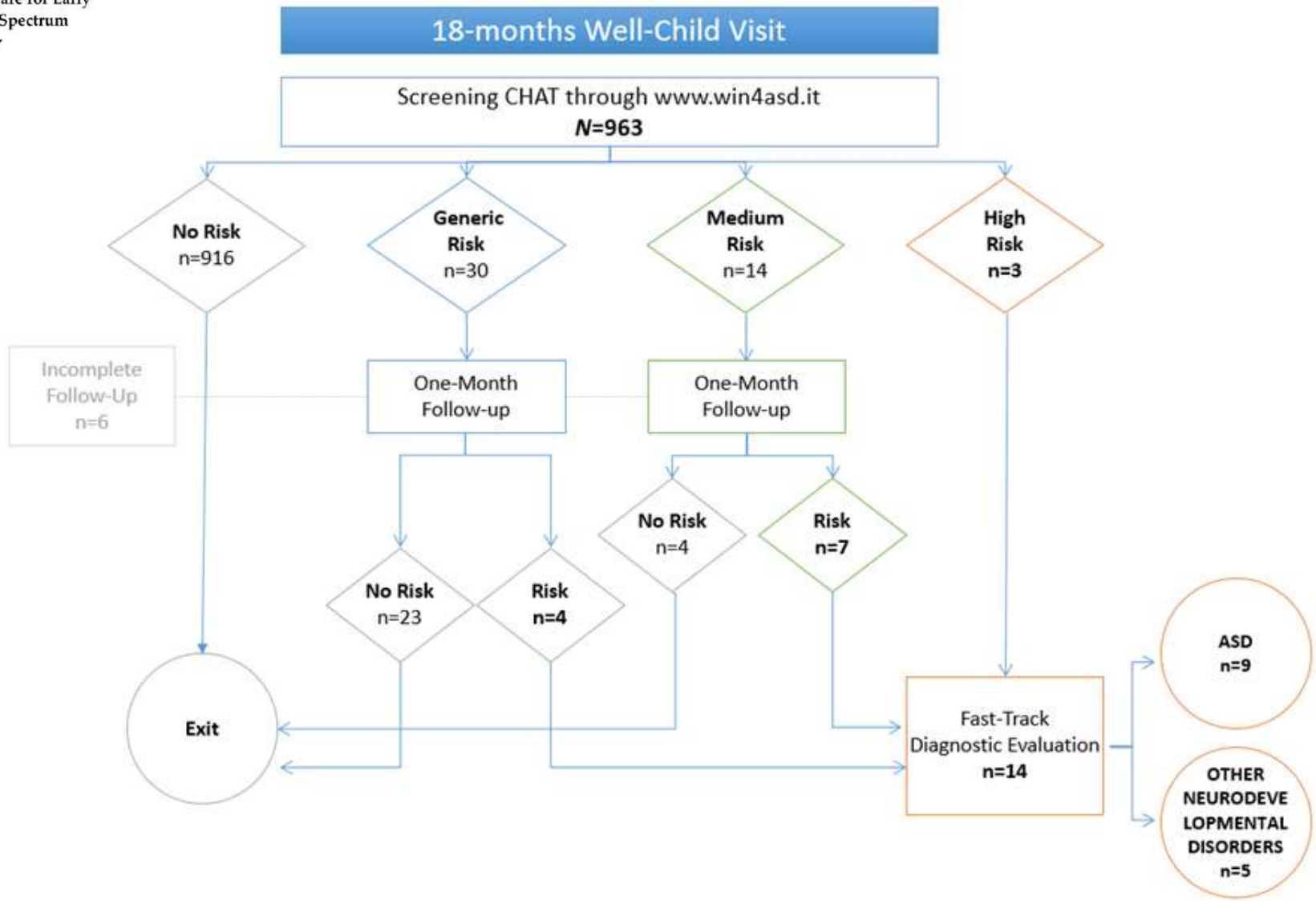
MDPI

Article

Integrating a New Online Platform in Primary Care for Early Detection, Referral, and Intervention in Autism Spectrum Disorder: The First Italian Pivotal Clinical Study

