LO SCARICO DEI DATI DELL'AUTOMONITORAGGIO: COME CAMBIA L'APPROCCIO TERAPEUTICO PER IL MEDICO E PER IL PAZIENTE

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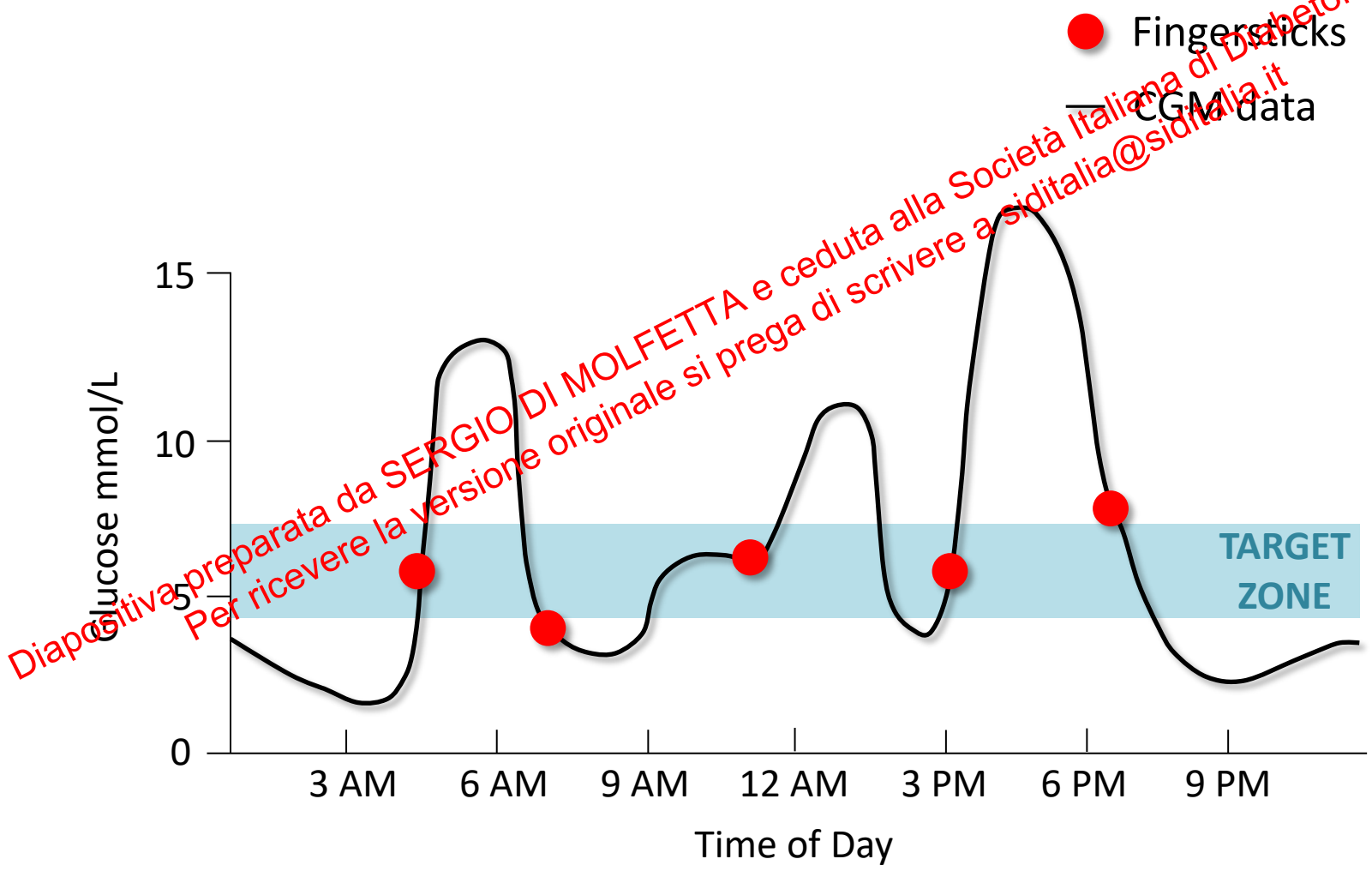
FINGERSTICKS VS CGM DATA



USE OF SELF-MONITORING DATA

From personal use…

SMBG

CGM

… to retrospective review

DIARIO GIORNALIERO DELLA GLICEMIA

GLICEMIA

data	prima di colazione	due ore dopo	prima di pranzo	due ore dopo	prima di cena	due ore dopo	prima di coricarsi	durante la notte
16/02/05	340				246	257	260	
17/02/05	213	239	239	263		285		
18/02/05	215	131		210	164	273		
19/02/05	190	181		165	175	176		
20/02/05	186		177	282	209	165		
21/02/05	252	176		104	195			
22/02/05	144	280	167	232	232			
23/02/05	114	230		153			200	
24/02/05	105	166		104		220		
26/02/05	245	171			149	201		
26/02/05	122		80		170	171	178	
27/02/05	227	152	152	105			244	
28/02/05	141		153	97	114	226		170
02/03/05	122		127	121	205		131	146
02/03/05	117		97	121	100	183	160	
03/03/05	1?		131	134	136		156	167

INSULINA

colazione	pranzo	cena	prima di coricarsi	note
	5	5	4	
4	5	5	6	
5	5	5	6	
5	5	5	6	
	5	5	6	
5	5	5	5	
5	5	5	6	
5	5	5	6	
5	5	5	6	
5	5	5	6	
5	5	5	6	
5	5	5	6	
5	5	5	6	
5	5	7	6	
5	5	7	6	
5	5	5	6	CENA FUORI MOTTAGRILL

Table 2 Under-reporting, over-reporting and concordance

Article	Type of diabetes	Under-reporting			Over-reporting			Concordance	
		Prevalence	Average in population	Range	Prevalence	Average in population	Range	Average in population	Range
Teenagers or young adults with Type 1 diabetes									
Wilson and Endres, 1986 [21]	Type 1	94%	18%	0–72%	89%	40%	0–95%	74%	Not reported
Adults with Type 1 diabetes									
Mazze *et al.*, 1984 [29]	Type 1	79%	8.3%	0–54%	74%	30.1%	0–82%	74%	0-100%
Gonder-Frederick *et al.*, 1988 [36]	Type 1	Not reported	10.3%	Not reported	43%	5.1%		75%	Not reported
Williams *et al.*, 1988 [35]	Type 1	62%	12%	0–60%	43%	13.8%	0–80%	91.7%	75–100%
Ziegler *et al.*, 1989 [32]	Type 1	71%	12%	0–45%	57.1%	19%	0–72%	77%	12.5–100%
Kalergis *et al.*, 2006 [31]	Type 1	Not reported	Time 1 45% Time 2 8%	Not reported	Not reported	Time 1 44% Time 2 24%	Not reported	Not reported	Not reported
Adults with Type 2 diabetes									
Kalergis *et al.*, 2006 [31]	Type 2	Not reported	Not reported	Not reported	Not reported	Time 1 31% Time 2 25%	Not reported	Not reported	Not reported
Diabetes in pregnancy									
Langer and Mazze, 1986 [33]	Gestational and Type 1	97%	Sample 23% Gestational 22% Type 1 25%	Not reported	74%	Sample 23% Gestational diabetes 21% Type 1 diabetes 28%	0–88%	88%	53–100%
Ladyzyński *et al.*, 1999 [34]	Type 1	Not reported	19.4%	Not reported	Not reported	31.1%	Not reported	53.9% of values matched* 26.7% changed	0–96.5% matched* 0–87.3% values changed
Kendrick *et al.*, 2005 [22]	Type 1 Type 2 and gestational diabetes	69.6%	Not reported	Not reported	80%	5.4 values added in population Type 1 diabetes 7.5 values Type 2 diabetes 3.6 values Gestational diabetes 5.1 values Diet controlled 3.2 values Insulin controlled 6.7 values	Not reported	Type 1 diabetes 63.3% Type 2 diabetes 91.5% Gestational diabetes 77.9% Diet controlled 78.8% Insulin controlled 76.6%	Not reported

*Will be less than% concordance because of method of calculation.
†Meter and diary values had to differ by > 0.55 mmol/l before it was counted as an 'error'.

Given JE et al. Diabet Med. 2013 Aug;30(8):901-13

ADVANTAGES OF ELECTRONIC SMBG DOWNLOAD AND ANALYSIS

- Objective method for reviewing information and providing feedback to patients
- Quick review of data
- Instant and accurate calculation of results (versus estimation often used when looking at logbooks)
- Ability to report data in many ways using tables, graphs, charts, or statistics
- Ability to show these reports immediately to patients for use in planning care

22. LUG 2020–18. AGO 2020

PANORAMICA

Quadro glicemico

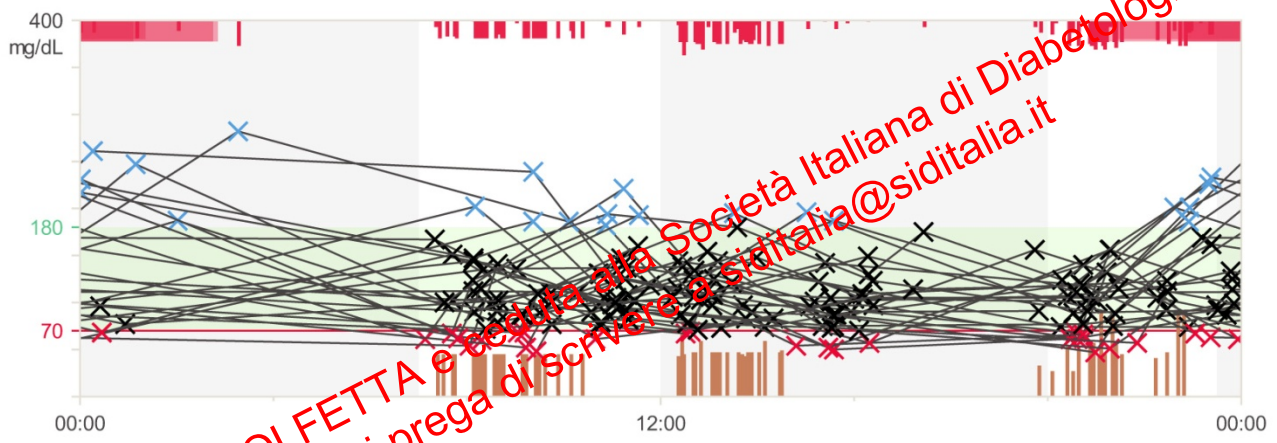
Rischio ipoglicemico alto

Glicemia media entro l'intervallo ideale

Intervallo ideale: 70–180 mg/dL

Variabilità glicemica moderata

Andamento giornaliero



Statistiche

Numero di misurazioni	183	
Misurazioni per giorno	6,5	
Glicemia media	114	mg/dL
Deviazione standard	47	mg/dL

