Impact on the care of non-Covid related diseases in long term facilities

Impatto sulla cura delle malattie non-Covid nelle strutture a lunga degenza

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The NEW ENGLAND JOURNAL of MEDICINE

MEDICINE AND SOCIETY

Debra Malina, Ph.D., *Editor*

The Untold Toll — The Pandemic's Effects on Patients without Covid-19

Lisa Rosenbaum, M.D.

N ENGL J MED 382;24 NEJM.ORG JUNE 11, 2020

«As the Coronavirus pandemic focuses medical attention on treating affected patients and protecting others from infection, how do we best care for people with non Covid-related diseases?»

Healthcare delivery during emergencies

Emergencies (i.e. floods, hurricane, earthquake, pandemic, etc) affect healthcare delivery by different mechanisms:

a. disruption of care services
b. hospital overcrowding
c. healthcare resources diversion
d. interruptions to medication supplies
e. neglect of non emergency-related diseases
f. interruption to routine care
g. changes in food supply
h. changes in activity levels
i. disruptions in transport

Pandemics add further complications:

a. not seeking treatment for fear of contagion
b. healthcare workforce infections

Supporting people with long-term conditions (LTCs) during national emergencies
March 25, 2020
CEBM RESEARCH Oxford COVID-19 Evidence Service
Jamie Hartmann-Boyce, Kamal R. Mahtani

Interruption to routine care

Interruption to routine care is particularly threatening for **Long Term Conditions (LTCs)**, such as diabetes, cardiovascular diseases, etc.

Management of LTCs has been revealed of acute importance during the COVID-19 pandemic:

- ✓ many common LTCs may put people at higher risk of COVID-19 severity and complications
- ✓ it is not just presence of these conditions, but how well they are controlled, that will contribute to different outcomes
- ✓ Stress, inactivity, changes to diet, and issues with accessing healthcare can exacerbate some LTCs. All of these factors are likely to arise as supply chains are disrupted, food stock is temporarily depleted, and people living with LTCs are asked to self-isolate.

Current evidence

Much of the evidence related to LTCs and pandemic focuses on how infection is manifested in people living with LTCs.

Evidence about the impact of pandemic on non Covid-related diseases is focused mainly on acute diseases, cardiovascular diseases and neoplasms.

Other observational evidence comes from studies of natural disasters (e.g. hurricanes, floods) suggesting that LTCs management is at risk of neglect during emergencies.

COMPREHENSIVE REVIEW

No Calm After the Storm: A Systematic Review of Human Health Following Flood and Storm Disasters

Dell D. Saulnier, Msc; Kim Brolin Ribacke, PhD; Johan von Schreeb, MD, PhD

Prehospital and Disaster Medicine 2017

This systematic review of human health following flood and storm disasters noted that

- disasters are indirectly responsible for exacerbation, onset, and worsened management of LTCs, driven both by their effects on individuals and health service delivery, which affects management and continuity of care
- current responses to disasters may be suboptimal, with teams over-prepared in regard to disaster response and under-prepared for chronic or routine complaints after natural disasters.

About epidemics

Effects of Response to 2014–2015 Ebola Outbreak on Deaths from Malaria, HIV/AIDS, and Tuberculosis, West Africa

Table 3. Deaths from malaria, HIV/AIDS, and tuberculosis correlated with a 50% reduction in treatment coverage attributable to response to the Ebola outbreak, West Africa, 2014–2015

Country and disease	Total no. estimated deaths	No. deaths (95% CI) attributable to outbreak	% Change in attributable deaths (95% CI)	Total deaths attributable to outbreak
Guinea				6,269 (2,564–12,407)
Malaria	12,825 (4,845–21,945)	4,275 (570–9,405)	48.0 (4.9–93.8)	
HIV/AIDS	5,151 (3,099–7,333)	713 (58–1,528)	16.2 (1.3–30.2)	
Tuberculosis	3,463 (2,808–4,349)	1,281 (877–1474)	51.1 (44.7–70.5)	
Liberia				1,535 (522–2,878)
Malaria	2,573 (735–5,040)	788 (105–1,890)	53.6 (4.8–145.5)	
HIV/AIDS	1,198 (851–1,841)	155 (23–297)	13.0 (2.6–25.4)	
Tuberculosis	1,553 (1,216–1,875)	592 (394–691)	59.0 (47.9–77.4)	
Sierra Leone				2,819 (844–4,844)
Malaria	4,860 (2,700–9,450)	1,755 (135–2970)	50.0 (5.0–118.8)	
HIV/AIDS	2,621 (1,390–4,183)	223 (29–504)	9.1 (1.6–19.1)	
Tuberculosis	2,164 (1,815–2,548)	841 (680–1,010)	61.4 (49.2–87.6)	

Response to the 2014–2015 Ebola outbreak in West Africa overwhelmed the healthcare systems of Guinea, Liberia, and Sierra Leone, reducing access to health services for diagnosis and treatment for the major diseases that are endemic to the region: malaria, HIV/AIDS, and tuberculosis.

+ 10.623 deaths

About epidemics

Med Care. 2013 March ; 51(3): 259–265. doi:10.1097/MLR.0b013e31827da8ea.

