



Role of telemedicine in supporting AFRAN NCDs/CKD prevention in Africa

Zaghloul Gouda, MD

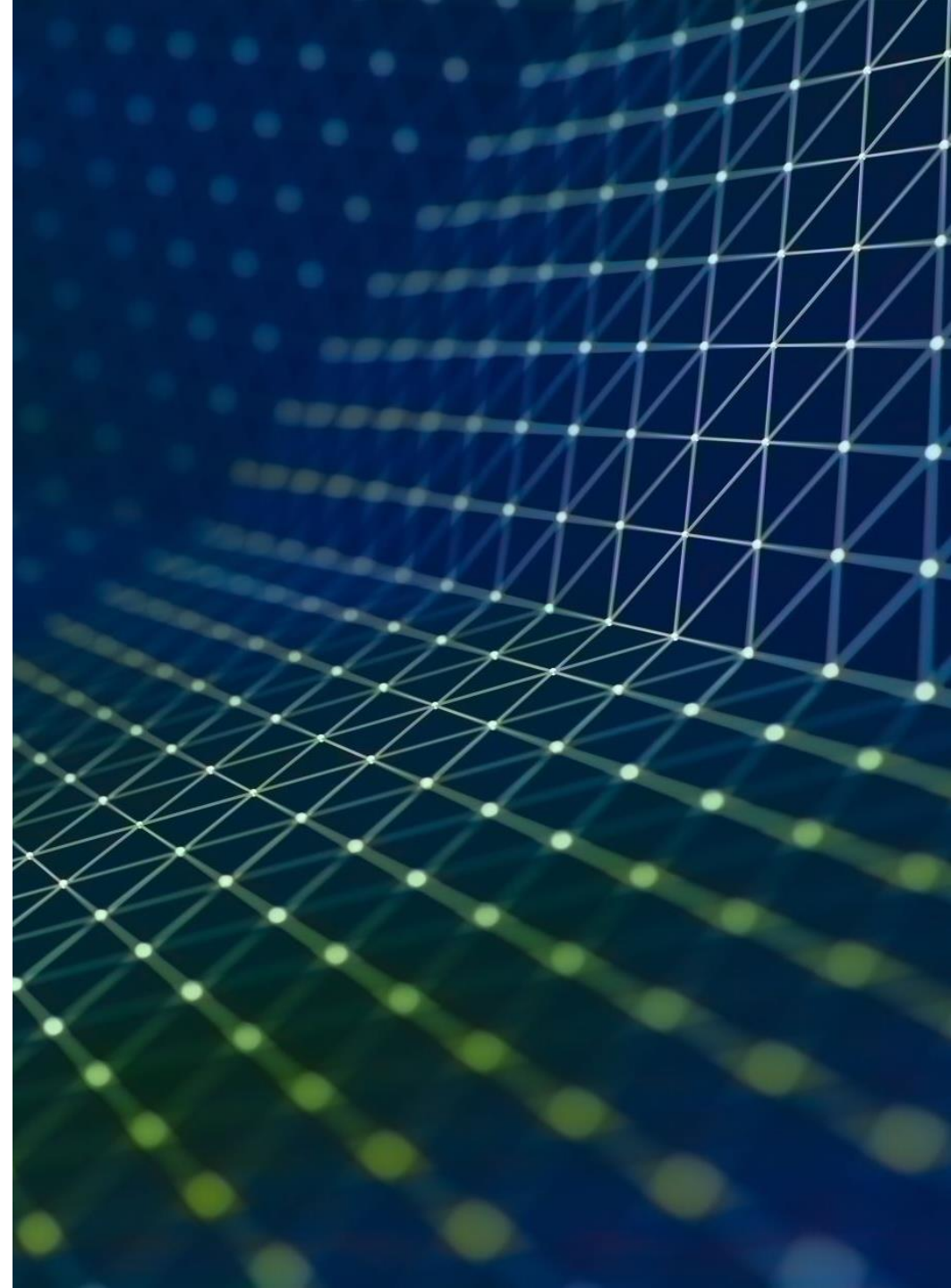
Consultant nephrologist, ISN fellow,
ISN clinical research committee board member,
Damanhur teaching hospital, GOTHI, Egypt