Ipoglicemie

Soglia ipo	70	mg/dL
Ipoglicemie	28	
Ipoglicemie notturne	2	

Distribuzione

Intervallo ideale	70–180	mg/dL
sopra	12 %	
entro	73 %	
Ipoglicemie	15 %	

Insulina

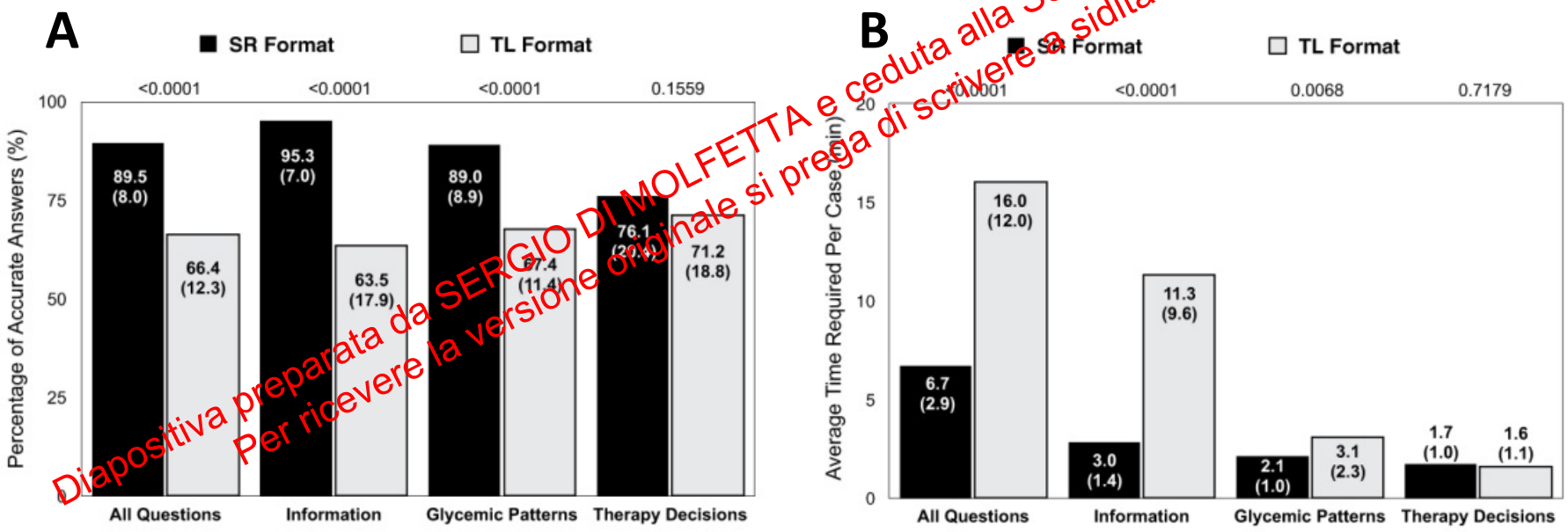
Insulina totale	24,65	U/giorno	
Insulina basale	14,37	U/giorno	(58 %)
Bolo	10,28	U/giorno	(42 %)
Frequenza bolo	4,8	/giorno	
Consiglio bolo	95	%	

22. LUG 2020–18. AGO 2020

DIARIO

Data	Notte			Colazione					Pranzo					Cena					Ora di coricarsi		
	mg/dL	g	U	mg/dL	g	U	mg/dL	U	mg/dL	g	U	mg/dL	U	mg/dL	g	U	mg/dL	U	mg/dL	g	U
Mercoledì 12.08.2020				---	50	0,3							0,6								
						2,5	182	0,9													
Giovedì 13.08.2020				202					78					57					109		
				---	50	1,8			---	51	3,2			112	52	3,3					
						2,5	85		---	33	2,1	73									
Venerdì 14.08.2020				72					71					118							
				---	50	2,5	82		---	51	3,2	94		186		1,5					
Sabato 15.08.2020				68					103					88							
				109	50	2,5	190	0,4	---	52	3,3	149	0,3	---	45	2,8					
Domenica 16.08.2020	247		2,4	100	60	2,3	221	2,1	134	51	3,2	187	1,2	111							
														---	63	3,9	233	1,9			
Lunedì 17.08.2020				147					180		1,0			91							
				---	50	0,7			---	46	2,9	123		201		1,8					
						2,5	194	0,9													
Martedì 18.08.2020	231		0,7	62																	
				115	50	2,6															
						0,6	193	1,0													

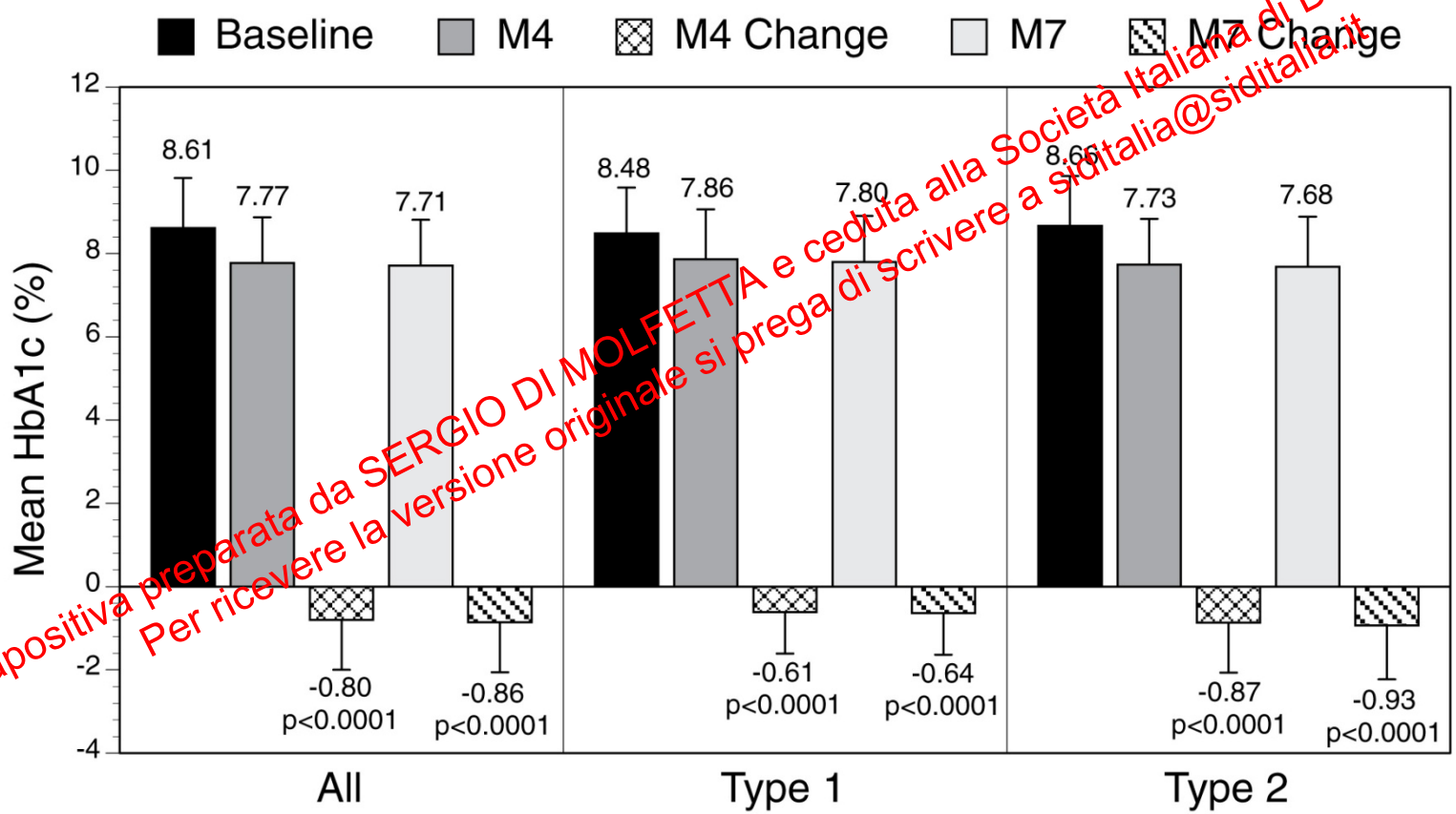
Use of Diabetes Data Management Software Reports by Health Care Providers, Patients With Diabetes, and Caregivers Improves Accuracy and Efficiency of Data Analysis and Interpretation Compared With Traditional Logbook Data: First Results of the Accu-Chek Connect Reports Utility and Efficiency Study (ACCRUES)



HCP accuracy (A) and efficiency (B) of using software report (SR) formats compared with traditional logbook (TL) data

Hinnen DA et al. J Diabetes Sci Technol. 2015 Mar;9(2):293-301

Improving the Quality of Outpatient Diabetes Care Using an Information Management System: Results From the Observational VISION Study



Weissmann J et al. J Diabetes Sci Technol. 2015 Jul 29;10(1):76-84

Table 1—Key metrics for CGM data analysis and reporting

CGM metric	Measures	ATTD consensus
1	Mean glucose	√ (calculated)
	Severe hypoglycemia*	Clinical diagnosis: event requiring assistance (level 3)
	Percentage of time in hypoglycemic ranges, mg/dL (mmol/L)	
2	Clinically significant/very low/immediate action required	<54 (<3.0) (level 2)
3	Alert/low/monitor	<70–54 (<3.9–3.0) (level 1)
	Percentage of time in target range, mg/dL (mmol/L)	
4	Default	70–180 (3.9–10.0)
	Secondary	70–140 (3.9–7.8)
	Percentage of time in hyperglycemic ranges, mg/dL (mmol/L)	
5	Alert/elevated/monitor	>180 (>10) (level 1)
6	Clinically significant/very elevated/immediate action required	>250 (>13.9) (level 2)
	Diabetic ketoacidosis*	Clinical diagnosis: ketones, acidosis, and usually hyperglycemia (level 3)
	Glycemic variability	
7	Primary glycemic variability	CV
	Stable	CV <36%,
	Unstable	CV ≥36%
	Secondary glycemic variability	SD
8	eA1C	√ (calculated)
9	Three time blocks: sleep, wake, 24 h	12:00 A.M.–6:00 A.M., 6:00 A.M.–12:00 A.M., 12 A.M.–12:00 A.M.
	Recommended data sufficiency	
10	Collection period (minimum no. of weeks)	2
11	Percentage of expected CGM readings (minimum percentage)	70–80 (10 of 14 days)
12	Episodes of hypoglycemia/hyperglycemia (minimum no. of minutes) (with beginning and end of episode defined)	15 min
13	Area under the curve	√ (calculated)
14	Risk of hypoglycemia and hyperglycemia	LBGI/HBGI recommended
15	Standardized CGM visualization of data	AGP recommended

*Severe hypoglycemia (level 3) and diabetic ketoacidosis (level 3) are not key CGM metrics per se. However, these conditions are included in the table because they are important clinical categories that must be assessed and documented.

√

√

Data sufficiency

Danne T et al. Diabetes Care. 2017 Dec;40(12):1631-1640

Glucose Management Indicator (GMI): A New Term for Estimating A1C From Continuous Glucose Monitoring

$$\text{GMI}\ (\%) = 3.31 + 0.02392 \times [\text{mean glucose in mg/dL}]$$

A calculator to compute GMI is available at www.jaeb.org/gmi and www.AGPreport.org/agp/links

Table 2—Explaining GMI to individuals with diabetes

GMI tells you what your approximate A1C level is likely to be, based on the average glucose level from your CGM readings for 14 or more days.