Impact of the Fall 2009 Influenza A(H1N1)pdm09 Pandemic on US Hospitals

Lewis Rubinson, MD, PhD[*], Ryan Mutter, PhD[†], Cecile Viboud, PhD[‡], Nathaniel Hupert, MD, MPH[§], Timothy Uyeki, MD, MPH, MPP[‖], Andreea Creanga, MD, PhD[¶], Lyn Finelli, DrPH[‖], Theodore J. Iwashyna, MD, PhD[#], Brendan Carr, MD, MS[**], Raina Merchant, MD, MS[**], Devi Katikineni, MS[††], Frances Vaughn, PhD[*], Carolyn Clancy, MD[†], Nicole Lurie, MD, MSPH[*]

Surges in hospital admissions for influenza and pneumonia during the 2009 influenza pandemic were associated with statistically significant increases in deaths attributable to stroke and acute myocardial infarction.

…. We cannot determine whether this increase in baseline mortality is due to patient mix, hospital care processes, or even residual confounding due to imbalanced effects of influenza on certain hospitals.

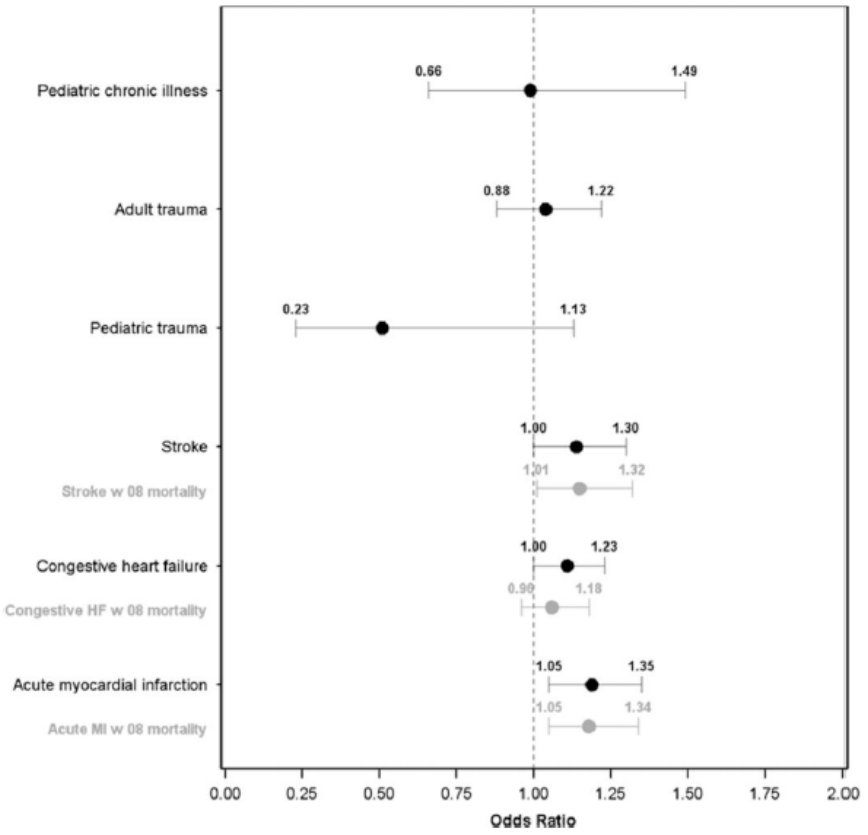


FIGURE 1.
Adjusted odds ratios for mortality by condition, high-surge hospitals versus nonsurge hospitals during the pH1N1 fall wave. Covariates (not shown on figures) include age, sex, All Patient Refined Diagnosis Related Group (APR-DRG) severity, presence of 29 Comorbidity Software variables, hospital size, hospital teaching status, hospital ownership/control, as well as pneumonia and influenza diagnosis.

