PRO.M.I.S.
Programma Mattone Internazionale Salute

CONFERENCE

"Integrated services: organizational healthcare models in the framework of chronic diseases".

THE EMILIA ROMAGNA REGION CHRONIC DISEASE MANAGEMENT IN PRIMARY CARE ORGANIZATIONAL MODEL

26-27 March 2018
Turin, C.so Regina Margherita, 174

Elena Berti
Agenzia Sanitaria e Sociale Regionale (ASSR)

Ministero della Salute
REGIONE DEL VENETO
REGIONE DEL VENETO ULSS4 VENETO ORIENTALE
CONFERENZA DELLE REGIONI E DELLE PROVINCE AUTONOME

Health care in Emilia-Romagna

A few figures (2017)

	Emilia-Romagna	Italy
Residents (x 1,000)	4,457	60,589
% > 65 yrs	23.7	22.2
GDP (000's €), per capita	33.6	27.1
Infant mortality ‰	2.37	2.90
Public health expenditure (€), percapita	1,890	1,846
Hospital beds ‰ residents	3.9	3.2

Source: Health for all Italy (2017)
* Or nearest year

The Regional Health Service

- ✓ 8 Local Health Units
  - **38 Health Districts**
  - **53 Hospitals**
  - **103 Community Health Centers**
- ✓ 5 Hospital Trusts (4 Teaching)
- ✓ 4 Research Hospitals