- GMI gives you the A1C level that would usually be expected from a large number of individuals with diabetes who have the same average CGM glucose level as you.
- However, your laboratory A1C might be similar to, higher than, or lower than your GMI.
  - Your GMI is calculated from your average CGM glucose, which measures glucose in interstitial fluid (under the skin) every 1–5 min.
  - Laboratory A1C is a measure of how much glucose has attached to the hemoglobin in your red blood cells over the life of each red blood cell, ~120 days.
  - Each person's red blood cells may live for a slightly different number of days, and there may be differences in factors that affect how glucose attaches to your red blood cells. Therefore, we do not expect people with the same average glucose or calculated GMI to have the exact same laboratory A1C value.
  - There also are certain medical conditions that affect the life span of red blood cells that may explain differences between the GMI and laboratory A1C, including hemoglobinopathies and hemolytic anemia.

Here is what having a difference in laboratory-measured A1C and GMI may mean:

Laboratory A1C vs. GMI	
8.0% vs. 7.8%	A1C measured from a blood test that is similar to your GMI means that your average CGM glucose level is about what would be predicted from the measured A1C. (Based on the average of values from many other people.)
8.0% vs. 7.2%	A1C measured from a blood test that is higher than your GMI means that your average CGM glucose level is lower than would be predicted from the measured A1C. (Based on the average of values from many other people.)
7.2% vs. 8.0%	A1C measured from a blood test that is lower than your GMI means that your average CGM glucose level is higher than would be predicted from the measured A1C. (Based on the average of of values from many other people.)

A difference between your laboratory measured A1C and your GMI level, while not unexpected, may be important to consider in your diabetes management. Please discuss with your health care team.

Bergenstal RM et al. Diabetes Care. 2018 Nov;41(11):2275-2280

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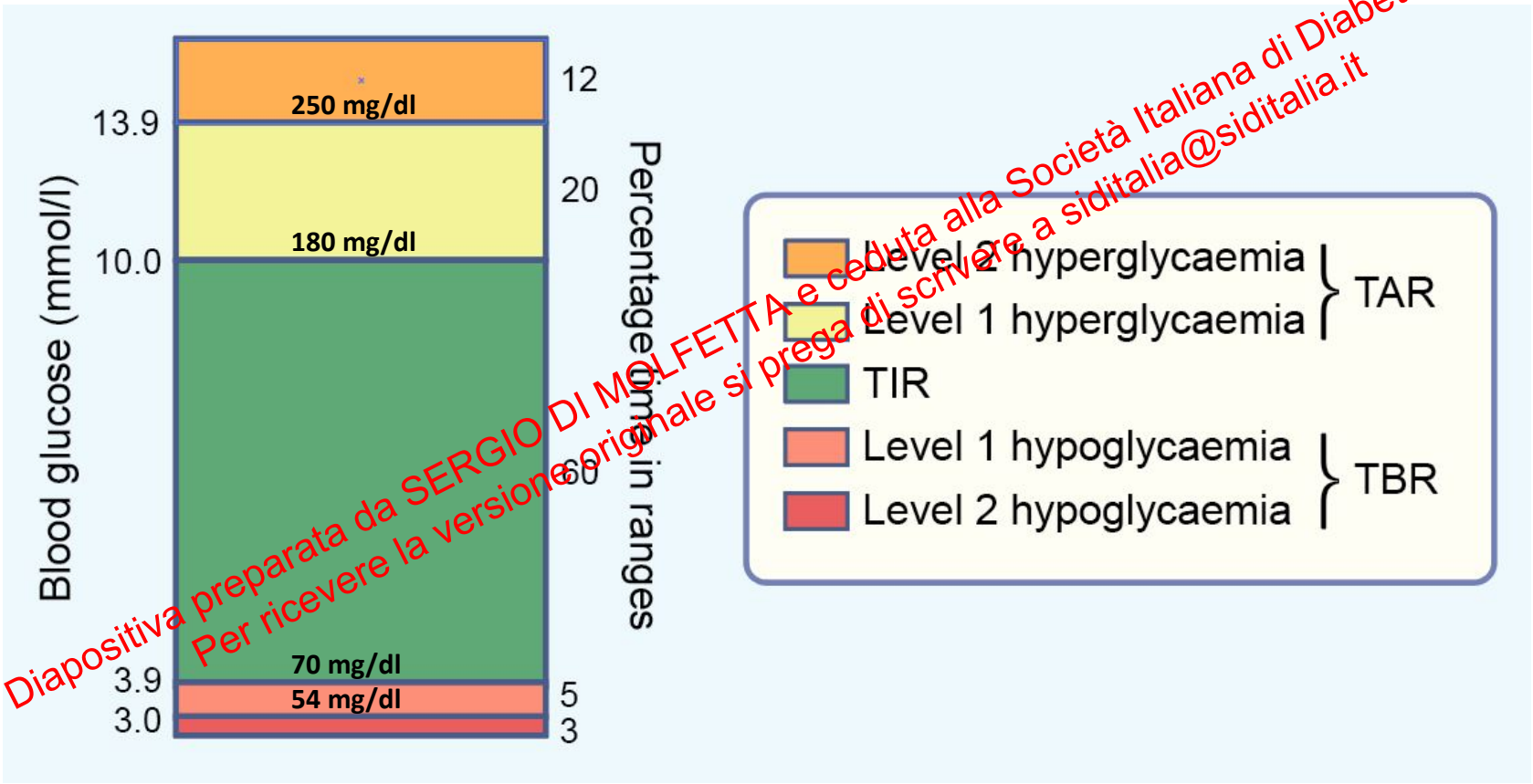
Time in ranges

Glycemic variability

Danne T et al. Diabetes Care. 2017 Dec;40(12):1631-1640

TIME IN RANGES



Advani A et al. Diabetologia. 2020 Feb;63(2):242-252

Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range

Table 5—Estimate of A1C for a given TIR level based on type 1 diabetes and type 2 diabetes studies

Beck et al. (26) (n = 545 participants with type 1 diabetes)			Vigersky and McMahon (27) (n = 1,137 participants with type 1 or type 2 diabetes)	
TIR 70–180 mg/dL (3.9–10.0 mmol/L)	A1C, % (mmol/mol)	95% CI for predicted A1C values, %	TIR 70–180 mg/dL (3.9–10.0 mmol/L)	A1C, % (mmol/mol)
20%	9.4 (79)	(8.0, 10.7)	20%	10.6 (92)
30%	8.9 (74)	(7.5, 10.2)	30%	9.8 (84)
40%	8.4 (68)	(7.1, 9.7)	40%	9.0 (75)
50%	7.9 (63)	(6.6, 9.2)	50%	8.3 (67)
60%	7.4 (57)	(6.1, 8.8)	60%	7.5 (59)
70%	7.0 (53)	(5.6, 8.3)	70%	6.7 (50)
80%	6.5 (48)	(5.2, 7.8)	80%	5.9 (42)
90%	6.0 (42)	(4.7, 7.3)	90%	5.1 (32)
Every 10% increase in TIR = ~0.5% (5.5 mmol/mol) A1C reduction			Every 10% increase in TIR = ~0.8% (8.7 mmol/mol) A1C reduction	

The difference between findings from the two studies likely stems from differences in number of studies analyzed and subjects included (RCTs with subjects with type 1 diabetes vs. RCTs with subjects with type 1 or type 2 diabetes with CGM and SMBG).

Battelino T et al. Diabetes Care. 2019 Aug;42(8):1593-1603

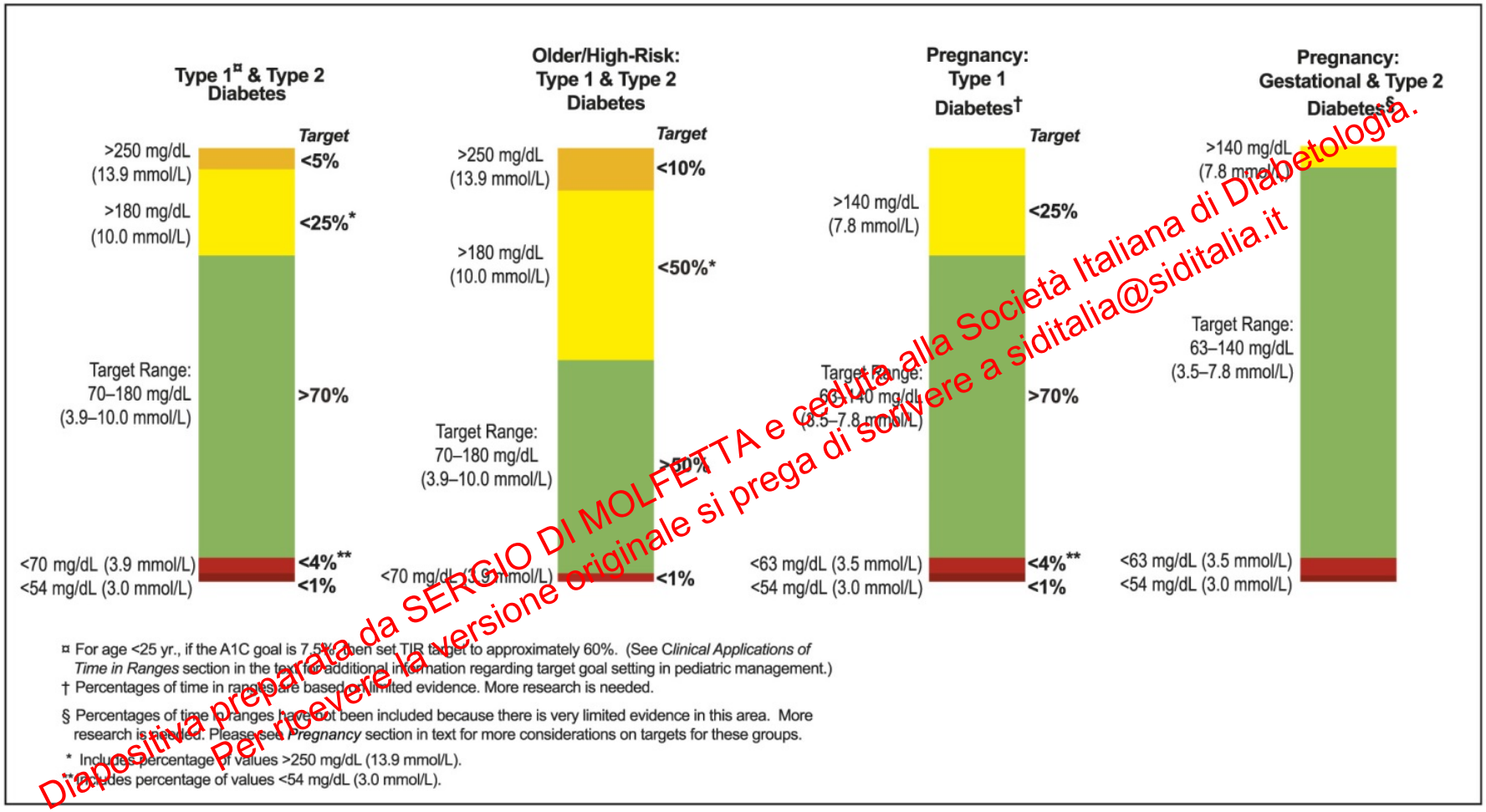


Figure 1—CGM-based targets for different diabetes populations.