Paola Colombo *, Noemi Bun, Silvia Busti Ceccarelli and Massimo Molteni

win 4 asd



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DASHBOARD

PEDIATRI

ISCRITTI AL 14/10/2024	1.258
ATTIVI 11/01/2018 - 14/10/2024	902

PAZIENTI

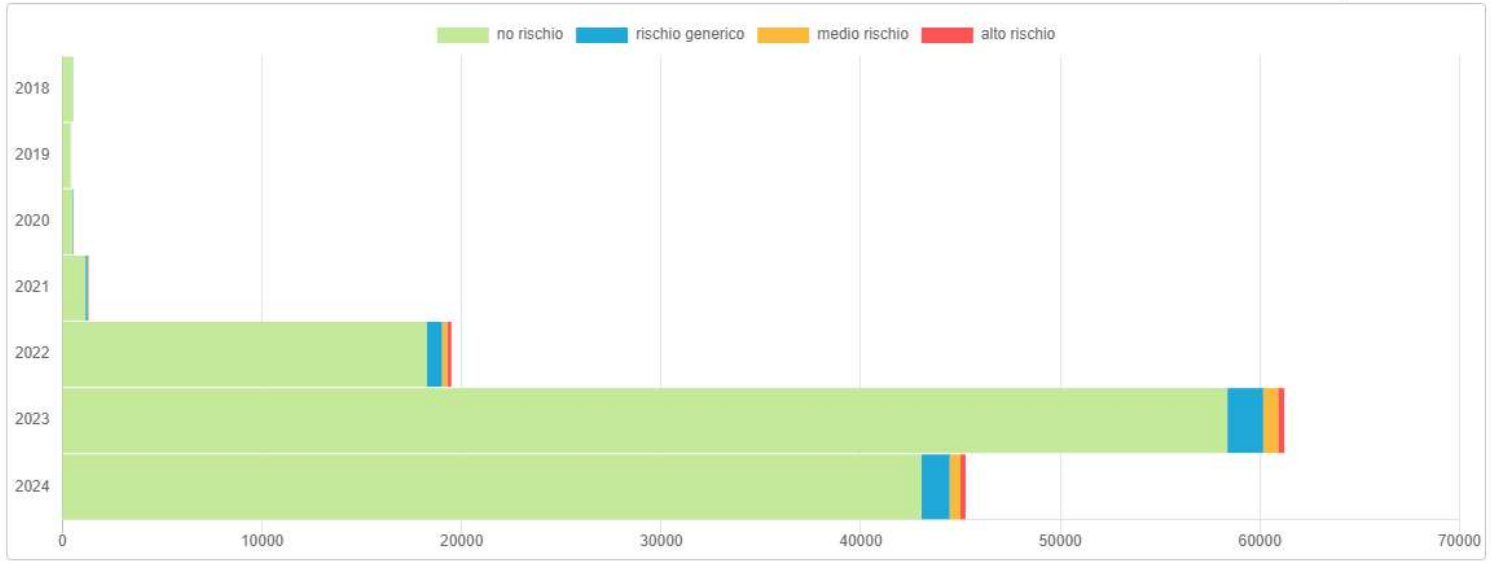
INSERITI 11/01/2018 - 14/10/2024	63.556
INVIATI 11/01/2018 - 14/10/2024	805