Introduction

Global CKD/NCDs:

- Highly prevalent (13% globally).
- With adverse clinical consequences with huge economic impact.
- Nearly half of the world's population still lacks access to essential health services.
- There is a great shortage of trained health care professionals.¹



Introduction

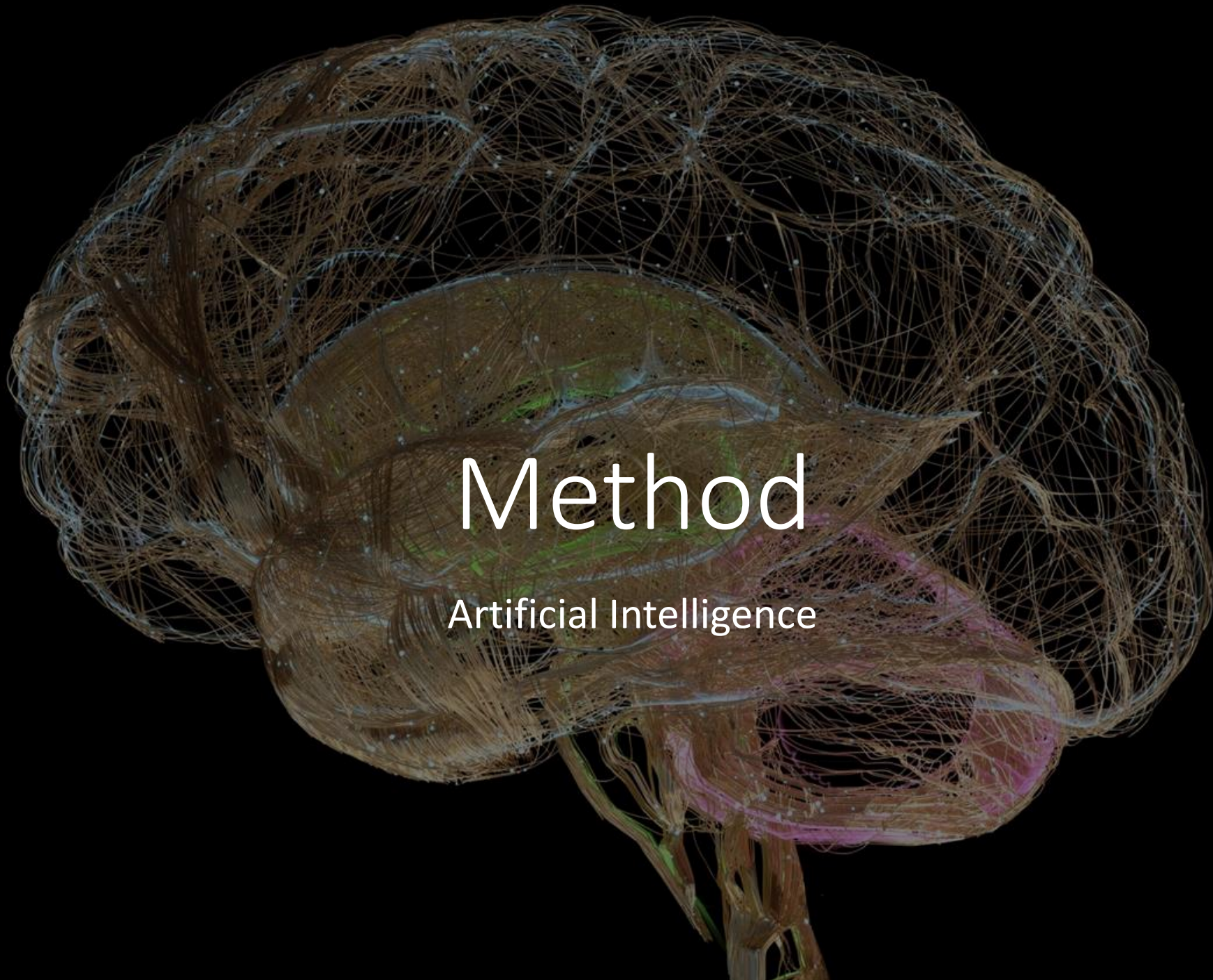
- Kidney care and its outcomes is often compromised due to:
 - Lack of nephrologists,
 - Unawareness by CKD,
 - Lack of population screening, prevention programs,
 - Poor patient adherence,
 - Absence of appropriate CKD management strategies.