Battelino T et al. Diabetes Care. 2019 Aug;42(8):1593-1603

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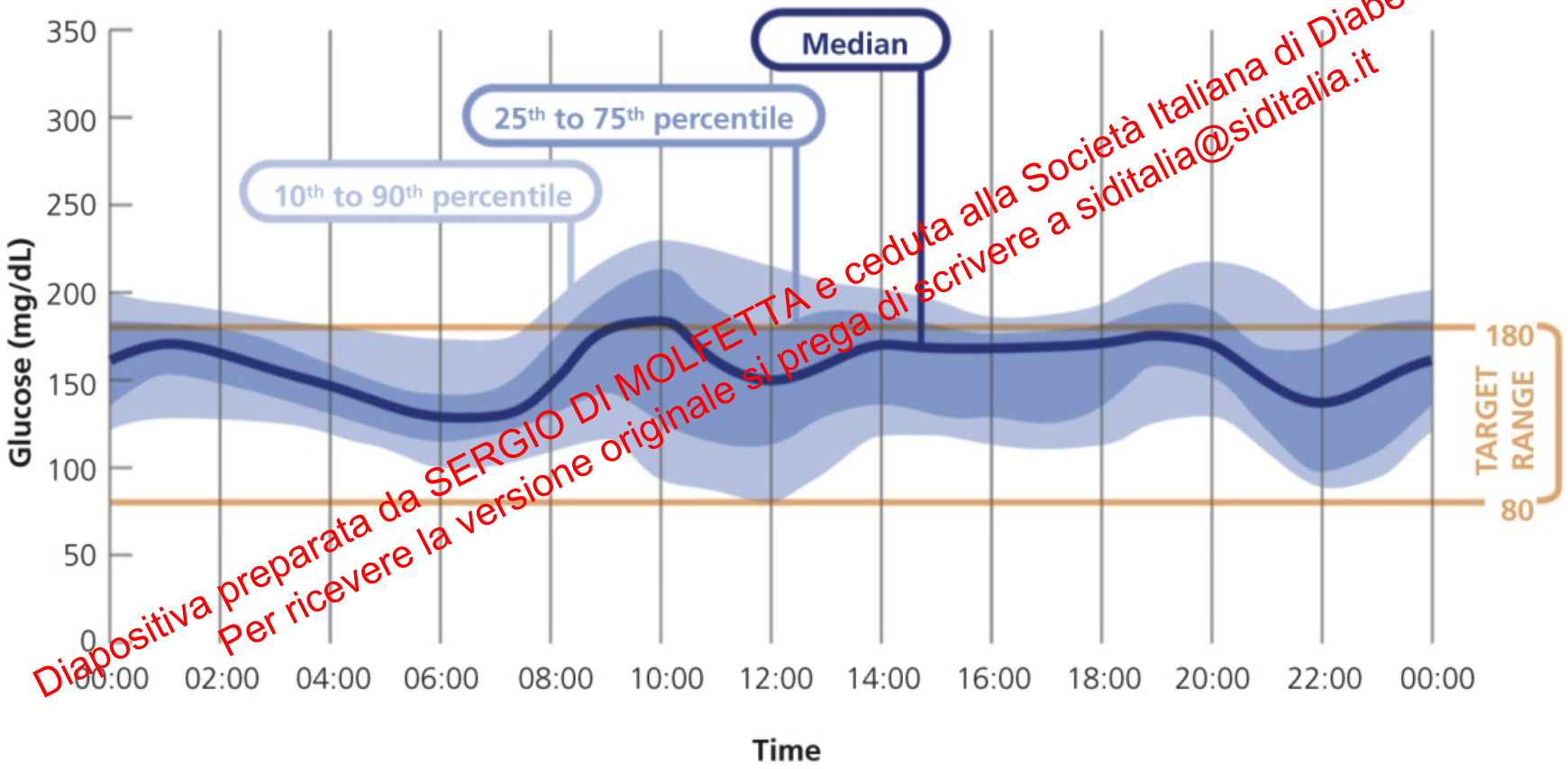
Danne T et al. Diabetes Care. 2017 Dec;40(12):1631-1640

AMBULATORY GLUCOSE PROFILE (AGP)



Matthaei S et al. Br J Diabetes Vasc Dis 2014;14:153-157

Table 2

Continuous Glucose Monitoring (CGM) Data Interpretation Using the Ambulatory Glucose Profile (AGP)[a]

Step 1	Confirm that adequate data are available. For current CGM users, a minimum of 70% of 2 weeks of data is recommended.[34] Fewer days are needed when professional CGM systems are used.
Step 2	Print out the AGP and ask patients to describe their daily self-management. When are they taking their insulin and how much? When do they wake? When do they eat? Do they exercise and, if so, what type of exercise and when are they doing it? Document this information on the AGP printout.
Step 3	Ask patients what they see in the AGP and why they think it may be important. Then listen. Interactive discussion with patients allows them to better understand how their insulin, food, and other factors affect their glucose levels and also helps clinicians identify knowledge deficits or behaviors that may not support glycemic goals.
Step 4	Look for problematic glycemic patterns in the following order of priority: • Hypoglycemia • Hyperglycemia • Wide glycemic variability Review the overall glucose profile (initial view) to determine the time of day when patterns are occurring, then review the daily graphs to double-check patterns to see if they are clustered on certain days.
Step 5	Encourage patients to reflect on what they think may be causing the problem and discuss potential solutions.
Step 6	Collaboratively develop an action plan. Make sure patients fully understand the changes they will be making and that they have the knowledge/skills to implement the plan.
Step 7	Make a copy of the marked up AGP printout for the patient and enter the original into the electronic medical record (EMR). If electronic entry is not possible, copy and paste the AGP into the EMR as a progress note.

[a]An expanded teaching tool is available at https://www.idcpublishing.com/.

Kruger DF et al. Diabetes Educ. 2019 Feb;45(1_suppl):3S-20S

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Report AGP

12 gennaio 2020 - 25 gennaio 2020 (14 Giorni)

STATISTICHE E TARGET GLUCOSIO

12 gennaio 2020 - 25 gennaio 2020	**14 Giorni**
% di tempo in cui il sensore è attivo	**100%**

Intervalli e target per	Diabete tipo 1 o tipo 2
Intervalli di glucosio Intervallo stabilito 70-180 mg/dL	**Target** % di letture (Ora/Giorno) Superiore a 70% (16h 48min.)
Inferiore a 70 mg/dL	Inferiore a 4% (58min.)
Inferiore a 54 mg/dL	Inferiore a 1% (14min.)
Superiore a 180 mg/dL	Inferiore a 25% (6h)
Superiore a 250 mg/dL	Inferiore a 5% (1h 12min.)
Ogni aumento del 5% del tempo nell'intervallo (70-180 mg/dL) è clinicamente vantaggioso.	

Valore medio del glucosio	**120** mg/dL
Indicatore di gestione del glucosio (GMI)	**6,2% o 44 mmol/mol**
Variabilità del glucosio	**35,8%**

Definito come coefficiente di variazione in percentuale (%CV); ≤36% target

TEMPO NEGLI INTERVALLI

Molto alto	>250 mg/dL	**0%** (0min.)
Alto	181 - 250 mg/dL	**10%** (2h 24min.)
Intervallo stabilito	70 - 180 mg/dL	**80%** (19h 12min.)
Basso	54 - 69 mg/dL	**7%** (1h 41min.)
Molto basso	<54 mg/dL	**3%** (43min.)

PROFILO DI GLUCOSIO AMBULATORIALE (AGP)

AGP è un riepilogo dei valori di glucosio del periodo di riferimento, con la mediana (50%) e gli altri percentili mostrati come se si fossero verificati in un solo giorno.

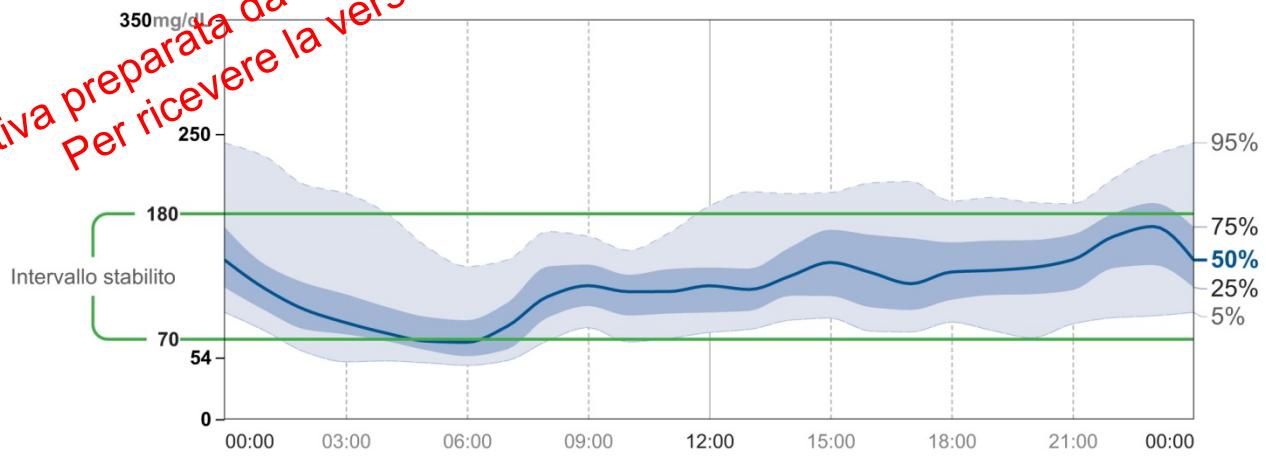

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Table 2

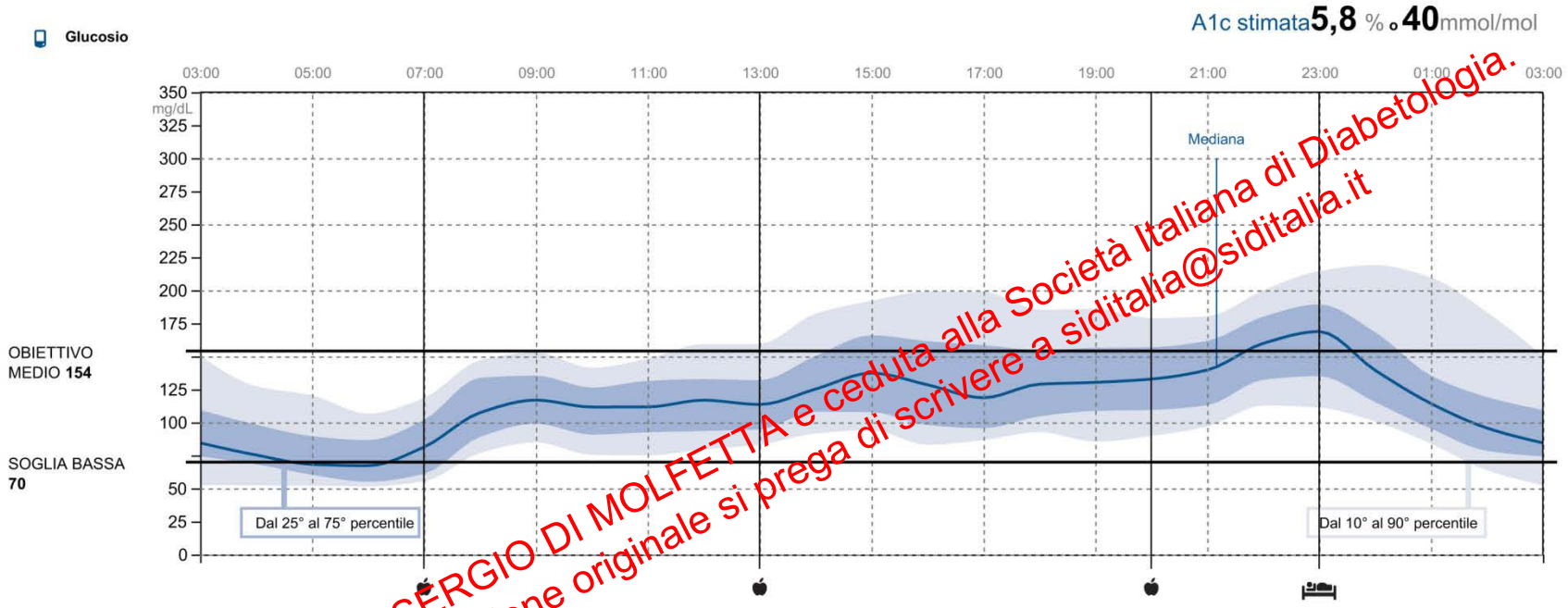
Continuous Glucose Monitoring (CGM) Data Interpretation Using the Ambulatory Glucose Profile (AGP)[a]

Step 4	Look for problematic glycemic patterns in the following order of priority: • Hypoglycemia • Hyperglycemia • Wide glycemic variability Review the overall glucose profile (initial view) to determine the time of day when patterns are occurring, then review the daily graphs to double-check patterns to see if they are clustered on certain days.
Step 5	Encourage patients to reflect on what they think may be causing the problem and discuss potential solutions.