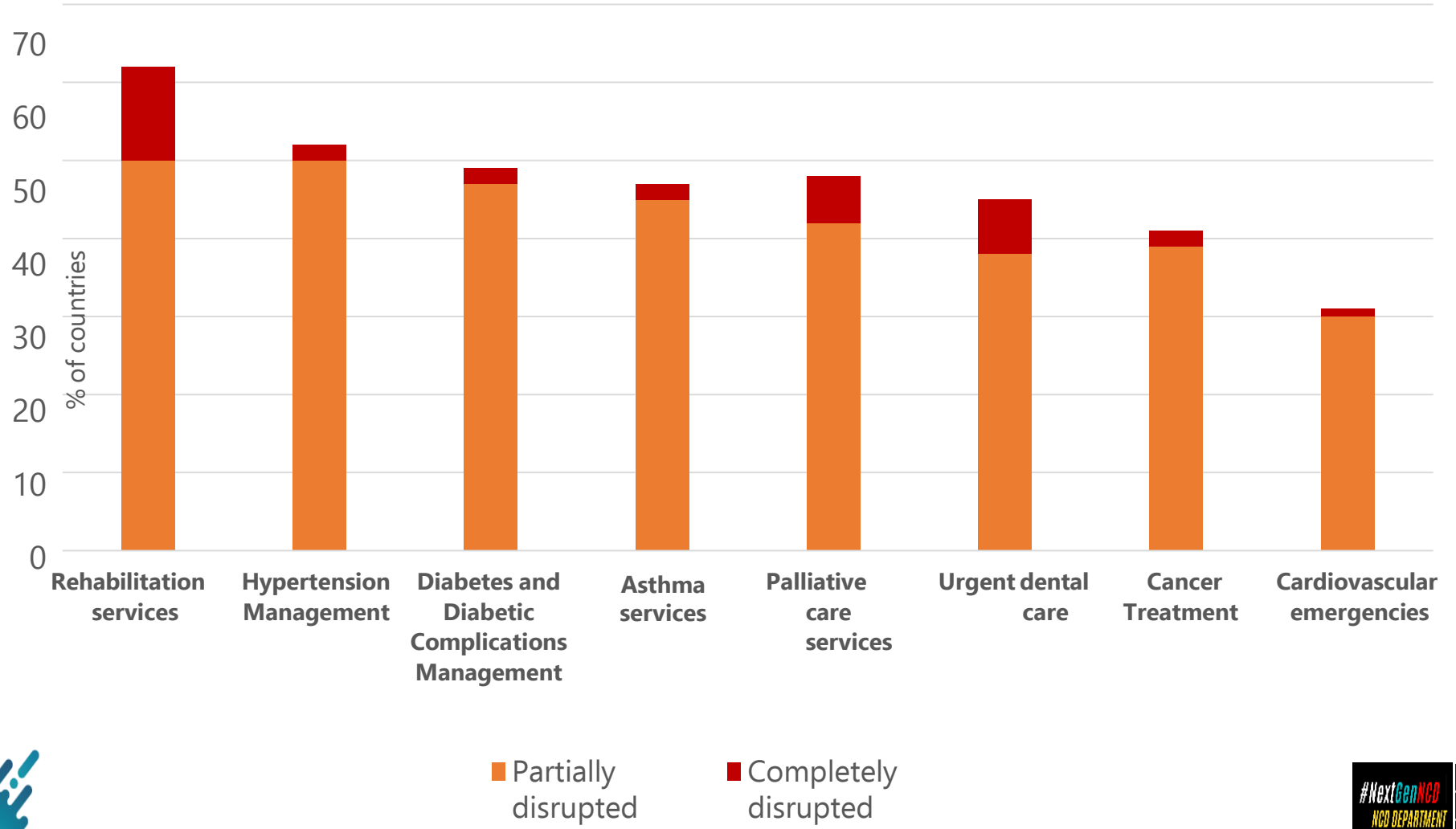
Disruption of services for the prevention and treatment of NCDs

What: WHO conducted a **rapid assessment survey of service delivery for NCDs during the COVID-19 pandemic** among 194 Ministries of Health.
Responses were received from 163 Ministries (84%).

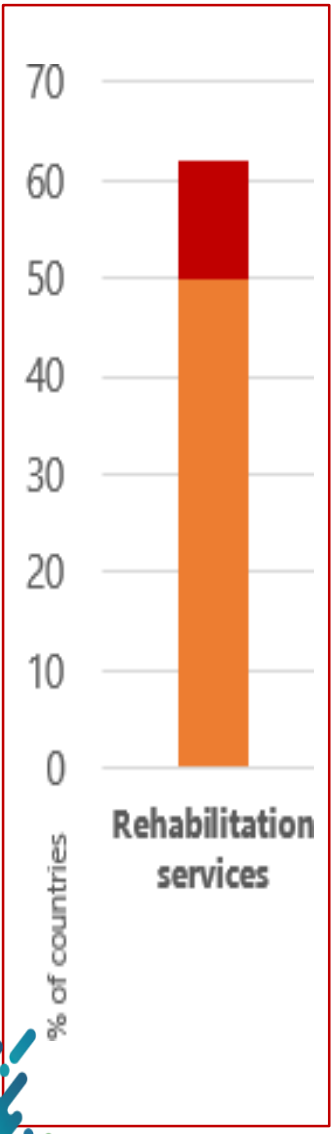
When: Between 1 May 2020 and 25 May 2020.

Why: To get a snapshot of the situation, following deepening concerns that many people living with NCDs are no longer receiving appropriate treatment or access to medicines during the COVID-19 pandemic.

122 countries reported that NCD services are disrupted



Rehabilitation is the most commonly disrupted service



Why: Rehabilitation continues being wrongly perceived as a non-essential health service for all patients when for many patients it is essential.

What services are disrupted: Acute rehabilitation (premature discharge after COVID-19 but also e.g. after heart disease, stroke and surgery), post-acute rehabilitation (e.g. cardiovascular disease and amputations) and outpatient rehabilitation (e.g. people in need of physiotherapy).

Consequences: Compromised health outcomes, future increased need including longer inpatient stays, and preventable hospital admissions due to complications.