Aim

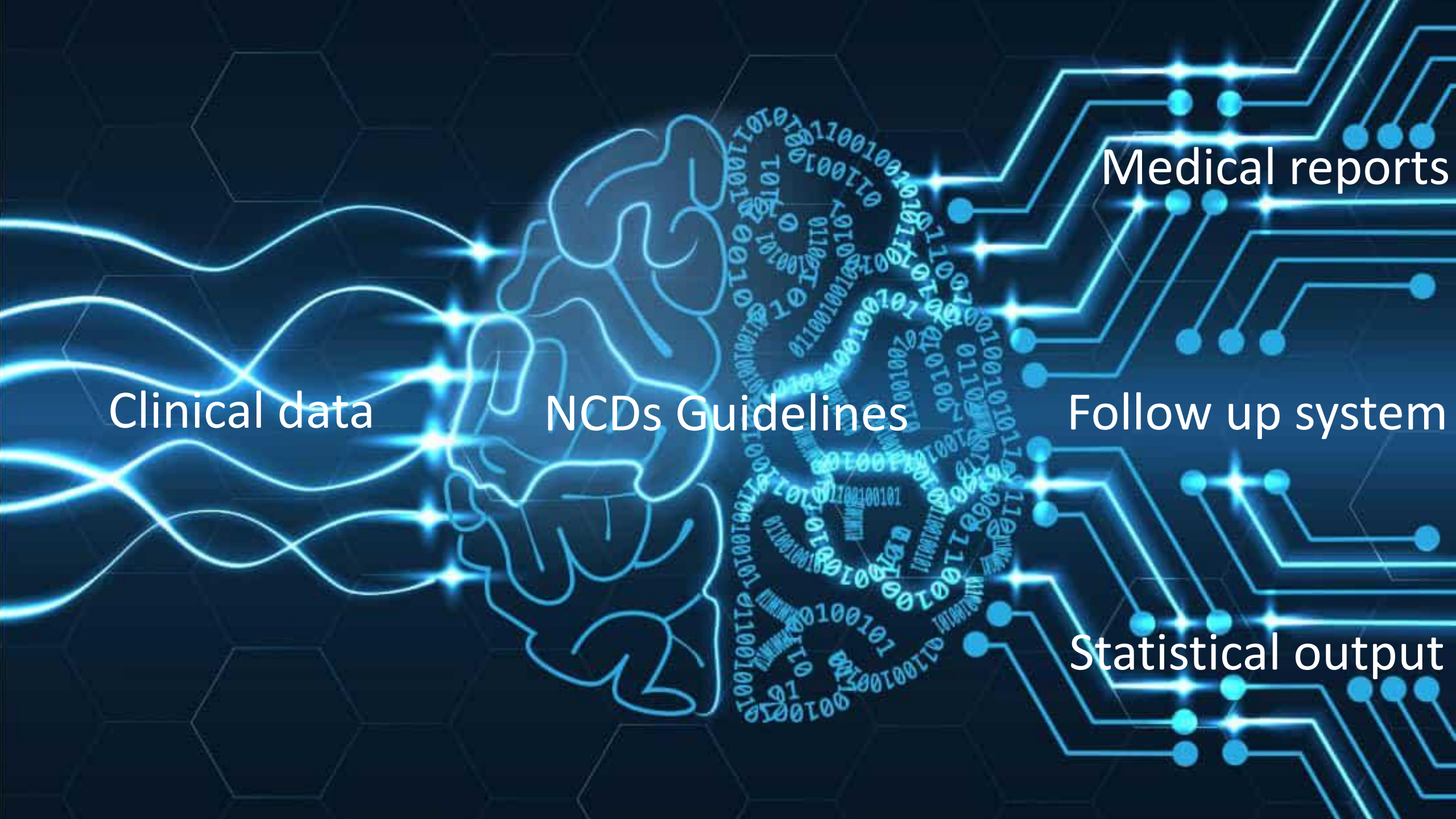
Provision of NCDs/CKD simple tool for the care providers at the frontline (family doctors, GPs) and specialists.