60.528
dipendenti del Ssr

26.154
infermieri

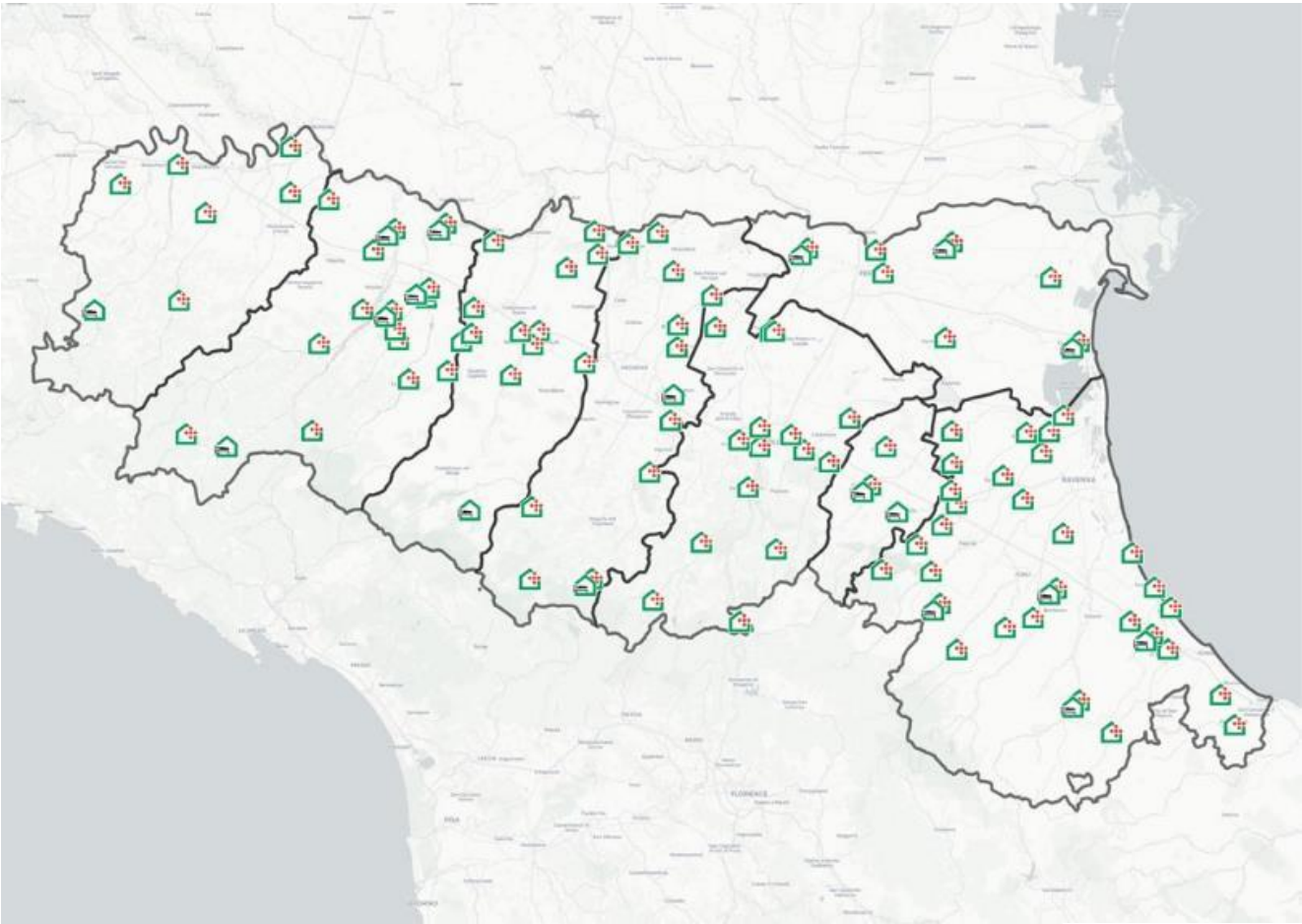
4.494
medici

2.993 GPs

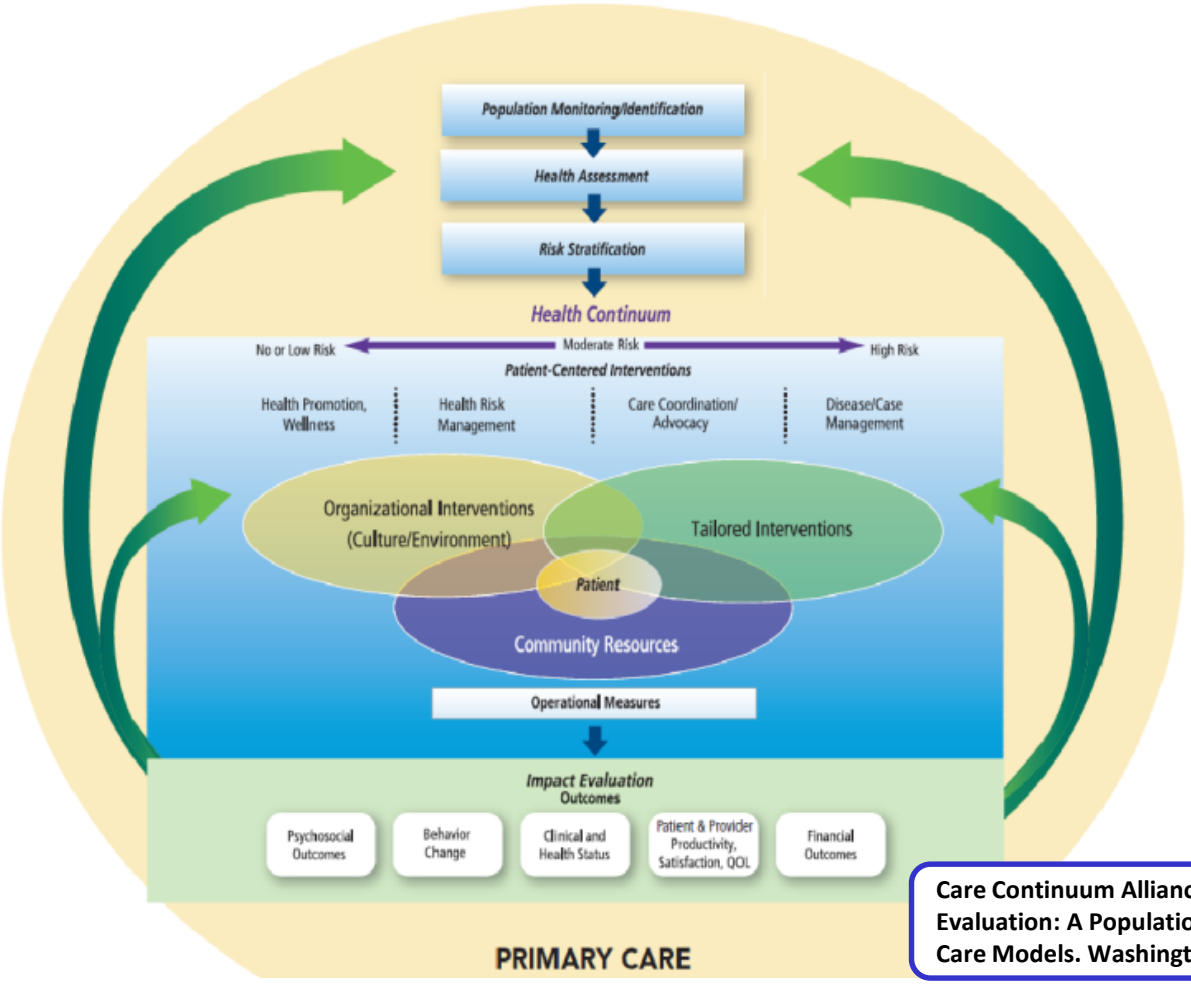
Community Health Centers
(Casa della Salute: DGR 291/2010, DGR 2128/2016)

- single point of access for citizens
- continuity of care
- coordination of responses for citizens
- integration with the hospital
- prevention programs
- promotion of citizens' participation
- ongoing education and training for healthcare workers

103 Community Health Centers
Coverage: 2 million residents



Population Health Management



Care Continuum Alliance: Implementation and Evaluation: A Population Health Guide for Primary Care Models. Washington, 2012

A Regional Predictive Model - RiskER

- predictive model to identify patients at high risk of hospitalization and frailty, developed with Jefferson University (BMJ open 2014:4:e005223 Louis DZ)
- ‘patient risk profiles’ providing information on high-risk patients to general practitioners (GPs) and nurses in the Case della Salute (Community Health Centers)

http://assr.regione.emilia-romagna.it/it/servizi/pubblicazioni/rapporti-documenti/report-risker-2018

A Regional Predictive Model - RiskER

- risk of hospitalization for ACSC or death
- **adult population** of the Region
- use of regional health/administrative data
- **Risk Score calculation**
- high level of **statistic accuracy** (C= 0.85)

BMJ Open Predicting risk of hospitalisation or death: a retrospective population-based analysis

Daniel Z Louis,[1] Mary Robeson,[1] John McAna,[2] Vittorio Maio,[2] Scott W Keith,[3] Mengdan Liu,[1] Joseph S Gonnella,[1] Roberto Grilli[4]

ABSTRACT

Objectives: Develop predictive models using an administrative healthcare database that provide information for Patient-Centred Medical Homes to proactively identify patients at risk of hospitalisation for conditions that may be impacted through improved patient care.