CHAT

ESEGUITE 11/01/2018 - 14/10/2024	64.405
NON A NORMA (5,1%)	3.290
di cui ALTO RISCHIO (0,6%)	409

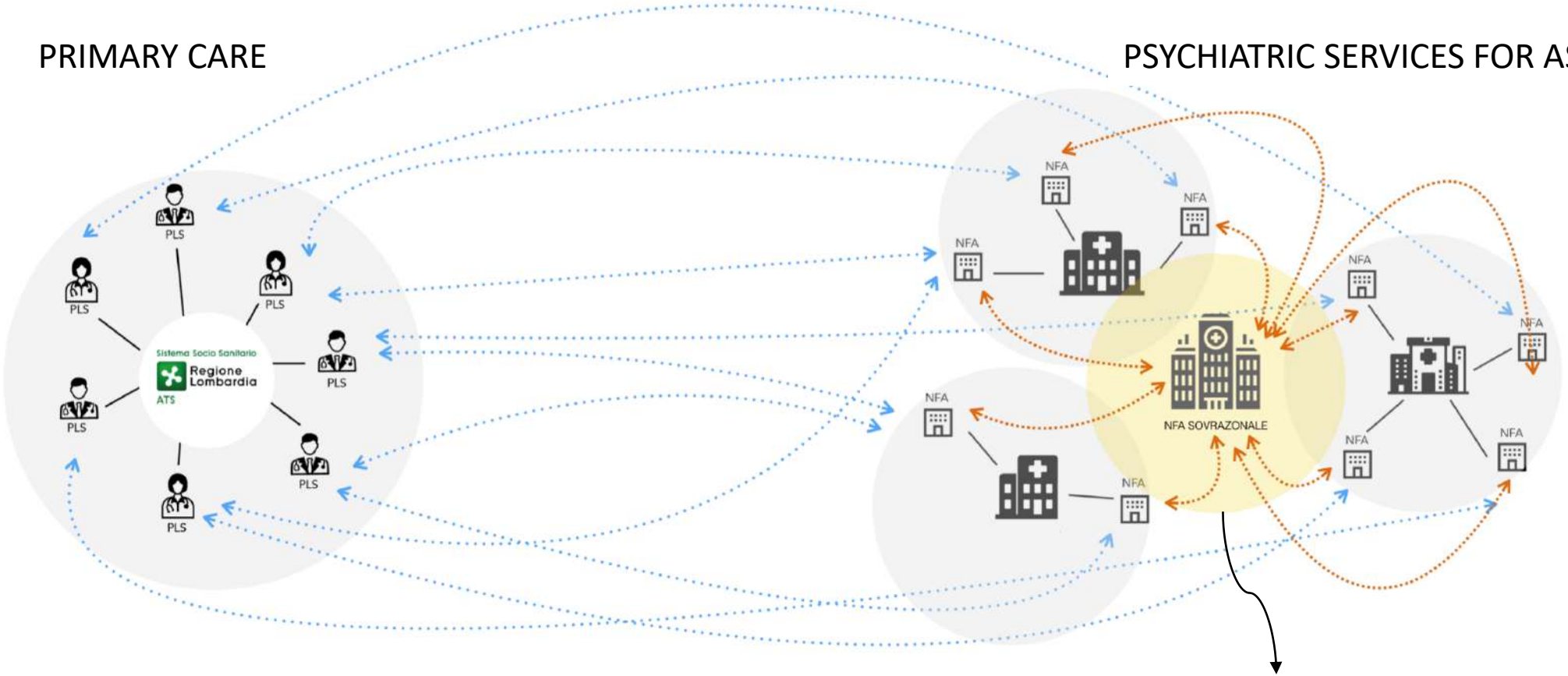
Chat

suddivisione per anno



PRIMARY CARE