Utilizing the evidence-based guidelines in the management of CKD/NCDs.



Method

Artificial Intelligence



Clinical data

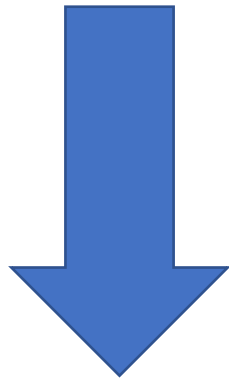
NCDs Guidelines

Medical reports

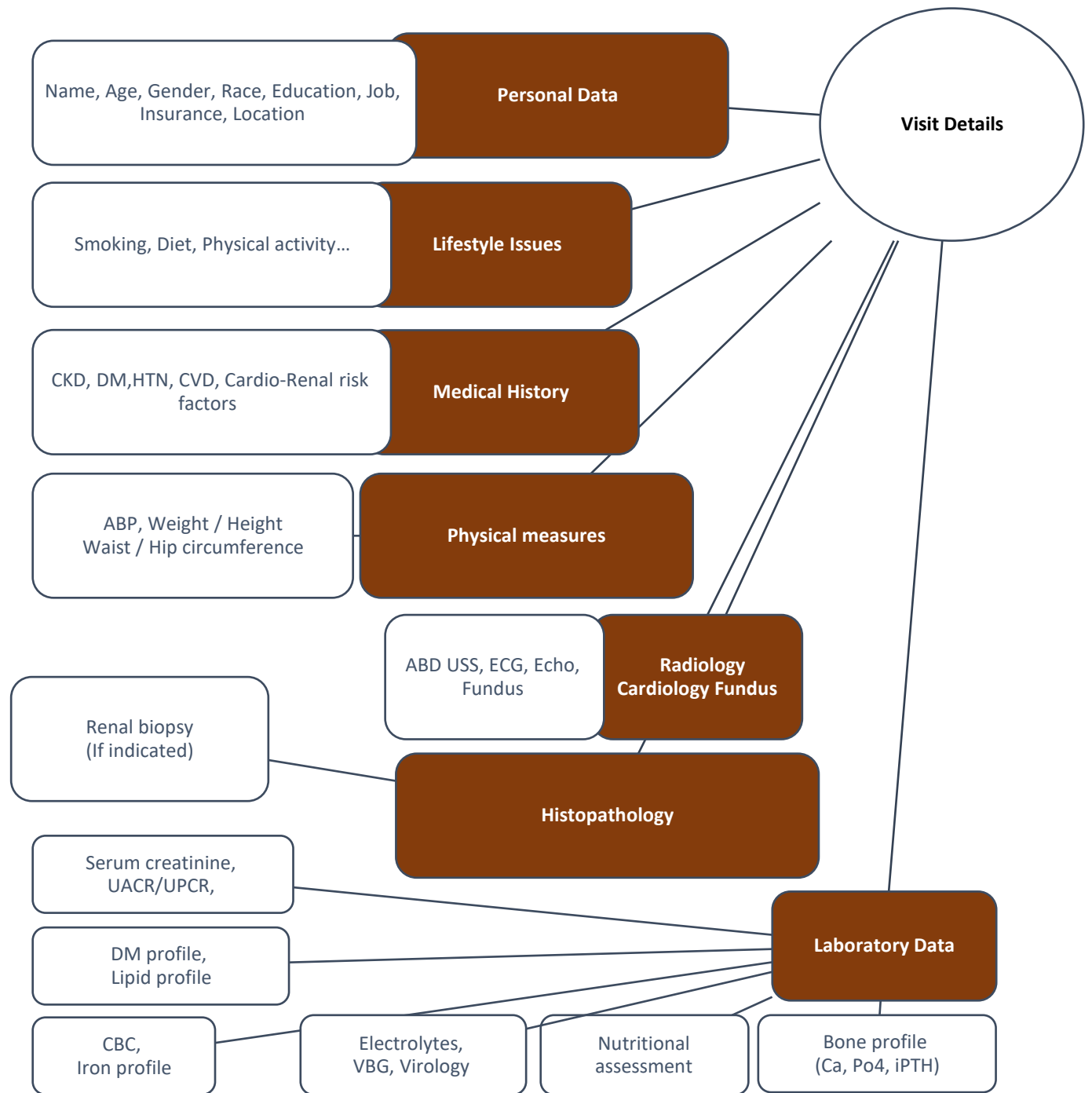
Follow up system

Statistical output