Design: Retrospective healthcare utilisation analysis with multivariate logistic regression models.

Data: A population-based longitudinal database of residents served by the Emilia-Romagna, Italy, health service in the years 2004–2012 including demographic information and utilisation of health services by 3 726 380 people aged ≥18 years.

Outcome measures: Models designed to predict risk of hospitalisation or death in 2012 for problems that are potentially avoidable were developed and evaluated using the area under the receiver operating curve C-statistic, in terms of their sensitivity, specificity and positive predictive value, and for calibration to assess performance across levels of predicted risk.

Results: Among the 3 726 380 adult residents of Emilia-Romagna at the end of 2011, 449 163 (12.1%) were hospitalised in 2012; 4.2% were hospitalised for the selected conditions or died in 2012 (3.8% hospitalised, 1.3% died). The C-statistic for predicting 2012 outcomes was 0.856. The model was well calibrated across categories of predicted risk. For those patients in the highest predicted risk decile group, the average predicted risk was 23.9% and the actual prevalence of hospitalisation or death was 24.2%.

Conclusions: We have developed a population-based model using a longitudinal administrative database that identifies the risk of hospitalisation for residents of the Emilia-Romagna region with a level of performance as high as, or higher than, similar models. The results of this model, along with profiles of patients identified as high risk are being provided to the physicians and other healthcare professionals associated with the Patient Centred Medical Homes to aid in planning for care management and interventions that may reduce their patients' likelihood of a preventable, high-cost hospitalisation.

Strengths and limitations of this study

- This study included the entire adult population of the Emilia-Romagna Region of Italy, over 3.7 million people.
- The study used an existing longitudinal administrative healthcare database with both the advantage of much lower cost than new data collection and the disadvantage of potential errors in administrative data.
- The results of the study are being used to assist in the development of newly formed Patient-Centred Medical Homes.

patients' problems, is shifting to a more proactive model designed to take the initiative in providing care for an increasingly older population that has a greater prevalence of chronic conditions, often with multiple medical and social needs. These changes are driving the reorganisation of the primary care system, emphasising coordination and cooperation among healthcare professionals.[1-4] Among the approaches to addressing this need has been the establishment of Patient-Centred Medical Homes, organisations in which teams of healthcare providers are engaged in delivering comprehensive, coordinated, patient-centred care to patient-defined populations.

Primary care has a central role in the Italian National Health Service (NHS). Twenty-one regional governments are responsible for ensuring the delivery of a health benefits package through a network of geographically defined, population-based Local Health Authorities. Primary care physicians work for these authorities as independent contractors and act as 'gatekeepers' for specialty and other referral services for their patients.[5]

With the belief that a strong primary care system is conducive to improving population

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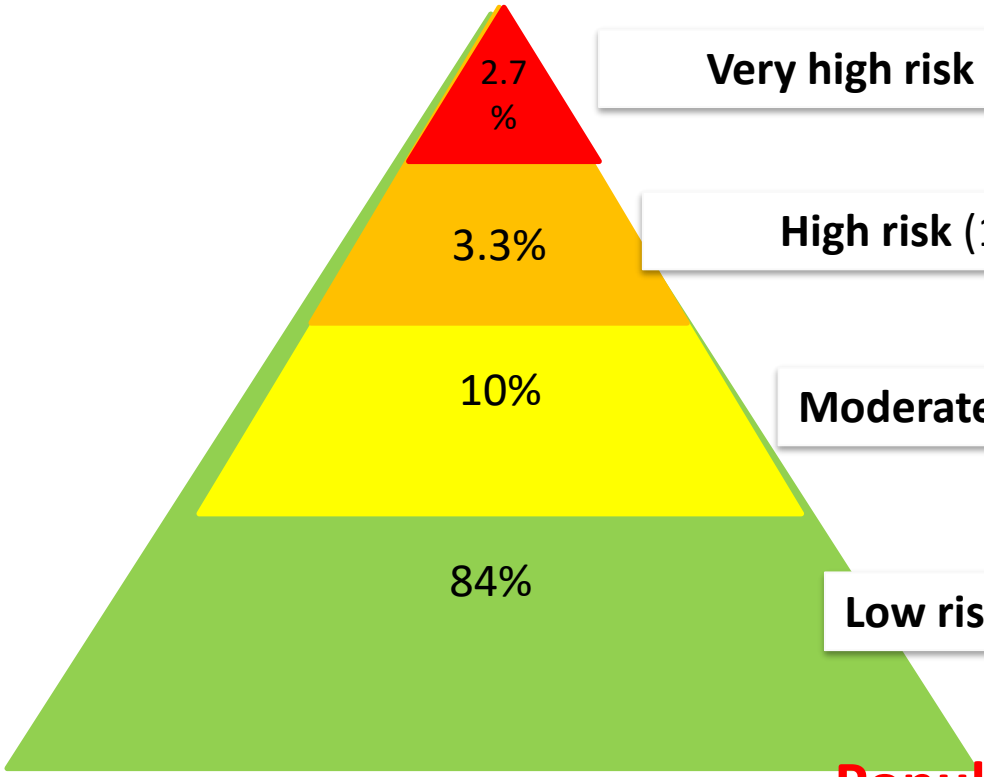
Regione del Veneto