PSYCHIATRIC SERVICES FOR ASD

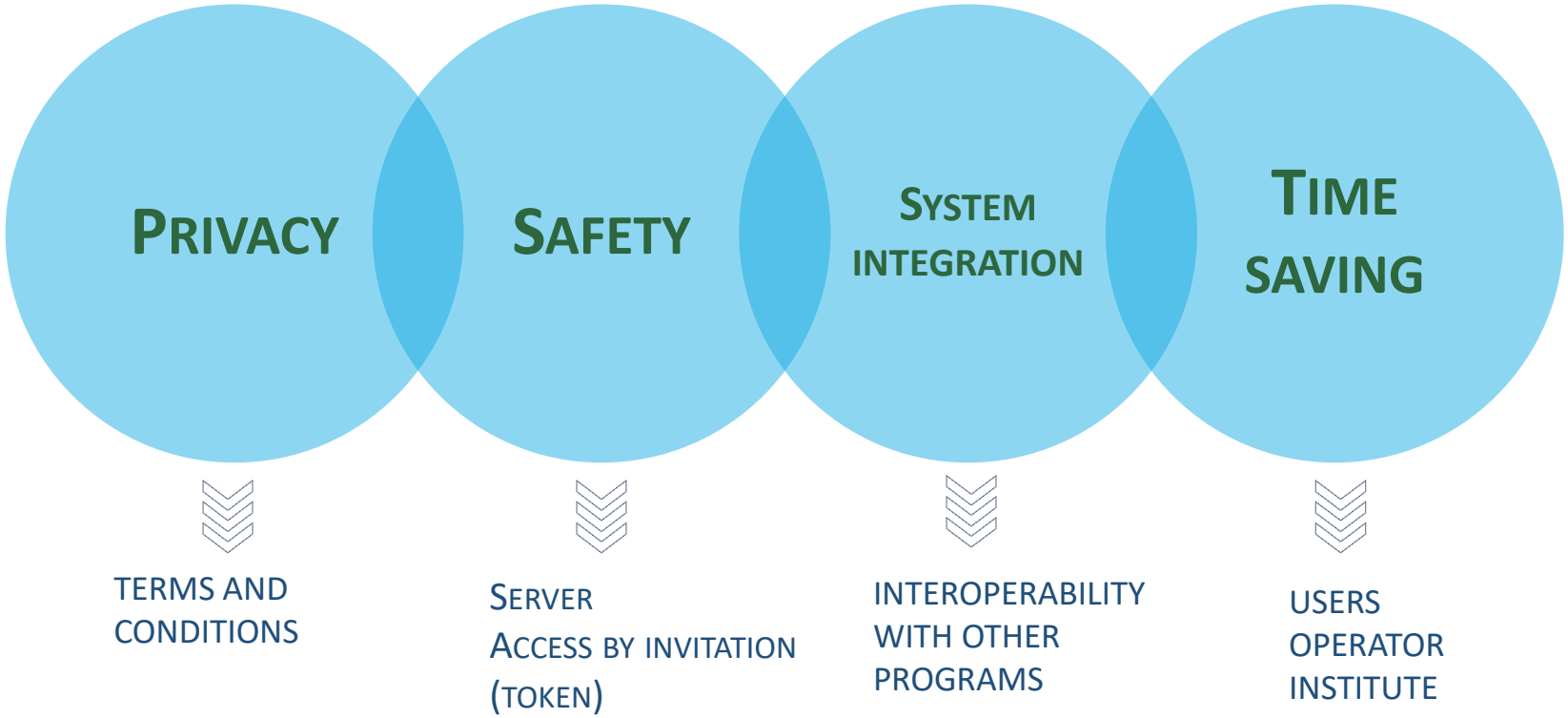


SPECIALIZED CENTERS

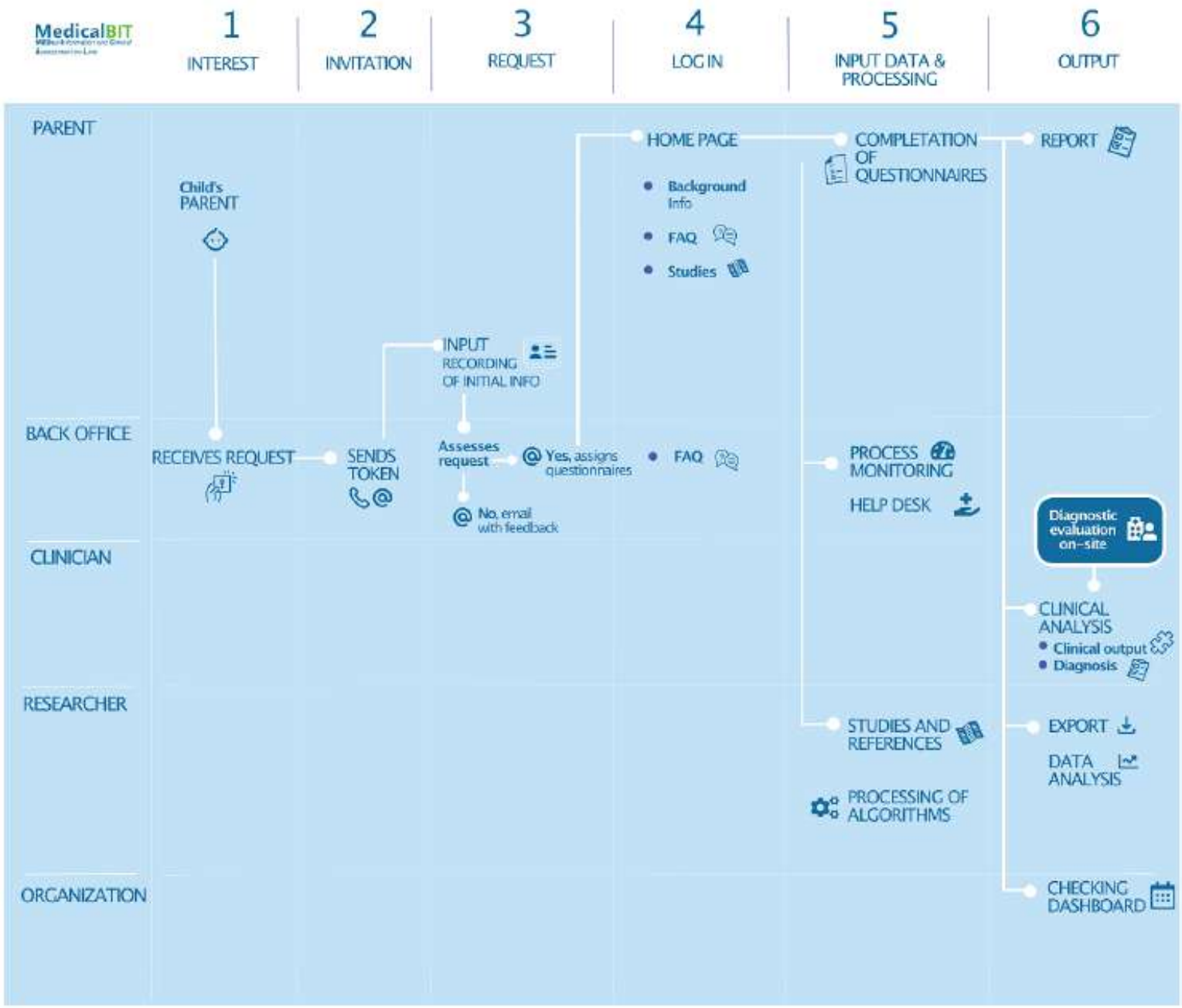
MEDea **I**nformation and **C**linical **A**ssessment on-**L**ine