Kruger DF et al. Diabetes Educ. 2019 Feb;45(1_suppl):3S-20S

Indicatori di profilo del glucosio

12 gennaio 2020 - 25 gennaio 2020 (14 Giorni)



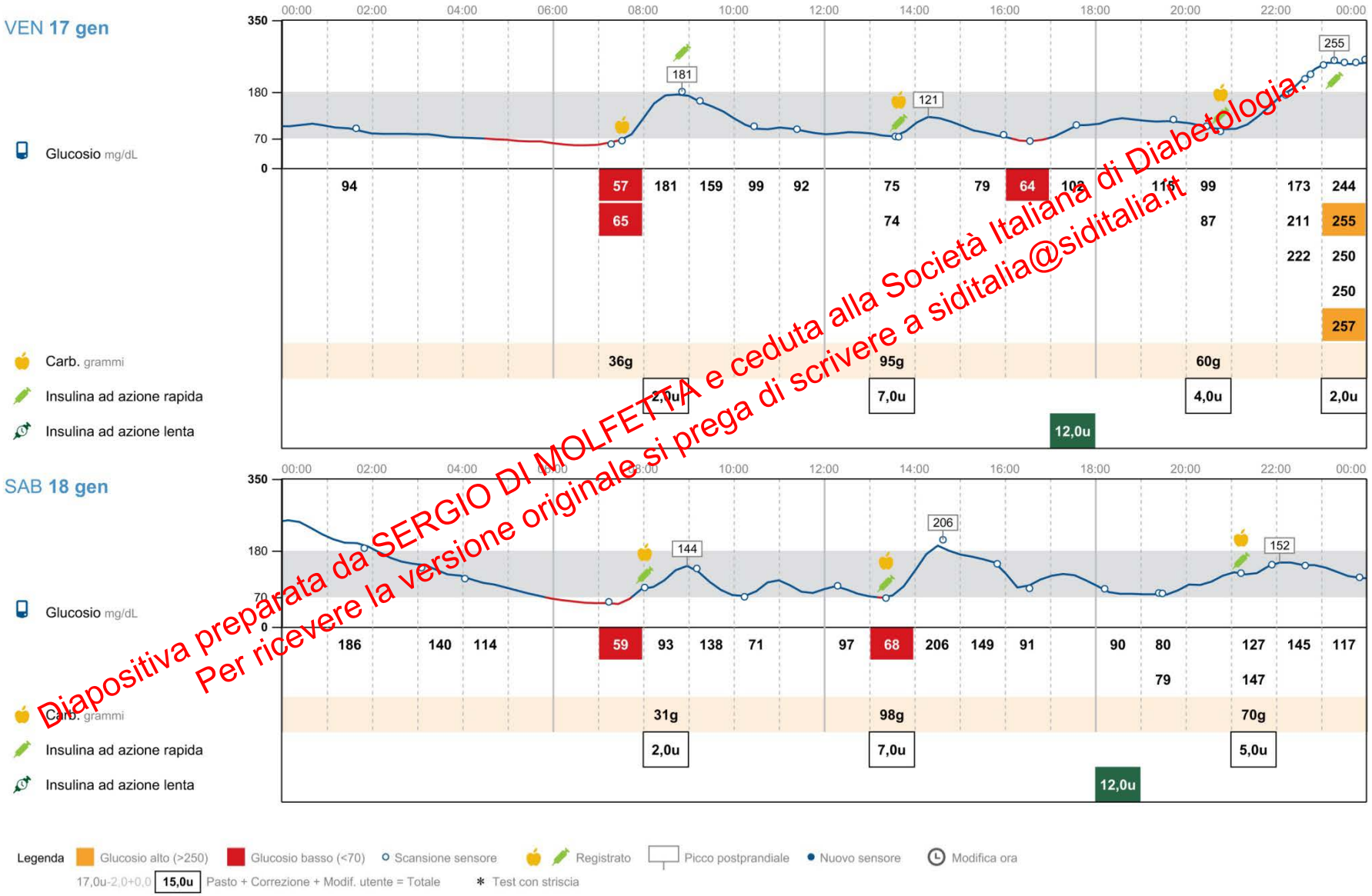
Probabilità di **GLUCOSIO BASSO**					
GLUCOSIO MEDIO Rispetto all'obiettivo	OK	OK	OK	OK	OK
VARIABILITÀ SOTTO LA MEDIA Mediana al 10° percentile	OK				

Impostazioni IMPOSTAZIONE GLUCOSIO BASSO CONSENTITO: Medio OBIETTIVO MEDIO: **154** mg/dL (A1c: 7,0% o 53 mmol/mol)

Legenda OK BASSO MODERATO ALTO PASTO RIPOSO NOTTURNO

Diario giornaliero

12 gennaio 2020 - 25 gennaio 2020 (14 Giorni)

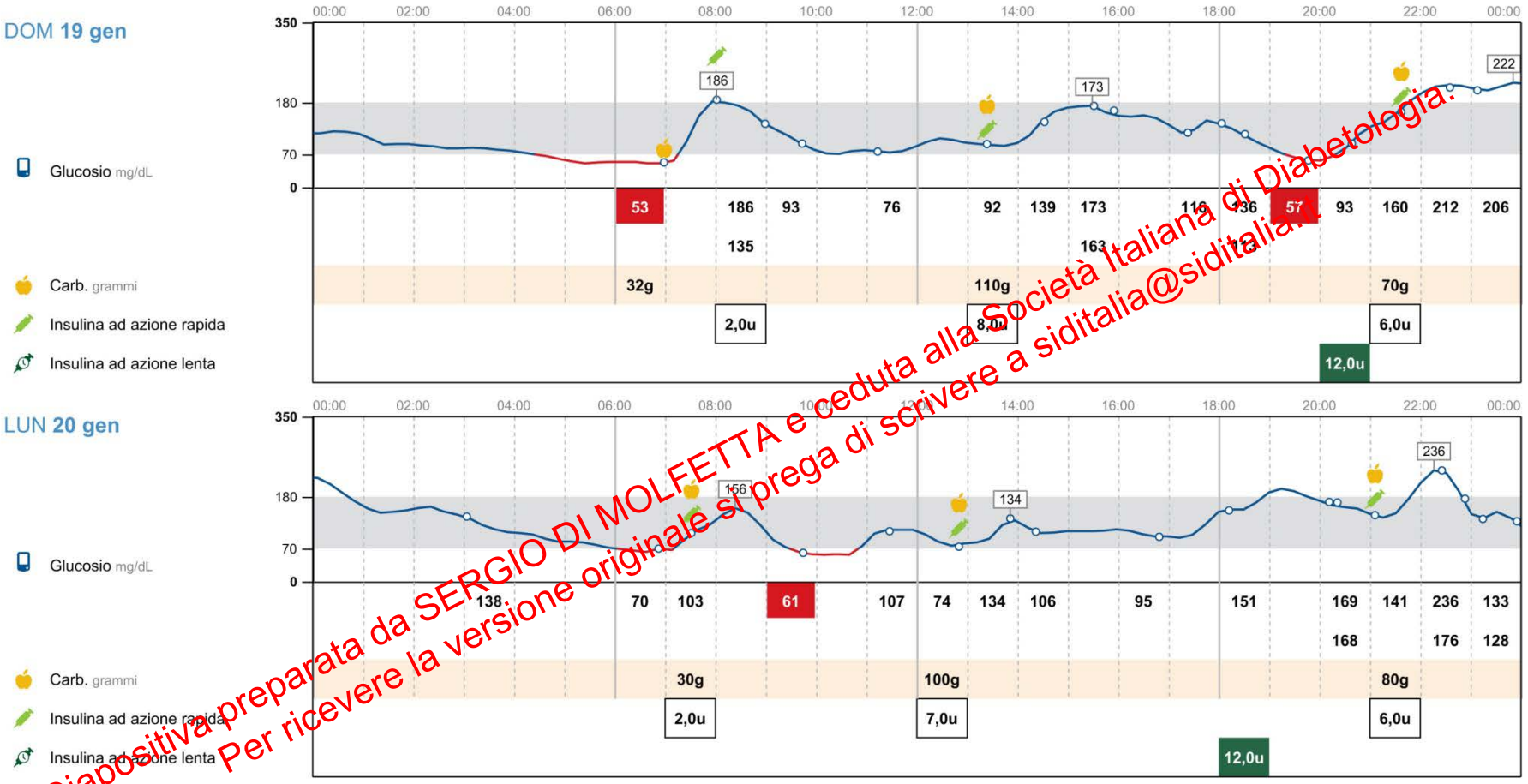


Legenda: Glucosio alto (>250) | Glucosio basso (<70) | Scansione sensore | Registrato | Picco postprandiale | Nuovo sensore | Modifica ora

17,0u-2,0+0,0 **15,0u** Pasto + Correzione + Modif. utente = Totale | * Test con striscia

Diario giornaliero

12 gennaio 2020 - 25 gennaio 2020 (14 Giorni)



Legenda: Glucosio alto (>250) | Glucosio basso (<70) | Scansione sensore | Registrato | Picco postprandiale | Nuovo sensore | Modifica ora

17,0u-2,0+0,0 **15,0u** Pasto + Correzione + Modif. utente = Totale | * Test con striscia