Regione del Veneto ULSS4 Veneto Orientale

Conferenza delle Regioni e delle Province Autonome

Population risk stratification - 2016



Very high risk (≥25%) 100,470

High risk (15-24%) 124,589

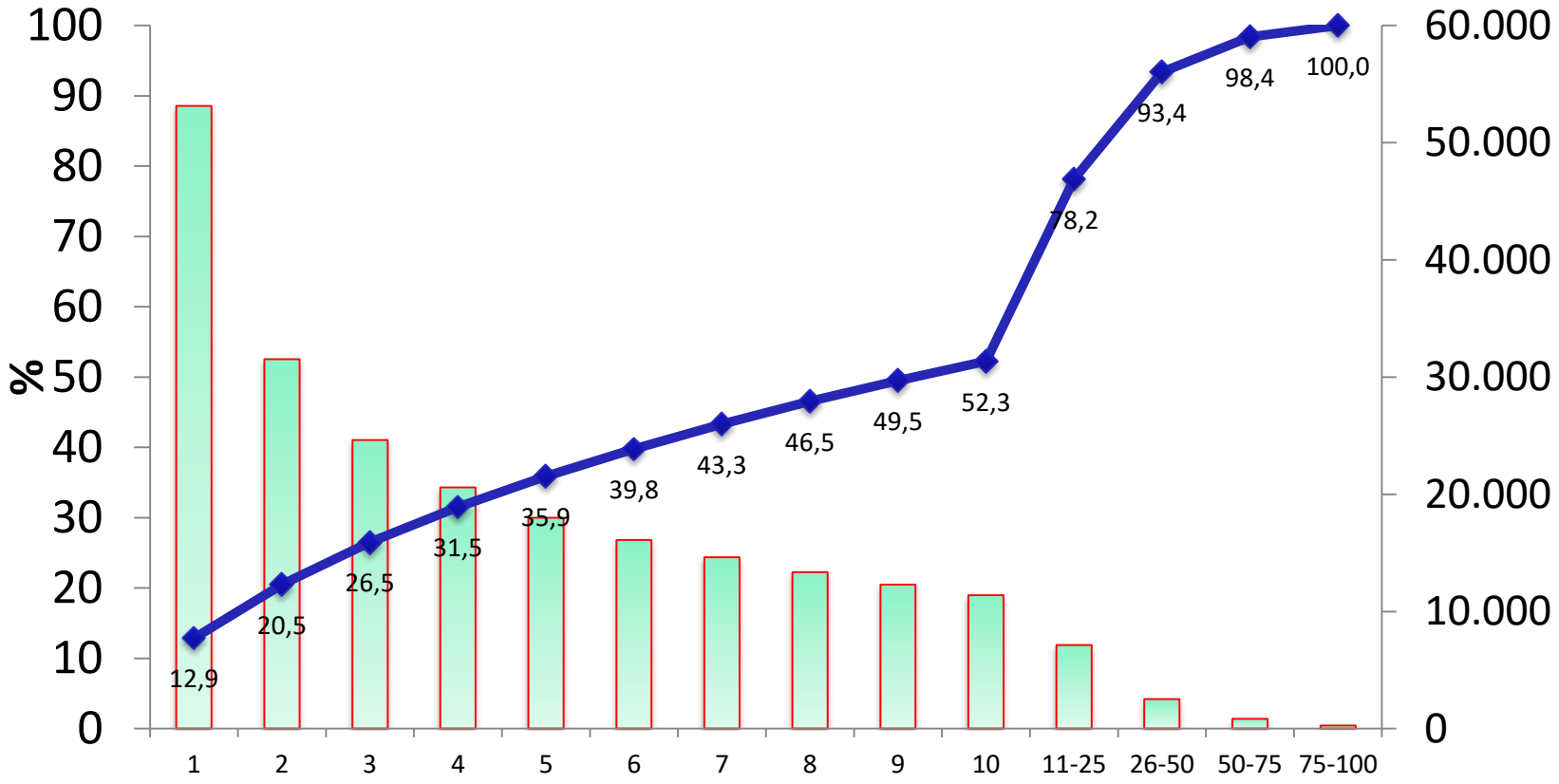
Moderate risk (6-14%) 354,083

Low risk (< 6%) 3,163,348

Population 18+ = 3,765,891

Prevenzione Primaria

Concentration of expenditure: 1% patients…13 % expenditure



Ministero della Salute

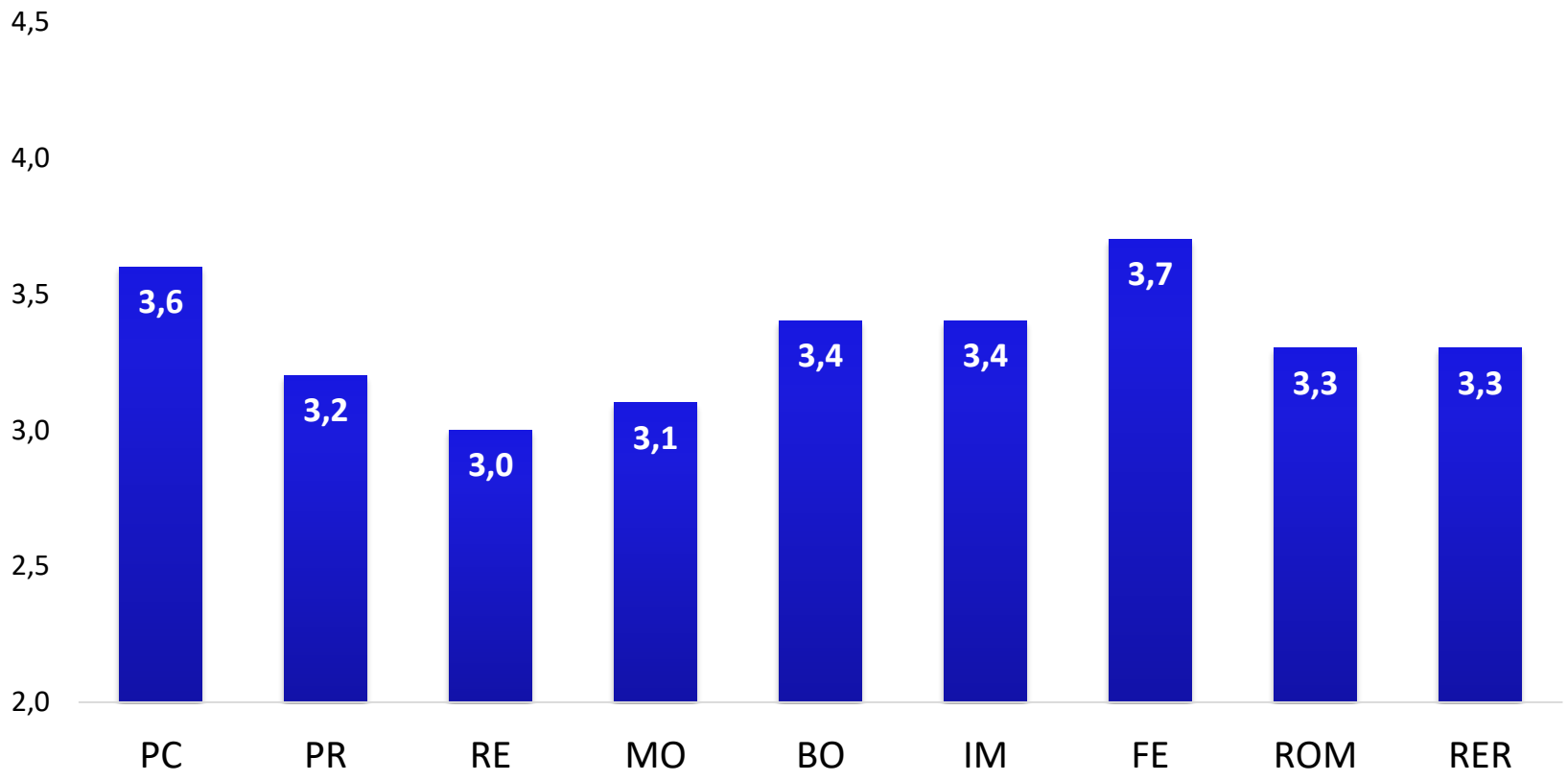
REGIONE DEL VENETO

REGIONE DEL VENETO ULSS4 VENETO ORIENTALE

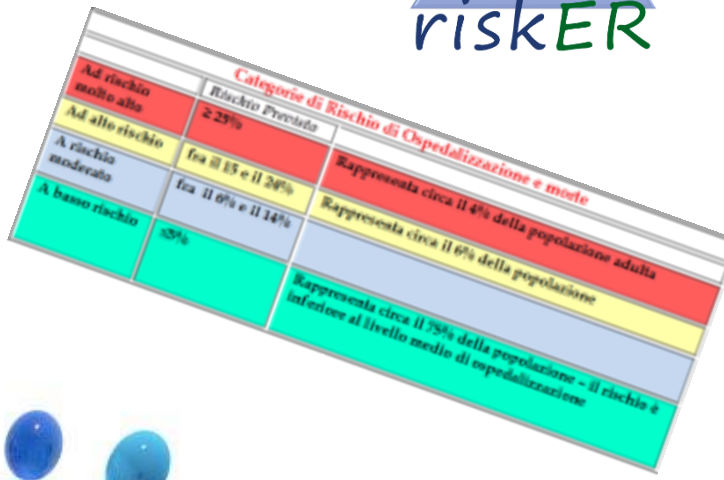
CONFERENZA DELLE REGIONI E DELLE PROVINCE AUTONOME

84% of the residents are low risk…

….3.3% are very high risk



Risk-ER Users



Categorie di Rischio di Ospedalizzazione e morte		
	Rischio Previsto	
Ad rischio molto alto	≥ 25%	Rappresenta circa il 4% della popolazione adulta
Ad alto rischio	fra il 15 e il 24%	Rappresenta circa il 6% della popolazione
A rischio moderato	fra il 6% e il 14%	
A basso rischio	<5%	Rappresenta circa il 75% della popolazione - il rischio è inferiore al livello medio di ospedalizzazione

Community Health Centres

- GPs
- Hospital specialists
- Nurses
- Social workers
- FKT
- Voluntary sector

Risk-ER Actions

- ✓ Risk Profiles provided to GPs
- ✓ Activation of Professional Teams
  - ✓ GPs, specialists, nurses, physioterapists, social workers
  - ✓ a proactive response…
- ✓ Interdisciplinary Paths
  - ✓ prevention, clinical appropriateness and adherence, health education…
- ✓ Participation of Community,
  - ✓ Patients, Caregivers, Associations