A **telemedicine platform** to support **clinical activity** in **child psychiatry** service

MEDea Information and Clinical Assessment on-Line



DIAGNOSTIC PROCESS



SCREENING AND DIAGNOSTIC TOOLS

INPUT

AGE RANGE: 18 months – 15 years

SCREENING QUESTIONNAIRE FOR:

- RISK FACTORS
- ASD
- SPEECH DIS.
- LEARNING DIS.
- EMOTIONAL AND BEHAV. DIS.
- QUALITY OF LIFE

DIAGNOSTIC TOOLS:

- CBCL
- DAWBA

CLINICAL SINGLE OUTPUT

OUTPUT

Clinical Output

SDQ 4-16

SULLE CAPACITÀ E SULLE DIFFICOLTÀ

COMPLETATO IL 17/05/2021

14 - caso limite

5	SINTOMI EMOZIONALI A RISCHIO SCALA DA: 0 ÷ 10 (SOGLIA 4)	1	COMPORTAMENTO IN NORMA SCALA DA: 0 ÷ 10 (SOGLIA 3)
1	IPERATTIVITÀ IN NORMA SCALA DA: 0 ÷ 10 (SOGLIA 6)	7	RAPPORTI COI PARI A RISCHIO SCALA DA: 0 ÷ 10 (SOGLIA 3)
8	PROSOCIALI IN NORMA SCALA INVERSA DA: 0 ÷ 10 (SOGLIA 5)	2	IMPATTO A RISCHIO SCALA DA: 0 ÷ 2 (SOGLIA 1)

AQ-CHILD

COMPLETATO IL 17/05/2021

118

8	ABILITÀ SOCIALI SOPRA SOGLIA SCALA DA: 0 ÷ 10 (SOGLIA 7)	10	ATTENTION SWITCHING SOPRA SOGLIA SCALA DA: 0 ÷ 10 (SOGLIA 7)
10	ATTENZIONE AL DETTAGLIO SOPRA SOGLIA SCALA DA: 0 ÷ 10 (SOGLIA 7)	7	COMUNICAZIONE SOPRA SOGLIA SCALA DA: 0 ÷ 10 (SOGLIA 7)
10	IMMAGINAZIONE SOPRA SOGLIA SCALA DA: 0 ÷ 10 (SOGLIA 7)		