WHO's recommendations:

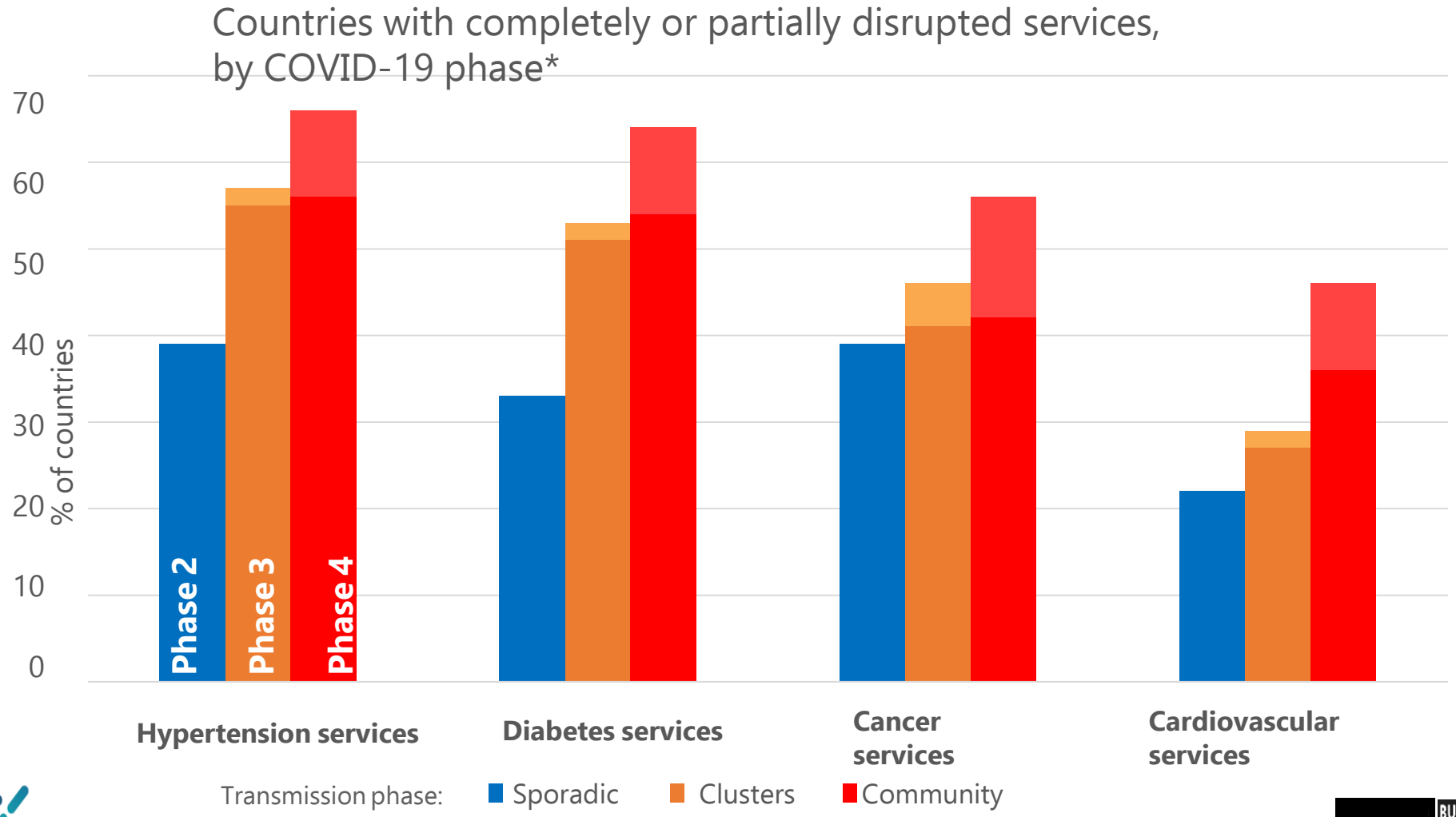
When rehabilitation services are temporarily ceased, decreased or diverted, clear guidance needs to be adopted to **identify priority patients who should continue rehabilitation** (e.g. surgery, stroke, cardiovascular emergencies and NCDs multimorbidity).

Wherever appropriate and feasible, **tele-rehabilitation services should be used**.

#NextGenNCD NCD DEPARTMENT BUILD BACK BETTER

The more severe the transmission phase of the COVID-19 pandemic, the more NCDs services are disrupted