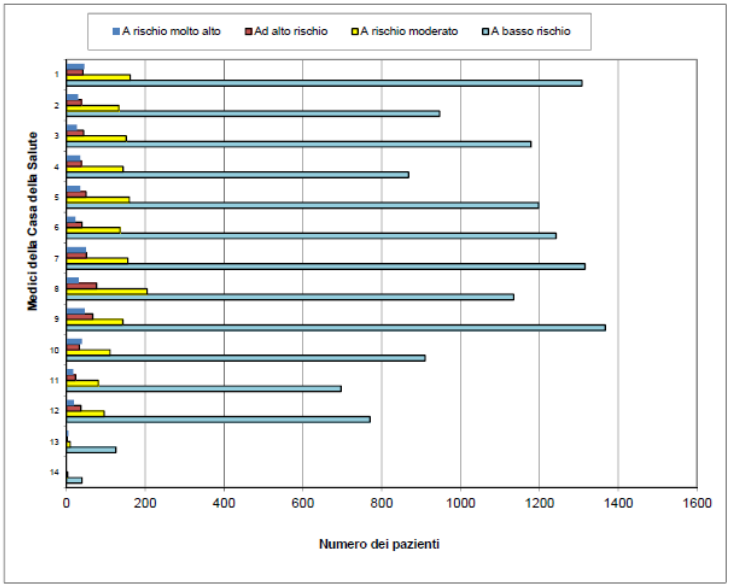
CHC report

Casa della Salute: Crevalcore	Distretto: PIANURA OVEST
Sommario - Pazienti adulti (n=15337)	

I dati dei pazienti della Casa della Salute sono relativi ai servizi sanitari utilizzati nell'anno 2013. Tali dati sono stati quindi usati per predire nella popolazione adulta il rischio di ospedalizzazione o morte per le condizioni selezionate per il 2014.

A rischio molto alto	Il rischio previsto di ospedalizzazione è ≥ 25%	Rappresenta circa il 4% della popolazione
Ad alto rischio	Il rischio previsto di ospedalizzazione è fra il 15 e il 24%	Rappresenta circa il 6% della popolazione
A rischio moderato	Il rischio previsto di ospedalizzazione è fra il 6 e il 14%	Rappresenta circa il 15% della popolazione – l'intervallo di rischio è stato scelto in base al livello medio di rischio di ospedalizzazione o morte della popolazione adulta
A basso rischio	Il rischio previsto di ospedalizzazione è ≤5%	Rappresenta circa il 75% della popolazione - Il rischio è inferiore al livello medio di rischio di ospedalizzazione o morte della popolazione adulta

Numero dei pazienti per tutti i medici nella Casa della Salute in base alla categoria di rischio di ospedalizzazione



GP report

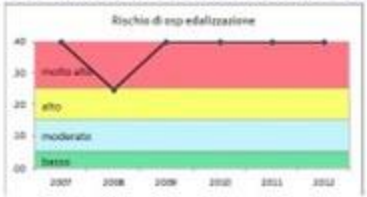
Paziente: 1094553 Patient

Sesso: F *Età:* 44

Rischio di ospedalizzazione previsto per il 2013:

Molto alto

Il grafico mostra il cambiamento nel tempo del rischio di ospedalizzazione previsto per il paziente



Questo documento è un sommario delle informazioni di natura amministrativa per un paziente previsto a probabile 'rischio molto alto' di ospedalizzazione nel 2013 in base ai consumi sanitari del 2012.

Patologie croniche (in base al sistema a eziologia)

- ☑ *Cardiovascolari*
- ☐ *Dermatologiche*
- ☐ *Ematologiche*
- ☐ *Endocrine*
- ☑ *Epatiche*
- ☑ *Gastrointestinali*
- ☐ *Genitourinarie*
- ☐ *Ginecologiche*
- ☐ *Immunologiche*
- ☐ *Infettive*
- ☐ *Muscoloscheletriche*
- ☑ *Neurologiche*
- ☐ *Oftalmologiche*
- ☐ *Otorinoralingoiatriche*
- ☑ *Psichiatriche*
- ☐ *Respiratorie*
- ☐ *Sistema Genitale Maschile*
- ☐ *Tumorali*

Ospedalizzazione 2012 – N. di ricoveri occorsi al paziente: 1

N. 1 *Degenza ordinaria presso Ospedali Riuniti-Pr*

02/01/12 - 02/02/12 gg_deg: 31 *Dimissione:* Ordinaria a domicilio

Patologia principale del ricovero: 785.59 Altro Shock Senza Menzione Di Trauma

Comorbidità: 789.5 Ascite
571.2 Cirrosi Epatica Alcolica
570 Necrosi Acuta E Subacuta Del Fegato
307.1 Anoressia Nervosa
070.54 Epatite C Cronica Senza Menzione Di Coma Epatico