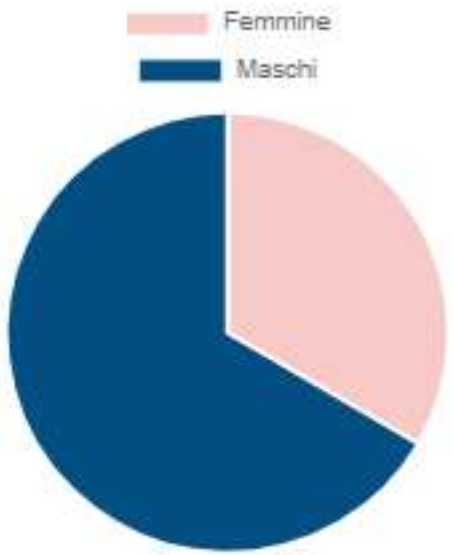
DASHBOARD

PAZIENTI	3.271

PAZIENTI ATTIVATI PER STRUMENTO

QUESTIONARI	3.167
PERCORSOAPP	70
TACHIDINO	63
TELECOACHING	48

GENERE



QUESTIONARI	13.712
PAZIENTI	3.167
QUESTIONARI DIAGNOSTICI	11.576
DI CUI TERMINATI:	10.862
TASSO DI DROPOUT:	*6 %*
PUNTEGGI CALCOLATI	*60.812*
QUESTIONARI CBCL	1.505
QUESTIONARI DAWBA	631

QUESTIONARI DIAGNOSTICI

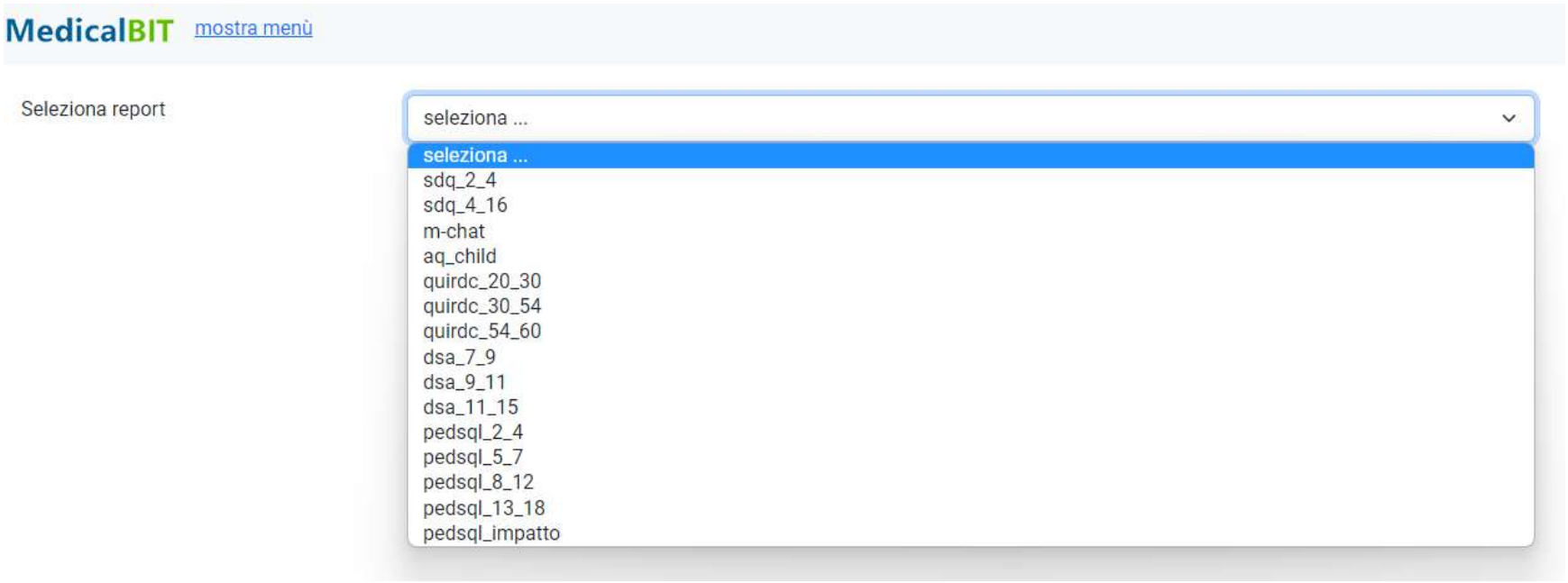
SOCIO-ANAMNESTICO	3.006
SDQ 4-16 SULLE CAPACITÀ ...	2.480
AQ-CHILD	1.771
QUIR-DC 30-54	686
DSA 7-9	684
DSA 9-11	559
DSA 11-15	480
SDQ 2-4 SULLE CAPACITÀ ...	463
CBCL 6-18	153
CBCL 1,5-5	101
QUIR-DC 54-60	97
QUIR-DC 20-30	72
M-CHAT-R/F	32
PEDSQL IMPATTO	12
PEDSQL 8-12	11
PEDSQL 13-18	3
PEDSQL 2-4	2
PEDSQL 5-7	2

DASHBOARD: CUSTOMER SATISFACTION

CLINICAL REPORT

OUTPUT

Reporting



CLINICAL REPORT

OUTPUT

Reporting

Seleziona report: seleziona ...