World Health Organization



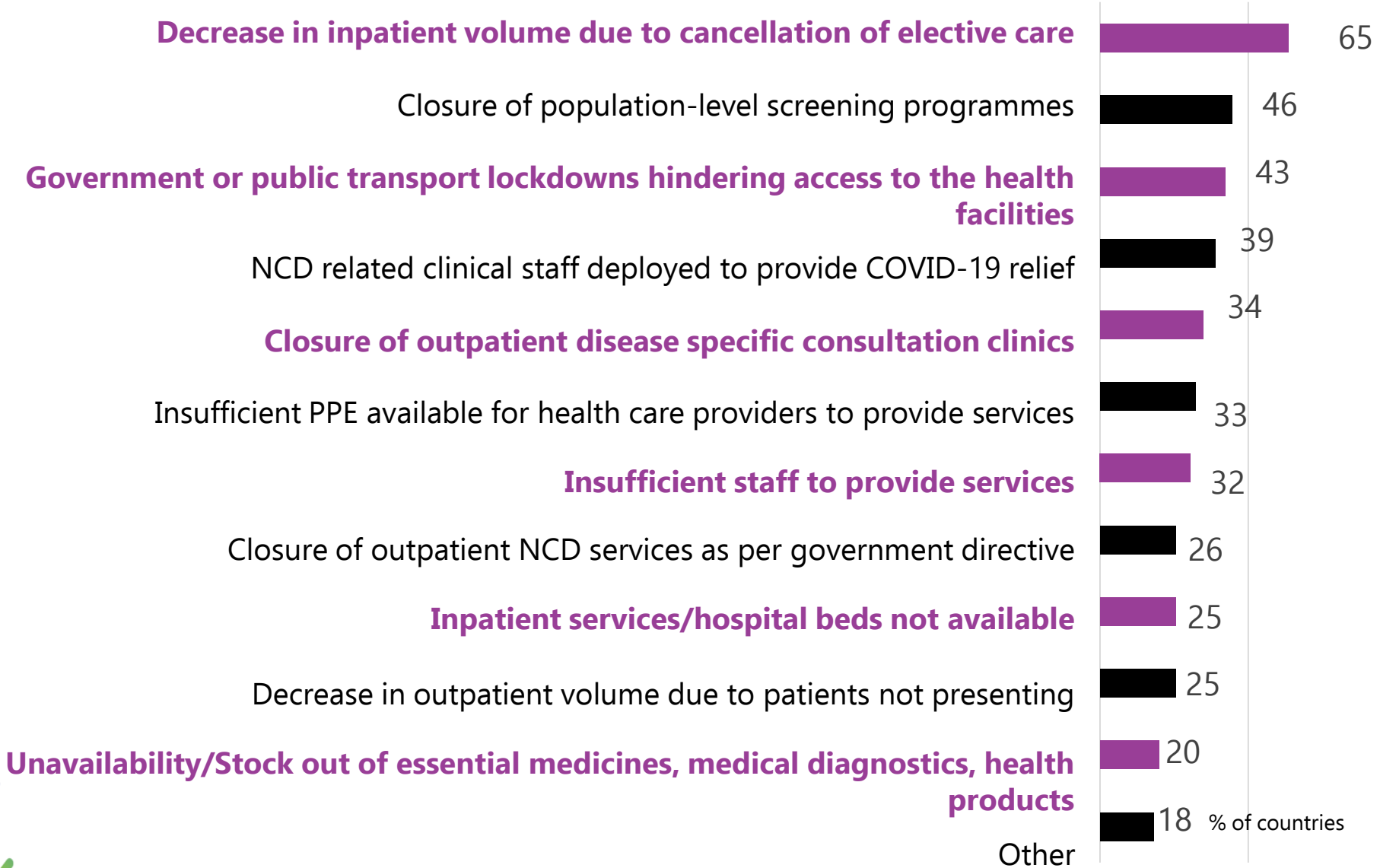
*Countries reporting unknown levels of disruption shown in lighter shade

#NextGenNCD NCD DEPARTMENT BUILD BACK BETTER

Main causes of NCD service disruption: 75% of countries reporting disruptions

World Health Organization

Out of 122 countries reporting disruptions



High risk populations

- To some extent all LTCs risk being neglected during national emergencies and pandemics, but certain LTCs and groups have been highlighted in the literature as points for particular focus:
  - **those living in higher levels of deprivation who will require more support**
  - **children and adolescents with LTCs**
  - **people in chronic care facilities**
  - **people dependent on technology for disease management**
  - **people who are oxygen dependent**
  - **people dependent on ventricular assist devices**
  - **people on chronic dialysis**
  - **people who are immunosuppressed**
  - **transplant patients**
  - **end-stage chronic disease**
  - **pregnancy**
  - **those with BMI ≥40 kg/m2.**

Non Covid-related diseases in LT care facilities: what can we expect?

Reduced quality and safety of care

Increased NON-Covid morbidity and mortality due to:

- ✓ Cancelation of routine follow-up
- ✓ Delay or avoidance of hospital care because of concerns about Covid-19 contamination of the facility, disruption in medical trasports
- ✓ Healthcare workforce diversion or shortage due to occupational illness
- ✓ Problems with medications supplies
- ✓ Social isolation and loneliness

Reduced quality and safety of care

Adverse Events in Italian Nursing Homes During the COVID-19 Epidemic: A National Survey

Flavia L. Lombardo[1], Emanuela Salvi[2], Eleonora Lacorte[1], Paola Piscopo[3], Flavia Mayer[1], Antonio Ancidoni[1], Giulia Remoli[4], Guido Bellomo[1], Gilda Losito[5], Fortunato D'Ancona[6], Marco Canevelli[1,4], Graziano Onder[7], Nicola Vanacore[1] and The Italian National Institute of Health Nursing Home Study Group*

frontiers in Psychiatry

SURVEY	
Time	03.24.2021-05.05.2021
Respondents	1356/3292 NHs (41.2%)
Total EAs reported	2000
At least 1 EAs	444/1356 NHs

TABLE 4 | Crude and adjusted ORs by univariate and multivariate logistic model, estimating the association with the occurrence of adverse events in nursing home (NHs).