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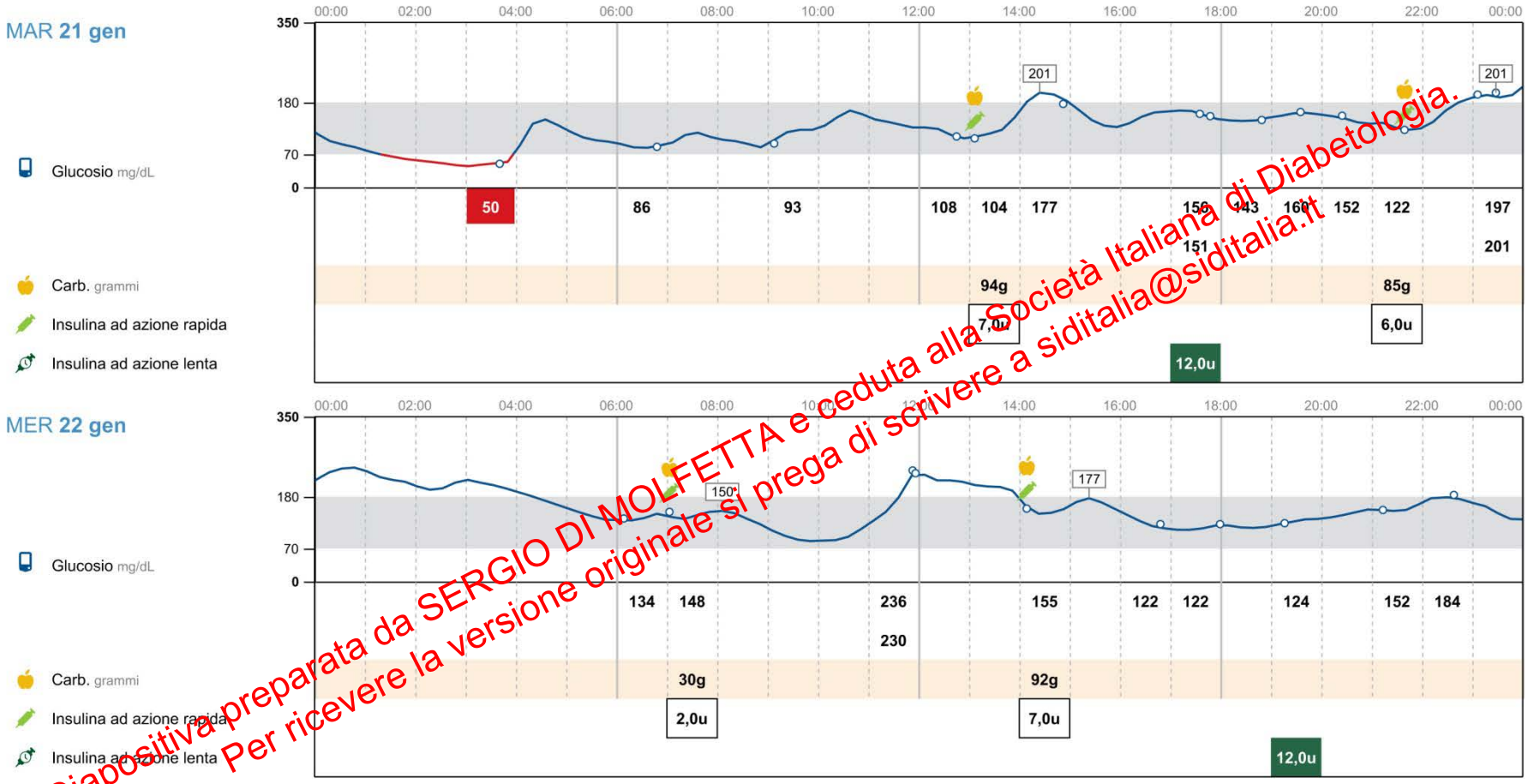

Legenda: Glucosio alto (>250) · Glucosio basso (<70) · Scansione sensore · Registrato · Picco postprandiale · Nuovo sensore · Modifica ora

17,0u-2,0+0,0 **15,0u** Pasto + Correzione + Modif. utente = Totale · * Test con striscia

Diario giornaliero

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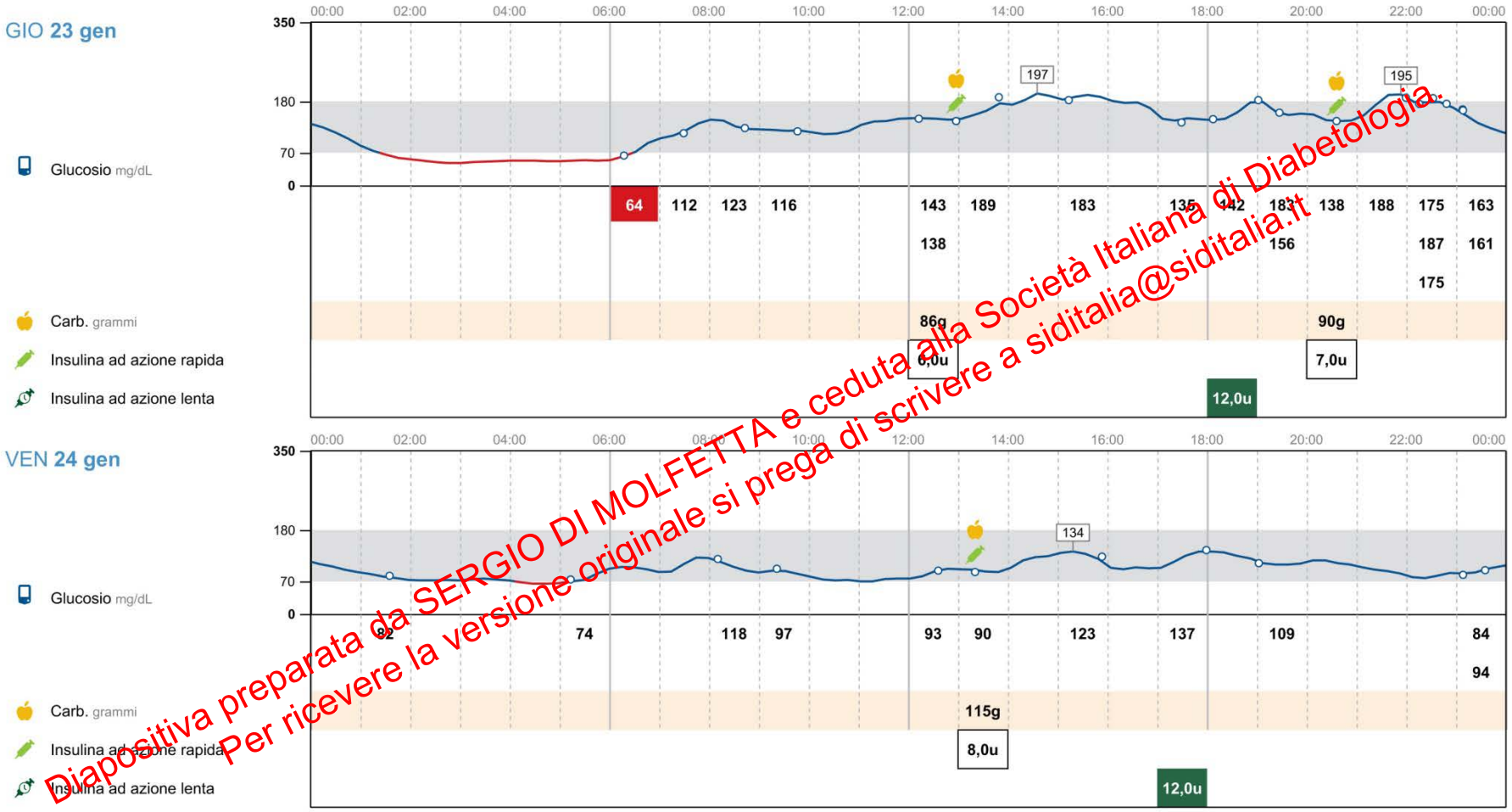


Legenda Glucosio alto (>250) Glucosio basso (<70) Scansione sensore Registrato Picco postprandiale Nuovo sensore Modifica ora

17,0u-2,0+0,0 **15,0u** Pasto + Correzione + Modif. utente = Totale * Test con striscia

Table 2

Continuous Glucose Monitoring (CGM) Data Interpretation Using the Ambulatory Glucose Profile (AGP)[a]

Step 6	Collaboratively develop an action plan. Make sure patients fully understand the changes they will be making and that they have the knowledge/skills to implement the plan.
Step 7	Make a copy of the marked up AGP printout for the patient and enter the original into the electronic medical record (EMR). If electronic entry is not possible, copy and paste the AGP into the EMR as a progress note.

[a]An expanded teaching tool is available at https://www.idcpublishing.com/.

Down-titration of basal insulin!

Kruger DF et al. Diabetes Educ. 2019 Feb;45(1_suppl):3S-20S

The Digital/Virtual Diabetes Clinic: The Future Is Now—Recommendations from an International Panel on Diabetes Digital Technologies Introduction

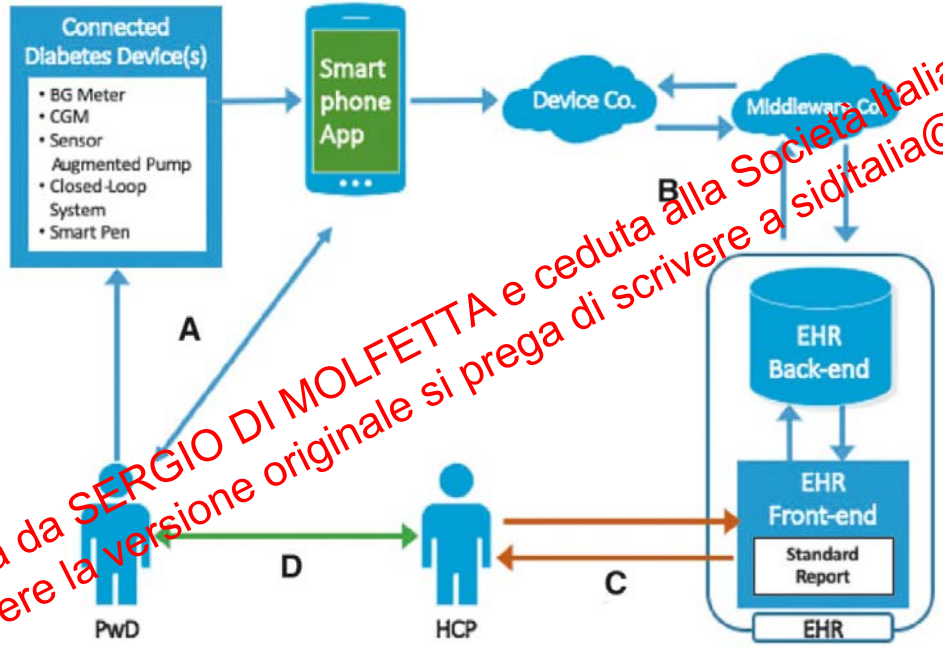
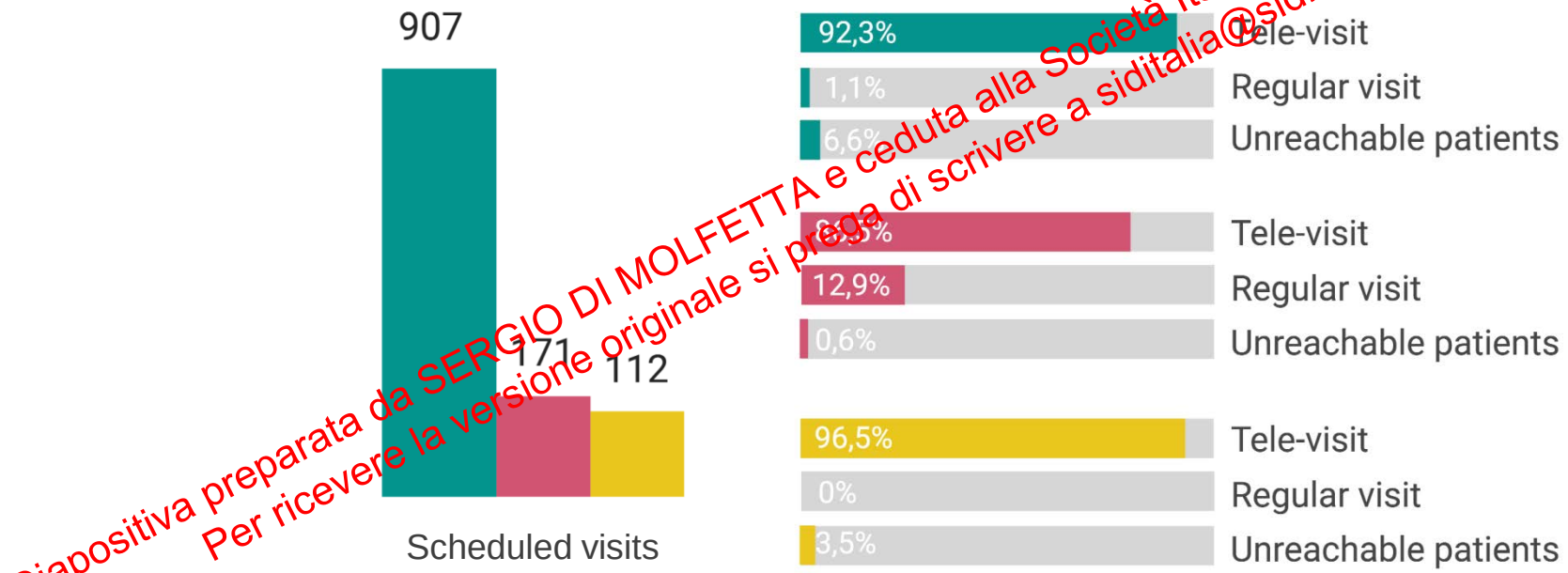