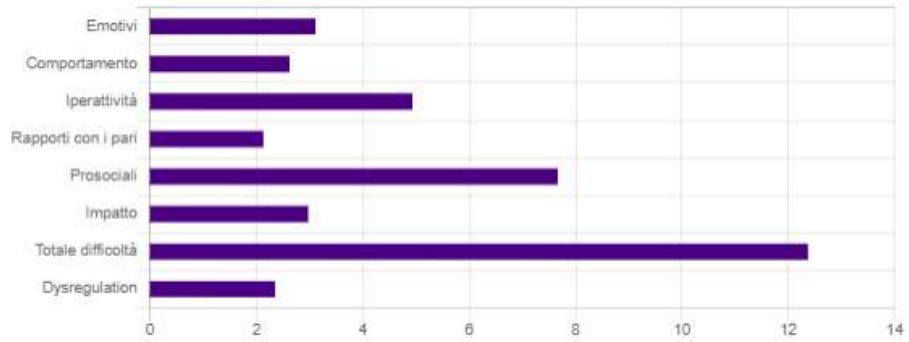
MEDICALBIT

REPORT CLINICO **SDQ 4_16**

TOTALE — QUESTIONARI **2480**

SCALE	MIN	MAX	MEDIA	DEVIAZIONE STD
Emotivi	0	10	3,11	2,32
Comportamento	0	10	2,62	1,99
Iperattività	0	10	4,93	2,71
Rapporti con i pari	0	10	2,12	2,10
Prosociali	0	10	7,66	2,02
Impatto	0	10	2,97	2,62
Totale difficoltà	0	33	12,36	6,70
Dysregulation	0	9	2,35	1,88

MEDIA PUNTEGGI TOTALI PER SCALA



Seleziona Diagnosi 1:

Seleziona Diagnosi 2:

applica

CLINICAL REPORT

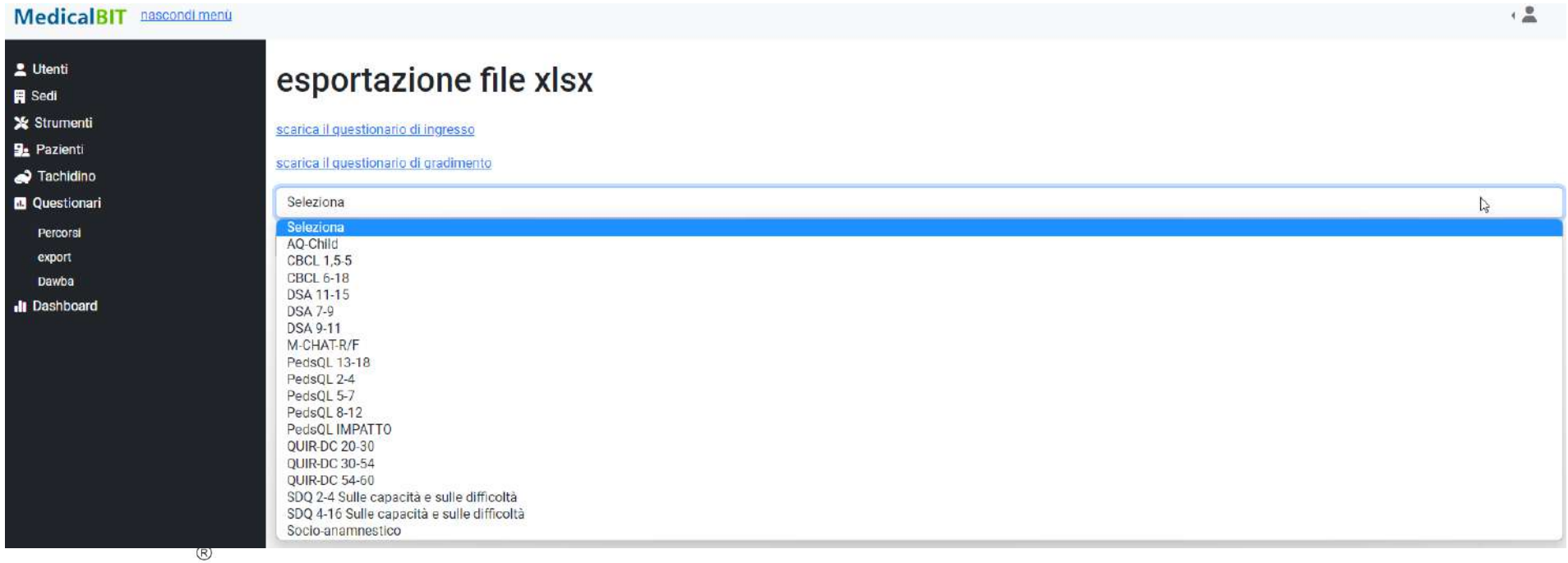
OUTPUT

Reporting

OUTPUT FOR RESEARCH

OUTPUT

Export Data



PUBLICATIONS

JMIR FORMATIVE RESEARCH Colombo et al

Original Paper

A Web Platform for Standardized Data Acquisition, Processing, and Export in the Child Psychopathology Clinical Routine (MedicalBIT): Design and Implementation Study

Paola Colombo[1], MSc, PhD; Silvia Busti Ceccarelli[1], MSc; Stefano Pacchiarini[2], ING; Stefano Cribellati[2], ING; Massimo Molteni[1], MD

PUBLICATIONS

European Child & Adolescent Psychiatry (2024) 33:139–149
https://doi.org/10.1007/s00787-023-02145-4

ORIGINAL CONTRIBUTION

Exploring telediagnostic procedures in child neuropsychiatry: addressing ADHD diagnosis and autism symptoms through supervised machine learning

Silvia Grazioli[1] · Alessandro Crippa[1] · Eleonora Rosi[1] · Antonio Candelieri[2] · Silvia Busti Ceccarelli[1] · Maddalena Mauri[1,3] · Martina Manzoni[1] · Valentina Mauri[1] · Sara Trabattoni[1] · Massimo Molteni[1] · Paola Colombo[1] · Maria Nobile[1]

PUBLICATIONS

This paper has been accepted and is currently in production.
It will appear shortly on 10.2196/54577
The final accepted version (not copyedited yet) is in this tab.

Preprint | Accepted Manuscript

Use of Machine Learning models to differentiate neurodevelopment conditions through digitally collected questionnaires: a retrospective study

Silvia Grazioli; Alessandro Crippa; Noemi Buo; Silvia Busti Ceccarelli; Massimo Molteni; Maria Nobile; Antonio Salandi; Sara Trabattoni; Gabriele Caselli; Paola Colombo

MedicalBIT
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JMIR FORMATIVE RESEARCH Colombo et al

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RESEARCH

CLINICAL PRACTICE

ePTRI
European Paediatric Translational Research Infrastructure

MedicalBIT follows children and their families during assessment and rehabilitation pathway:

DIAGNOSTIC PROCESS

The platform supports the diagnostic process with a structured collection of information that allows the parent to provide a complete and essential description of their child that the clinician will use for the next step.

THERAPEUTIC PROCESS

Multimedial and innovative paths integrated with traditional clinical practice, enriching the therapeutic and rehabilitation process.

THERAPEUTIC AND REHABILITATION PROCESS

MedicalBIT
LA NOSTRA FAMIGLIA

Fondazione CARIPLO

CARIPLO FACTORY

Giordano Dell'Amore
FONDAZIONE SOCIAL VENTURE

CARIPLO
INNOVA
WELFARE

PARENTING AND INNOVATION

«INNOVAWELFARE»

PROJECT FUNDED BY CARIPLO

12 MONTHS

05/24-04/25

EPTRI
EUROPEAN PAEDIATRIC TRANSLATIONAL RESEARCH INFRASTRUCTURE

ANSIA: gli approfondimenti
ANSIA

ANSIA: quali sono i correlati?

IRCCS EUGENIO MEDEA

LA NOSTRA FAMIGLIA
CURA RIABILITAZIONE E RICERCA DALLA PARTE DEI BAMBINI

Medea SmartLab

Nicole Viganò

Noemi Buo

Silvia Busti Ceccarelli

Paola Colombo

Director of Developmental Psychopathology Area: Dr. Massimo Molteni

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