Procedura: 42.91 Legatura Di Varici Esofagee

Prestazioni Successive 2012 – N. : 3

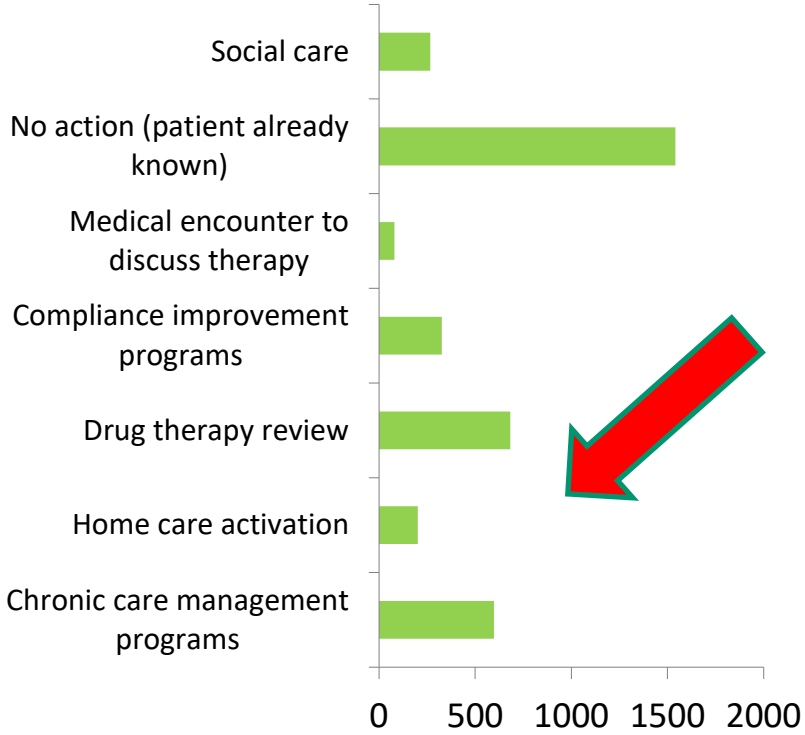
Presso Ospedali Riuniti-Pr

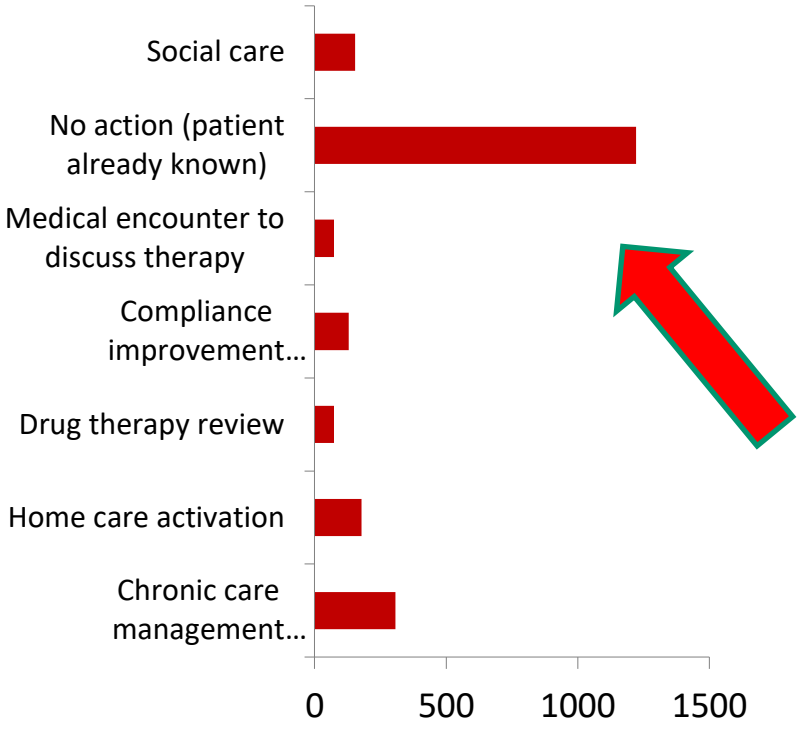
13/02/12 - 13/02/12 Altri Sintomi O Disturbi

Risk-ER project results in 6 CHC

3.453 high risk patients

2.568 very high risk patient





ROMA, 14 Marzo 2018

La gestione del paziente complesso nel territorio: un compendio di buone pratiche

Gli aspetti organizzativi.

La valutazione di impatto quantitativa.

La valutazione qualitativa

http://www.ccm-network.it/progetto.jsp?id=node/1904&idP=740

REGIONE DEL VENETO

6/12 months Risk-ER/individual care plan (PAI) monitoring

	6 months		12 months	
	PAI monitored/PAI activated	Interrupted PAI	PAI monitored/PAI activated	Interrupted PAI
Emilia Romagna	458/488	30	433/458	25
Veneto	273/330	30	205/300	32
Toscana	410/464	45	400/424	32
Sardegna	131/131	32	-	

The evaluated Risk-ER cohort

Emilia-Romagna

Gender	N	%
M	221	45,2
Age classes		
45-59	24	5
60-74	54	11
75-84	140	30
85+	258	53
Chronic diseases number		
1	115	23,6%
2	288	59,0%
3	54	11,1%
4	23	4,7%
5	8	1,6%