FIG. 1. Conceptual representation of D/VDC information flow and feedback. **(A)** Data from the device(s) are automatically transmitted to a smartphone app, which provides immediate feedback to the user. **(B)** The app transfers the data to the EHR via cloud-based, device-specific software and middleware. **(C)** HCP then access the data, which are presented in standardized formats. HCP enter any therapy changes into the EHR and **(D)** contact the patient to set up an in-clinic visit or schedule a remote consultation via one of the telemedicine tools. D/VDC, digital/virtual diabetes clinic; EHR, electronic health record; HCP, health care professional.

Phillip M et al. Diabetes Technol Ther. 2020 Sep 9

DIABETES MANAGEMENT DURING COVID-19 LOCKDOWN



T2DM, type 2 diabetes; T1DM, type 1 diabetes; GDM, gestational diabetes mellitus; DM&Tech, diabetes and technologies

Reduction of hypoglycaemia, lifestyle modifications and psychological distress during lockdown following SARS-CoV-2 outbreak in type 1 diabetes

	Baseline (T0)	Lockdown (T1)	Difference (T1-T0)	p
MSG (mg/dl)	157.6 ± 23.7	159.9 ± 26.9	2.3 ± 15.0	0.29
GMI (%)	7.1 ± 0.6	7.1 ± 0.6	0.06 ± 0.3	0.26
CV (%)	38.3 ± 7.4	35.1 ± 6.1	−3.1 ± 5.2	0.0001
TIR (%)	60.8 ± 14.1	60.8 ± 17.4	0.0 ± 9.7	0.9
TAR (%)	32.8 ± 14.6	34.6 ± 17.9	1.79 ± 9.8	0.21
TBR (%)	6.3 ± 5.5	4.5 ± 3.3	−1.8 ± 4.5	0.008
Hypoglycaemic events (N)	10.0 [5.0, 17.0]	8.5 [6.0, 13.0]	−2.0 [−5, 0]	0.0024
Scans/day (N)	11.0 [8.8, 15.0]	13.0 [9.0, 17.0]	1.0 [−1.0, 0]	0.28

Note: Normally distributed data are expressed as mean ± standard deviation and non-normally distributed data are expressed as median [interquartile range]. Differences between paired groups of normally distributed data have been assessed with Student's *t*-test, whereas differences between paired groups of non-normally distributed data have been assessed with the Mann–Whitney test.

Abbreviations: CV, coefficient of variation; GMI, glucose management indicator; MSG, mean sensor glucose; TAR, time above target glucose range; TBR, time below target glucose range; TIR, time in range (70–180 mg/dl).

Caruso I, Di Molfetta S et al. Diabetes Metab Res Rev. 2020 Sep 11:e3404

Report finale della web survey intitolata «Indagine AMD sulle pratiche dei servizi di diabetologia inerenti il monitoraggio domiciliare della glicemia e la valutazione dell'adesione del paziente al trattamento»

11. Scarica abitualmente i dati del glucometro?

12. Indicativamente, in quale percentuale di pazienti è solito scaricare i dati del glucometro?

MEDIA (DS)
43.1 (35.6)

Rossi MC et al. JAMD 2016;19(3):195-205

14. Riporti in tabella in quale percentuale di pazienti è solito scaricare i dati del glucometro in base alla categoria terapeutica:

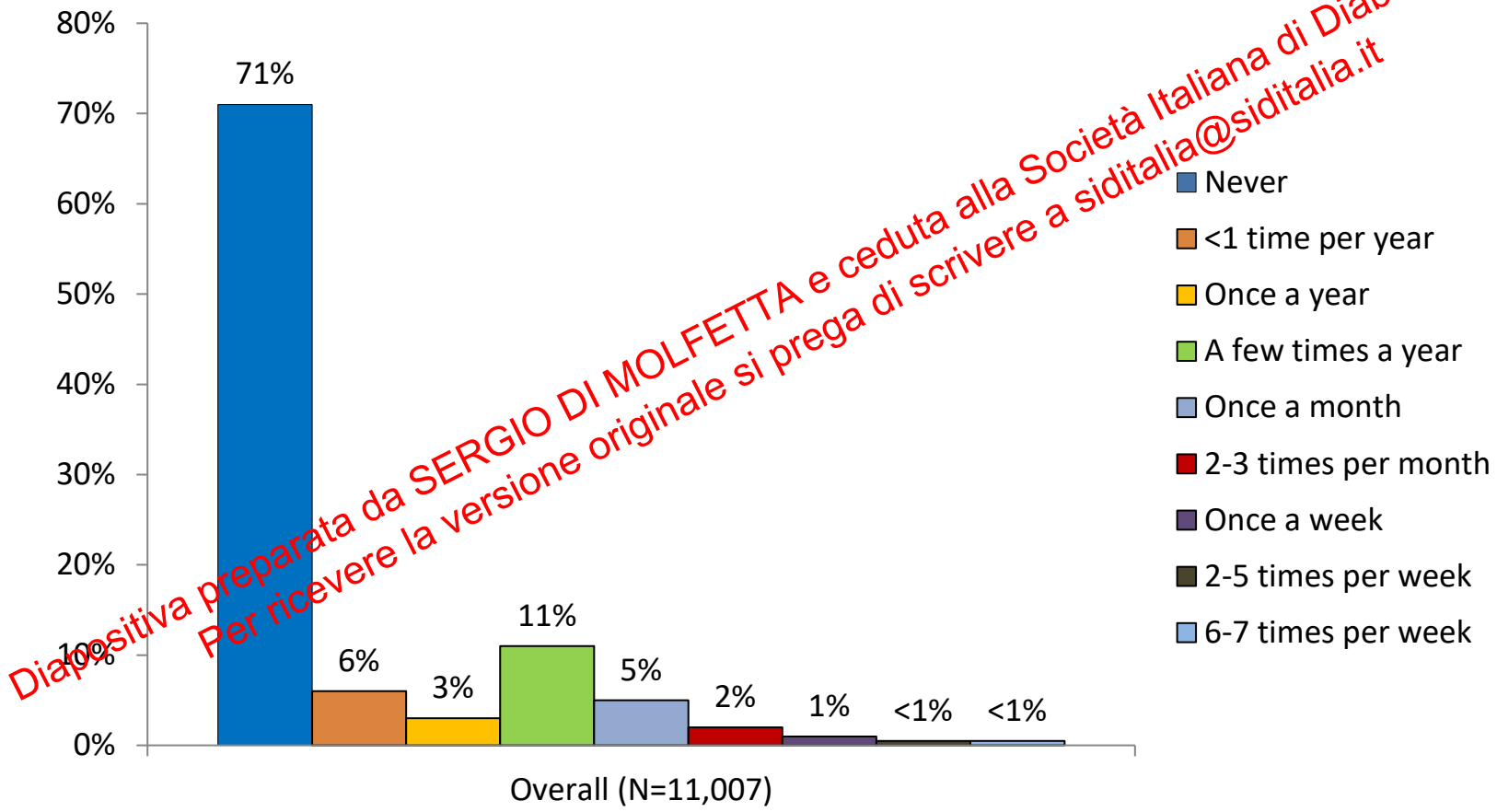
TIPOLOGIA PAZIENTI	MEDIA (DS)
DM1 - INIEZIONI MULTIPLE DI INSULINA	66.2 (39.0)
DM1 - MICROINFUSORE	61.2 (44.3)
DM2 - SOLO DIETA	10.5 (26.8)
DM2 - SOLO IPORALI/GLP-ANALOGHI SENZA SECRETAGOGHI	25.8 (33.9)
DM2 - SOLO IPORALI/GLP-ANALOGHI INCLUSI SECRETAGOGHI	39.1 (40.0)
DM2 - IPORALI + INSULINA	47.7 (41.9)
DM2 - INSULINA	58.3 (39.3)

15. È solito scaricare i dati dei glucometri:

	%
SOLO SULLA CARTELLA CLINICA INFORMATIZZATA	29.0
SOLO UTILIZZANDO I SOFTWARE FORNITI CON I DIVERSI MODELLI DI GLUCOMETRO	12.9
SIA SULLA CARTELLA CLINICA INFORMATIZZATA CHE UTILIZZANDO I SOFTWARE FORNITI CON I DIVERSI MODELLI DI GLUCOMETRO	22.6
SULLA CARTELLA CLINICA INFORMATIZZATA O UTILIZZANDO I SOFTWARE, DIPENDE DAL MODELLO DI GLUCOMETRO	22.6
NON SCARICO MAI I DATI DEI GLUCOMETRI	12.9