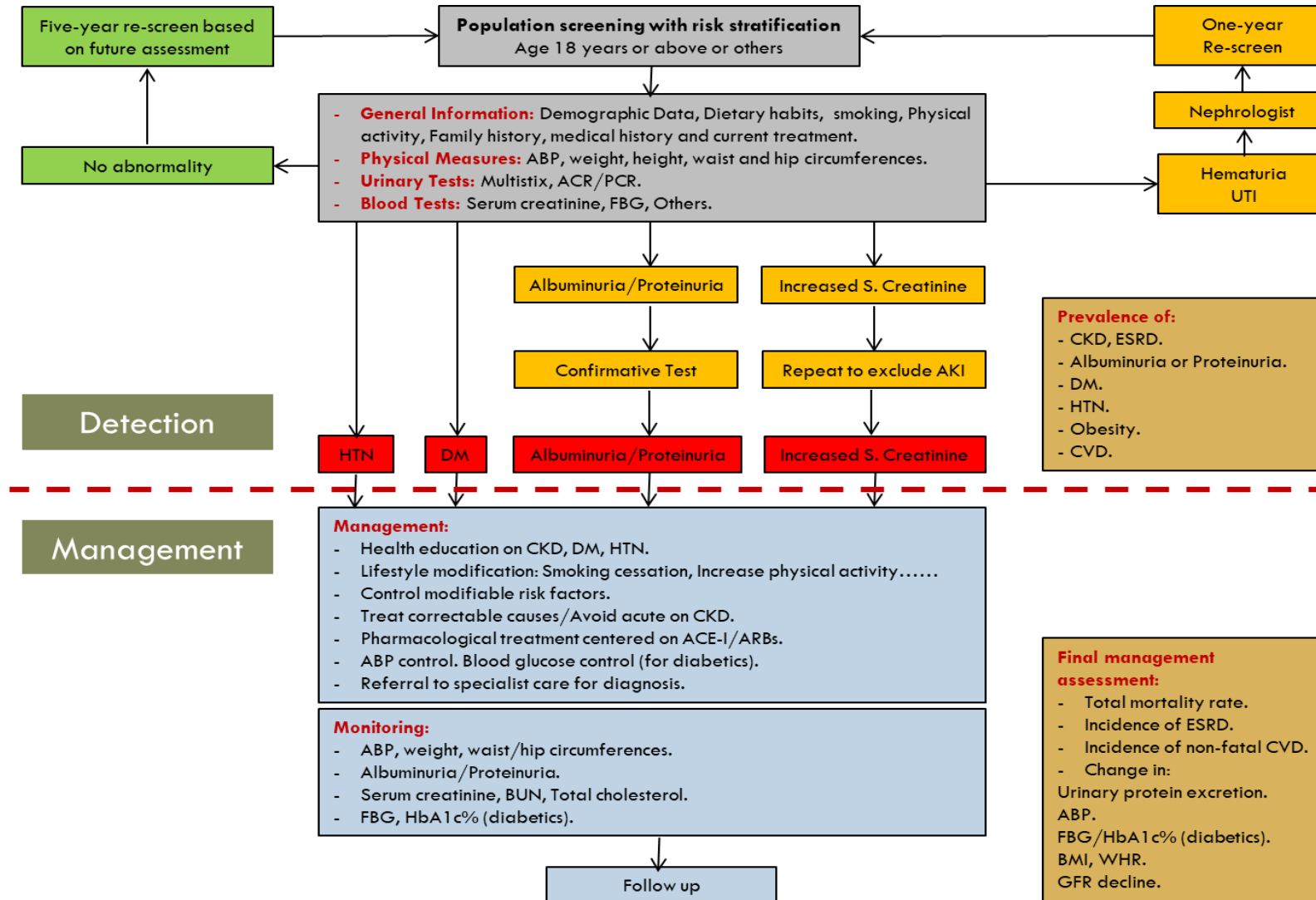
Medical record data



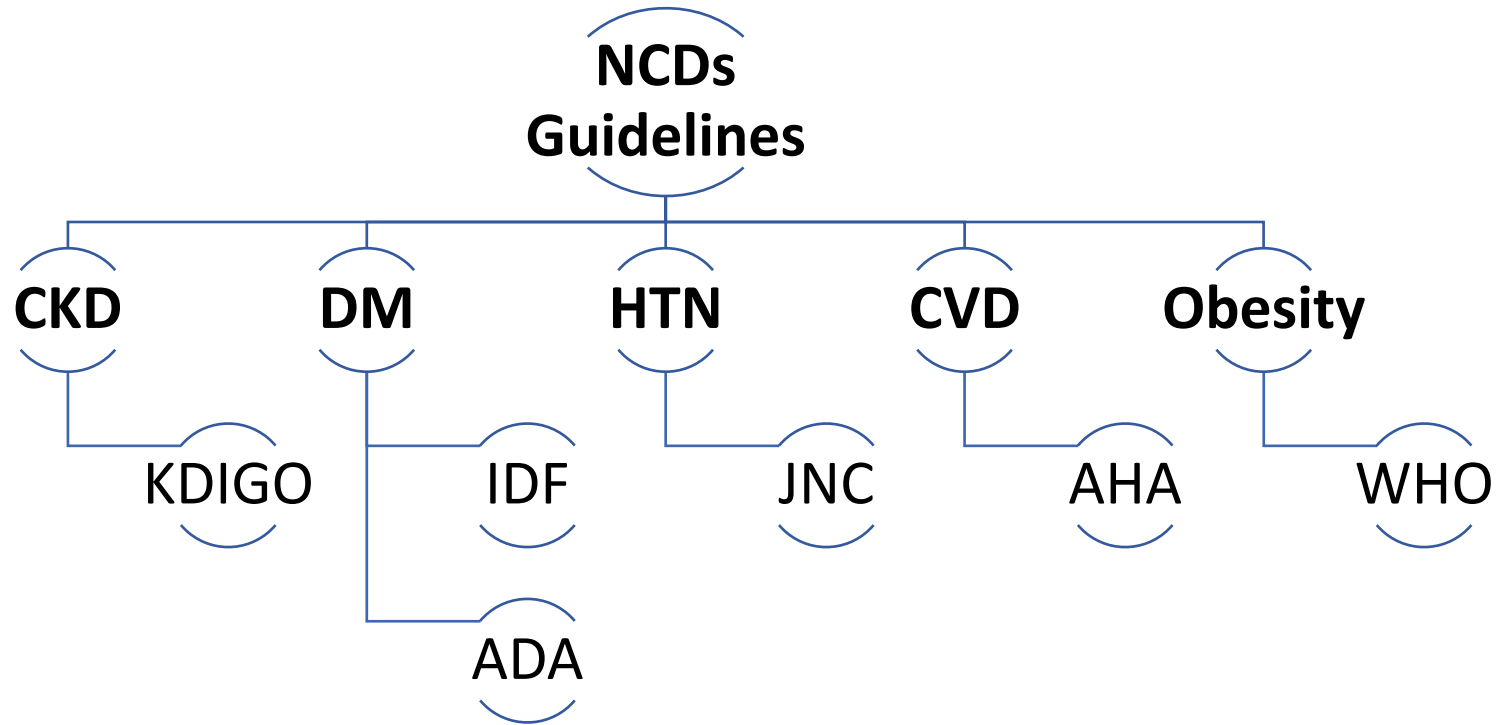
Variable codes



ISN CKD/NCDs identification and intervention toolkit



Guidelines used in program design



Guidelines converted into replacing messages

NCDs Made Easy Program Output