RISK-ER CLINICAL IMPACT EVALUATION

	Exposed incidence rate (n=488)		Not exposed incidence rate (n=488)		Incidence rate ratio (exposed vs not exposed)		
	Value	95%CI	Value	95%CI	Value	95%CI	p-value
Emergency departments visits	236 (48,4)	(43,9-52,8)	299 (61,3)	(56,9-65,6)	0,79	(0,70-0,89)	0,001
Hospital admissions	107 (21,9)	(18,3-25,6)	136 (27,9)	(23,9-31,8)	0,78	(063-0,98)	0,033
ACSC admissions	22 (4,5)	(2,7-6,3)	36 (7,4)	(5,1-9,7)	0,61	(0,37-1,02)	0,061
Mortality	20 (4,1)	(2,3-5,9)	27 (5,5)	(3,5-7,6)	0,75	(0,42-1,30)	0,289

Evaluation of CHC disease management programs

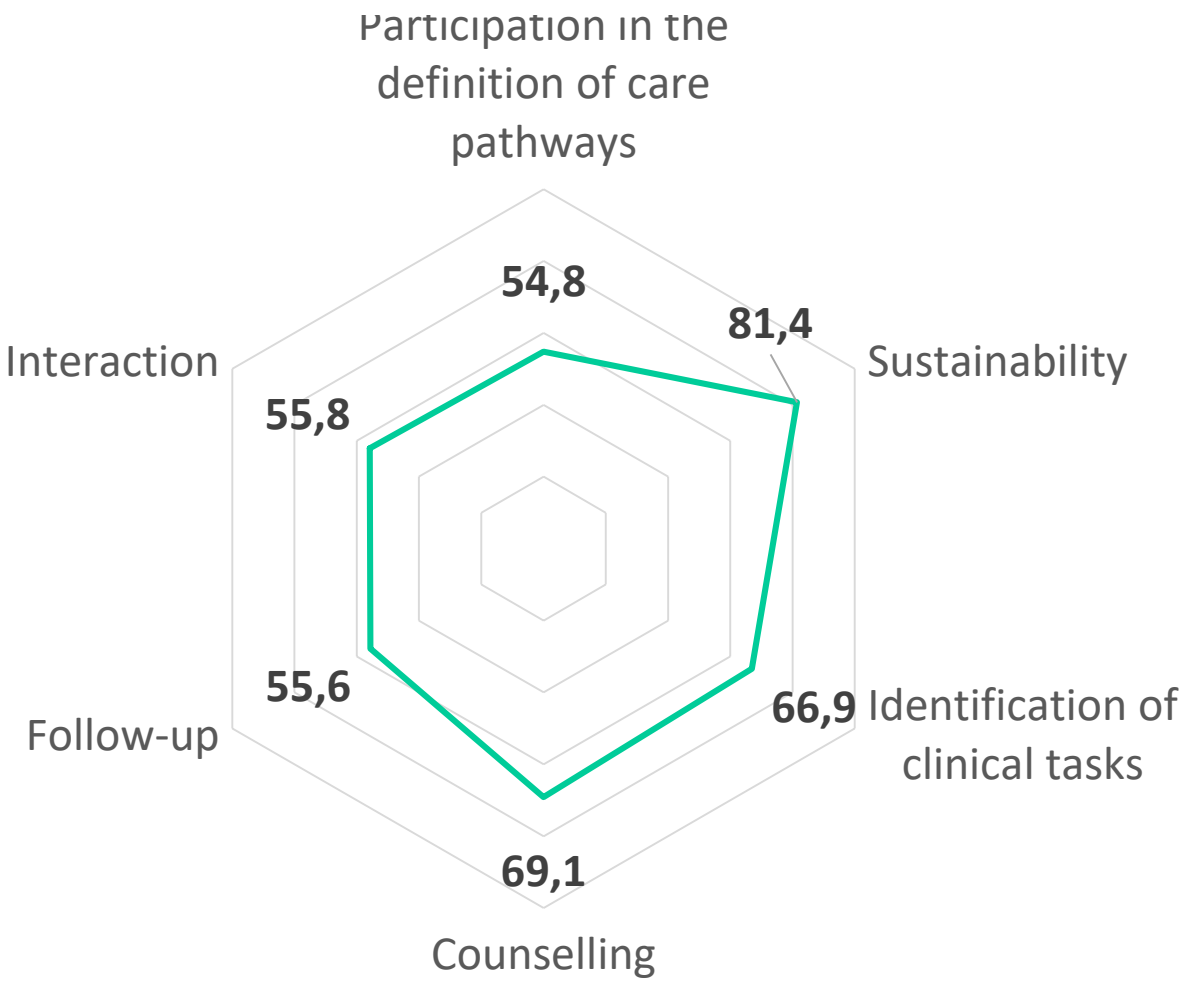
- Patient Assessment Chronic Illness Care-PACIC:

Patients point-of-view in cooperation with patients' associations (CHF, diabetes, COPD, ESRD)

- Assessment Chronic Illness Care- ACIC:

Health care team point-of-view focus-group: GPs, nurses, social workers, ambulatory specialists, Primary Care Department)

Patient Assessment Chronic Illness Care-PACIC



Future actions

- **Risk-ER tool diffusion to other CHC**
- **Ministry of Health Grant (CCM 2017):** Emilia-Romagna, Lombardia, Lazio, Campania:
  - Economic evaluation of risk stratification
  - Impact of risk stratification on outcome indicators
  - Analysis of motivational tools (counselling, conversation maps, Barrows Cards,…)
  - Impact on professional integration (PACIC, ACIC)

THANKS FOR YOUR ATTENTION

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