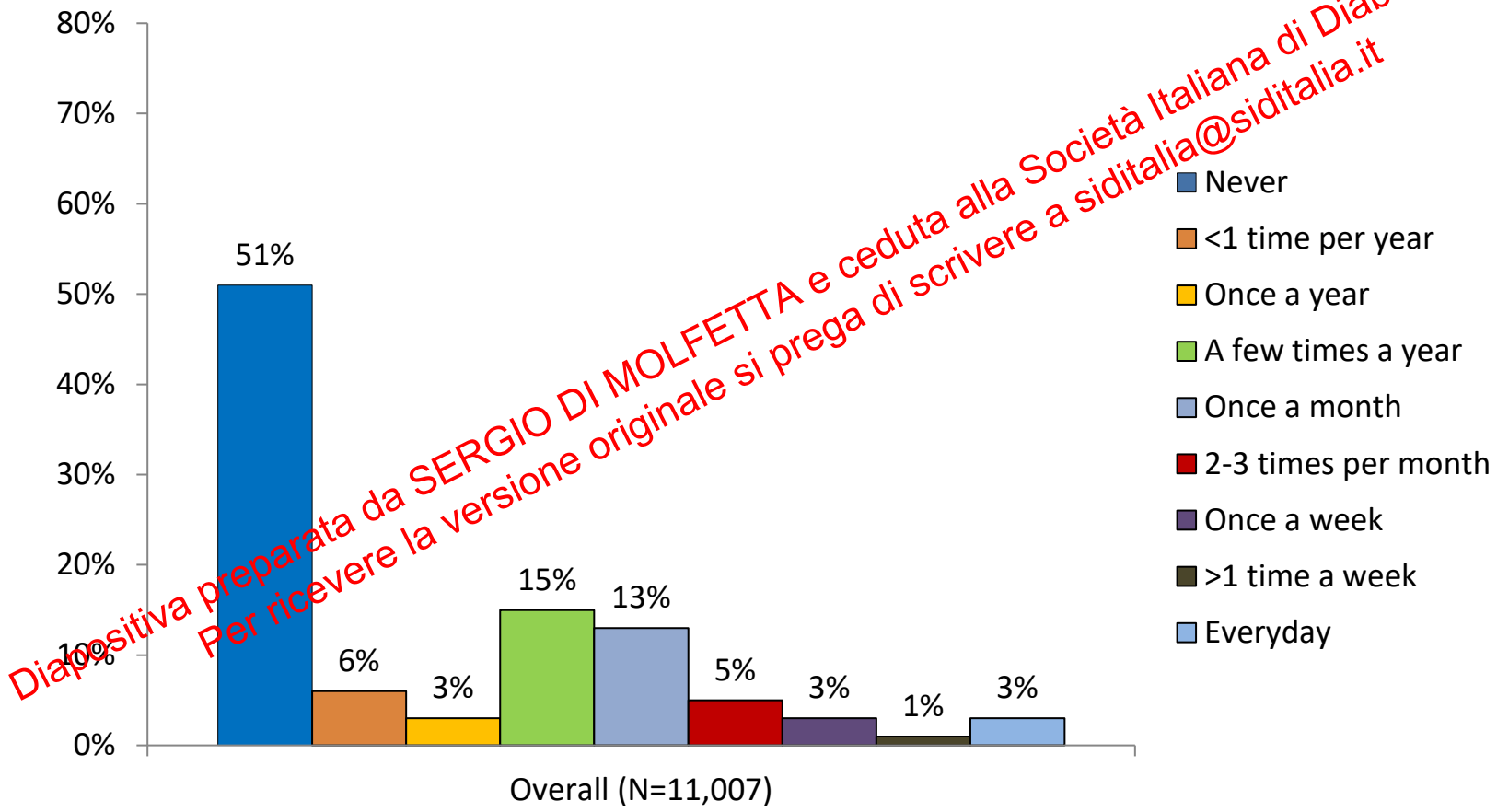
Rossi MC et al. JAMD 2016;19(3):195-205

FREQUENCY OF DOWNLOADING BG METER OUTSIDE DOCTOR'S OFFICE



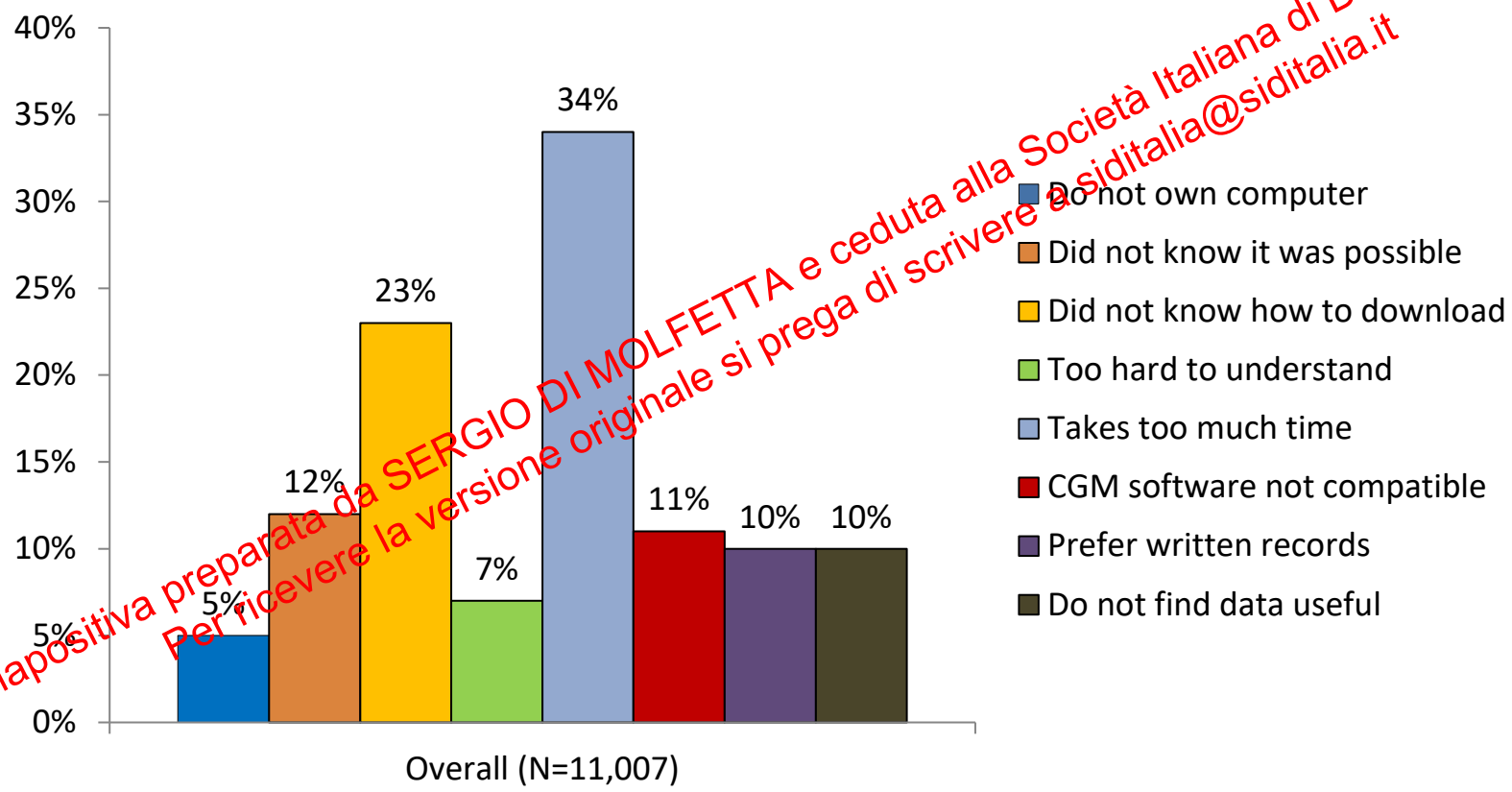
Foster NC et al. Diabetes Technol Ther. 2019 Feb;21(2):66-72

FREQUENCY OF DOWNLOADING CGM DATA OUTSIDE DOCTOR'S OFFICE



Foster NC et al. Diabetes Technol Ther. 2019 Feb;21(2):66-72

REASON FOR INFREQUENT CGM DOWNLOADING (<ONCE A MONTH)



Foster NC et al. Diabetes Technol Ther. 2019 Feb;21(2):66-72

POSSIBLE SOLUTIONS

- Decrease burden of data download through having seamless or near-seamless uploading of data from devices without the need to link the device to a computer via a cable
- Make the integrated insulin and glucose data be visualized in a simple and understandable way
- Make data from multiple devices (e.g., pump, BGM, CGM) be integrated so that all can be viewed together
- Empower patients with T1D and parents of young children with T1D to visualize their device data and making changes in management

Diabetes Data Management System to Improve Glycemic Control in People With Type 1 Diabetes: Prospective Cohort Study

Table 2. Fasting blood glucose, glycated hemoglobin, body weight, and total daily insulin at baseline and follow-up visit in subjects enrolled in the study and divided as No-downloader and Downloader.

Variables	Baseline	**	Follow-up	**
	No-downloader (N=33) mean (SD)	Downloader (N=30) mean (SD)	No-downloader (N=33) mean (SD)	Downloader (N=30) mean (SD)
FBG[a], mg/dL	160 (58)	150 (43)	166 (51)	143 (36)[b]
HbA_{1c}[c], %	7.85 (0.62)	7.51 (0.71)	7.95 (0.74)	7.38 (0.66)[b,d]
Body weight, kg	68.9 (13.6)	69.2 (14.7)	69.4 (13.9)	70.6 (14.4)
TDI[e], unit/day	46.3 (18.3)	47.3 (16.8)	41.9 (15.0)	40.2 (14.8)
Unit per kg body weight	0.67	0.68	0.60	0.57

[a]FBG: fasting blood glucose.

[b]P=.003 versus NDL (unpaired t test).

[c]HbA_{1c}: glycated hemoglobin.

[d]P=.045 versus baseline.

[e]TDI: total daily insulin.

** at least once from enrollment to the follow-up visit

Irace C et al. JMIR Mhealth Uhealth. 2017 Nov 21;5(11):e170

A Minority of Patients with Type 1 Diabetes Routinely Downloads and Retrospectively Reviews Device Data

TABLE 2. COMPARISONS BETWEEN ROUTINE REVIEWERS AND NON-ROUTINE REVIEWERS OF AT LEAST ONE DEVICE

Participants, characteristic	*Routine Reviewers*	*Non-Reviewers*	P
Adults			
Number of participants	18	136	
Mean age (years)	44.9 ± 13.1	32.9 ± 16.2	0.003
Sex (% male)	44%	48%	0.29
Ethnicity (% minority status)	11%	27%	0.15
Education level (% with at least college degree)[a]	83%	66%	0.13
Insurance status (% with non-private insurance)	11%	25%	0.18
Mean duration of type 1 diabetes (years)	28.7 ± 15.5	17.2 ± 12.7	0.0006
Mean A1c (%)	7.2 ± 1.0	8.1 ± 1.6	0.03
Children			
Number of participants	50	132	
Mean age of child (years)	10.8 ± 4.0	12.3 ± 3.9	0.02
Sex of child (% male)	58%	53%	0.55
Ethnicity (% minority status)	14%	21%	0.33
Caregiver education (% with at least college degree)	75%	64%	0.17
Insurance status (% with non-private insurance)	11%	22%	0.10
Mean duration of type 1 diabetes (years)	3.7 ± 3.1	5.5 ± 3.8	0.005
Mean A1c (%)	7.8 ± 1.4	8.6 ± 1.7	0.001

Unadjusted mean ± SD values or frequencies are shown, as indicated. *P* values were obtained from *t* tests for continuous variables and χ^2 tests for dichotomous variables.

[a]Participants 18 to <26 years of age were categorized as having a college degree if they had completed at least some college.

A1c, hemoglobin A1c.

Wong JC et al. Diabetes Technol Ther. 2015 Aug;17(8):555-62