Variables	Crude OR			Adjusted OR[a]		
	OR_{cr}	p-value	95%CI	OR_{adj}[a]	p-value	95%CI
Lack of personnel (Y vs N)	1.38	0.010	1.08–1.77	0.96	0.786	0.71–1.29
Difficulty in isolating (Y vs N)	1.42	0.008	1.09–1.85	1.21	0.227	0.89–1.63
Number of beds (upper vs below the median*)	1.74	<0.001	1.38–2.21	1.57	0.002	1.17–2.09
Increased use of psychoactive drugs (Y vs N)	2.09	0.002	1.31–3.32	1.80	0.032	1.05–3.07
Physical restraints (Y vs N)	2.37	<0.001	1.83–3.08	1.97	<0.001	1.47–2.64
COVID-19 spreading (Y vs N)	1.57	<0.001	1.22–2.01	1.08	0.663	0.77–1.50
Deaths with influenza-like symptoms (Y vs N)	1.66	<0.001	1.32–2.09	1.00	0.990	0.73–1.36
Hospitalization with influenza-like symptoms (Y vs N)	2.10	<0.001	1.66–2.65	1.73	<0.001	1.28–2.32
Geographic Region (vs South)						
North-West	3.78	<0.001	2.21–6.48	3.59	<0.001	1.81–7.08
North-East	3.51	<0.001	2.01–6.14	2.90	0.003	1.45–5.81
Centre	3.45	<0.001	1.97–6.03	4.02	<0.001	2.01–8.04

[a]*Adjusted for all the variables listed in the table.*
**the median of beds per facility was 60 beds.*

Non- Covid19 Mortality in nursing home -1

During the pandemic, deaths from non–COVID-19 causes, such as Alzheimer disease, diabetes, and heart disease, also increased markedly, mostly among older adults contributing to reported excess deaths.

In US stronger state COVID-19 restrictions were associated with heightened risk of non-COVID-19 mortality among nursing home residents.

It should be weighted the health benefits of more restrictive social distancing orders against the negative health consequences due to sustained social disconnectedness.

Although the exact balance is largely unknown to us, the recent availability of coronavirus vaccines may make feasible less restrictive shelter-in-place rules for nursing home residents during the remainder of the pandemic.

Li Y, Cheng Z, Cai X, Mao Y, Temkin-Greener H. Association of state social distancing restrictions with nursing home COVID-19 and non-COVID-19 outcomes. medRxiv [Preprint]. 2021 Feb

Non- Covid19 Mortality in nursing home -2

Prof. H. Stephen Kaye
Institute of Health & Aging
San Francisco
California

He analyzed data from 15,000 facilities finding that for every two COVID-19 victims in long-term care, there is another who died prematurely of other causes.

Those “excess deaths” beyond the normal rate of fatalities in nursing homes could total more than 40,000 since March.

Non- Covid19 Mortality in nursing home -2

Table 5
All deaths notified with non-Covid-19 natural death excess March–June 2015–20.

DEATHS	2015	2016	2017	2018	2019	Avg. 2015-19	2020 with excess
MARCH							
Total deaths	51	58	36	55	51	50	65
Autopsies	10	18	5	11	12	11	10
Non-natural	4	7	1	5	6	5	4
Covid-19	0	0	0	0	0	0	4
Other Natural (non-Covid-19)	47	51	35	50	45	45	57 (127%) Excess 12 (27%) P-score = 0.27
APRIL							
Total deaths	52	32	30	51	42	41	188
Autopsies	16	9	10	12	12	12	12
Non-natural	4	3	1	5	6	4	4
Covid-19	0	0	0	0	0	0	110
Other Natural (non-Covid-19)	48	29	29	46	37	37	74 (200%) Excess 37 (100%) P-score = 1.00
MAY							
Total deaths	44	42	40	34	53	43	70
Autopsies	9	11	9	13	12	11	11
Non-natural	5	3	1	5	5	4	5
Covid-19	0	0	0	0	0	0	19
Other Natural (not Covid-19)	39	39	39	29	48	39	46 (118%) Excess 7 (18%) P-score = 0.18
JUNE							
Total deaths	36	47	37	43	44	41	56
Autopsies	7	18	8	15	12	12	16
Non-natural	2	4	1	7	4	3	5
Covid-19	0	0	0	0	0	0	6
Other Natural (not Covid-19)	34	43	37	36	40	38	45 (118%) Excess 7 (18%) P-score = 0.18
MARCH to JUNE							
Total deaths	183	179	143	183	190	176	377
Autopsies	42	56	32	51	48	46	49
Non-natural	15	17	4	22	21	16	18
Covid-19	0	0	0	0	0	0	139
Other Natural (not Covid-19)	168	162	139	161	169	160	220 (138%) Excess 60 (38%) P-score = 0.38

Ireland, District of Kildare

The excess mortality seen over March to June 2020 collectively due to natural causes but not attributed to Covid-19 may have been due to:

- an underdiagnosis of Covid-19 related deaths (non-respiratory symptoms not recognised, atypical presentations etc.);
- other Covid-19 linked morbidities and mortalities (such as acute myocardial infarction, increased coagulopathy with effects on major organs, acute renal injury etc.);
- non-Covid-19 morbidities and mortalities;
- a combination of these factors requiring further examination;
- patient underuse of or reduction in general medical services.