Participants' List Participant / Visit Search / Visit No. 1 , 04/02/2023 , 22:45 /

Visits Search
Participant's Dropbox
Laboratory Report
Medications
Statistics
Outpatient Clinics

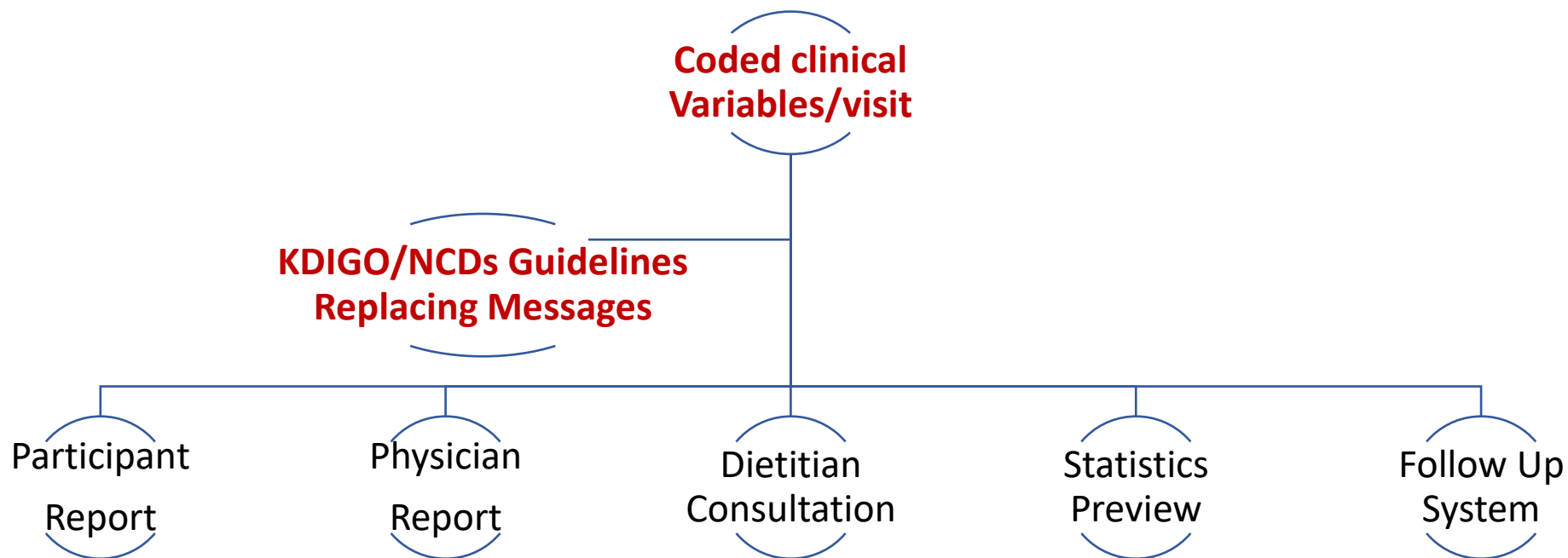
Healthcare organization Name
Headquarter Center

Patient Name (test) 0001, Female, 44 Years
Location Name: NCDs Screening Clinic
Consultant Name: Zaghoul Gouda

Participation Workup

Medical History Clinical Notes Final Diagnosis Consultations Radiology Cardiology Fundus Pathology Radiology Request Laboratory Request