Cusack DA. COVID-19 pandemic: Coroner's database of death inquiries with clinical epidemiology and total and excess mortality analyses in the District of Kildare March to June 2020. J Forensic Leg Med. 2020 Nov;76:102072. doi: 10.1016/j.jflm.2020.102072.

Azienda Sociosanitaria Ligure 5 ASL5

Asl5
Sistema Sanitario Regione Liguria

Our territory

Our Long Term Care Facilities

CONSORZIO CAMPO DEL VESCOVO BRUGNATO
LA MISSIONE SEZIONE COMATOSI
MISSIONE LA COMETA
R.P. CASA SERENA SP
R.P. ORCHIDEA - BORGHETTO
RP PAX ET Bonum
R.P.PICCOLE SUORE DIVINA PROVV
R.P./R.S.A. VILLA BELVEDERE
RSA FELICIA
R.S.A. LA SPEZIA
R.S.A. MAZZINI RESIDENZIALE
R.S.A. MAZZINI SEMIRESIDENZIALE
R.S.A. S. NICOLO` - LEVANTO
RSA SAN VINCENZO
R.S.A.BELVEDERE
RSA/RP PADRE SEMERIA (MINOZZI)
RSA/RP SABBADINI SZ RESIDENZIALE
SABBADINI SZ SEMIRESIDENZIALE
VILLA ANGELI DI BAGNONE TOSCANA
VILLA VERDE COMANO TOSCANA
CASA SERENA COMANO TOSCANA
VILLA ROSA ALBIANO TOSCANA
L'ASCOLI MARINA DI MASSA TOSCANA
SANATRIX AULLA TOSCANA

Outside our region

Long Term Care Facilities - ASL5

	2019	2020	Difference	Variation
Number of residents	1.871	1.212	-659	-35,2%
M/F	1299/572	883/329		
Age range				
<65	5	9	+4	+45%
65-74	102	73	-29	-28%
75-84	378	289	-89	-23,5%
85-100	1335	815	-520	-38,9%
>100	51	26	-25	-49%
Reason for admission				
Clinical issues	935	410	-525	-56%
Social issues	936	802	-134	-14,3%
Healthcare categories				
Fully dependent	689	615	-74	-10,7%
Partially dependent	133	108	-25	-18,8%
Coma	14	13	-1	-7,10%
Dementia	22	19	-3	-13,6%
Day-care service	78	47	-31	-39,7%

Less residents of about any age range, less istitutionalization for clinical issues, reduction of any healthcare category (obviously mainly day-care service)

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S.C. Governo Clinico

Long Term Care Facilities – ASL5

Hospital admissions	2019	2020	Difference	% Variation
Number	1494	828	-681	-45%
Number/100 residents	79,8	68,3	-11,5	-14.4%
In-hospital mortality absolute n.o	346	351	+5	+1,4%
In-hospital mortality/discharge	22,7%	41,8%	+19,1	+45%

Less hospital admissions from Long Term Care facilities,
But higher in-hospital mortality

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Long Term Care Facilities – ASL5

Nursing home mortality (for any cause)				
	2019	**2020**	**Difference**	**% Variation**
Number, n.o	148	137	-11	-7,4%
Number/ 100 residents	7,9	11,3	+3,4	+30,1%

Excess mortality for any cause in Long Term Care facilities

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Long Term Care Facilities – ASL5

Outpatient clinics

	2019	2020	Difference	% Variation
Total	311	81	-230	-74%
Office visits	154	35	-119	-78%
Instrumental examinations	157	46	-111	-71%

SAMPLE: only 7 Long Term Care facilities using computerized requests

Over 70% reduction of outpatients visits/instrumental examinations

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Long Term Care Facilities – ASL5

Medications expenses

	2019	2020	Difference	% Variation
Total	452.328,20€	421.600,40€	-30.727,74	-6,8%
Amount/resident	250,45€	363,44€	+112,99€	+31%

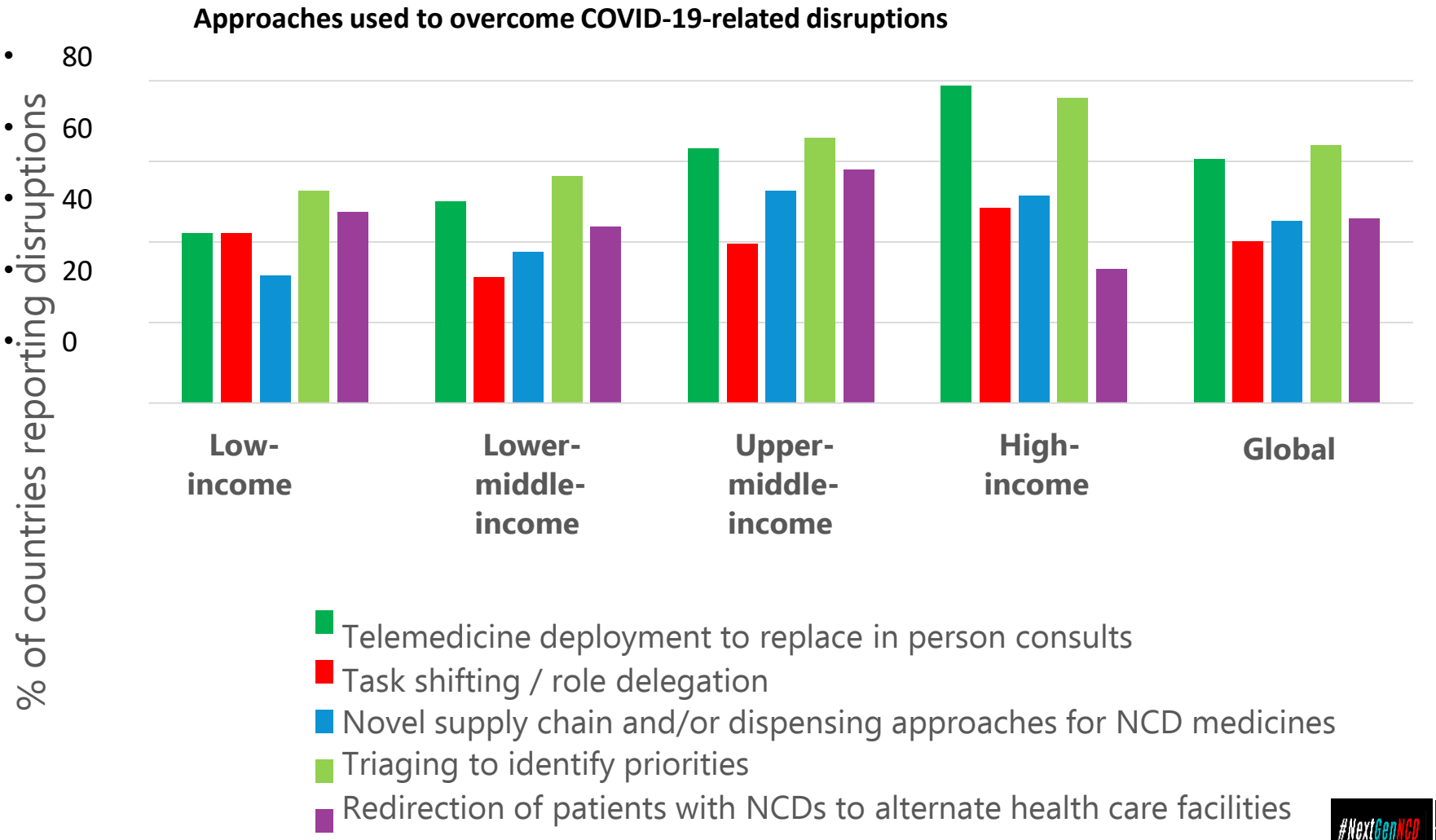
SAMPLE: only Regional Long Term Care facilities

Possible explanations:

- *Less residents, but*
- *Less hospital admissions, so much more disease episodes treated in long term care facilities*
- *4 LTCF treated also Covid-19 patients, increasing the expenses*

Telemedicine and triaging are the mitigation strategies most often used to overcome disruptions

Out of 122 countries reporting disruptions



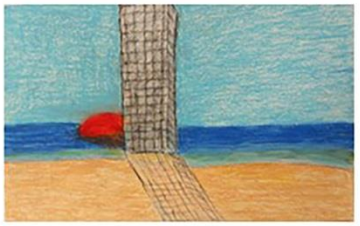
#NextGenNCD NCD DEPARTMENT BUILD BACK BETTER

Telemedicine: a potential solution

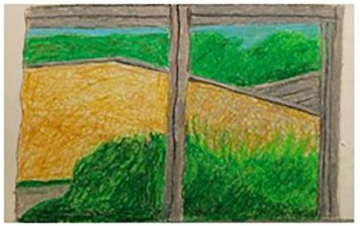
Criticalities	Effect
Cancelation of routine follow-up	√
Delay or avoidance of hospital care	√
Risk of cross contamination	√
Healthcare workforce diversion or shortage	√
Problems with medications supplies	√
Social isolation and loneliness	√
= Reduced quality and safety of care = Increased mortality and morbility	**I M P R O V E M E N T**

Using drawings to express and represent one's emotional experience during the coronavirus disease 2019 pandemic: a case report of a woman living in a nursing home

Drawing 3 – July 2020.
It was realized at the end of her preventive isolation period when she shared rehabilitative and social activities with other residents, with caution.



Drawing 2 – May-June 2020.
It was realized during her preventive isolation period, when the rehabilitative activities were resumed in presence, but she could not yet share activities with other residents.



Drawing 1 – April 2020.
It was realized during her preventive isolation period, when no rehabilitative activities were offered in presence and she could not share activities with other residents.

Psychogeriatrics, Volume: 21, Issue: 1, Pages: 118-120, First published: 24 November 2020, DOI: (10.1111/psyg.12638)

GRAZIE PER L'ATTENZIONE