Measures/Lab Lab + Participant Report Dietitian Report Physician Report





Cyber security

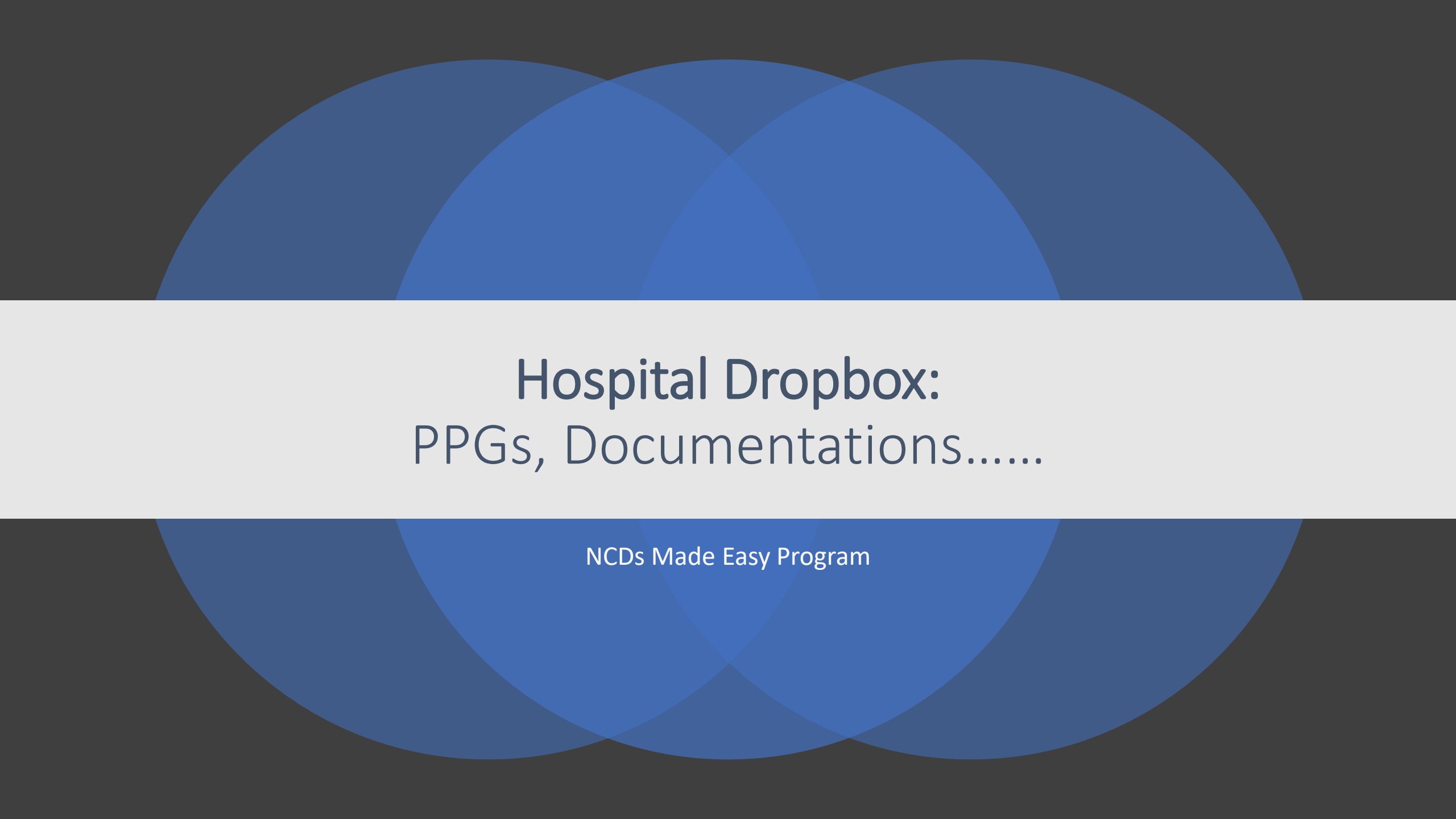
We consider Cyber security recommendations in ‘NCDs Made Easy Program’ to protected it from hackers as follow:

- We are using online security plugins and using dedicated server which guarantee performance and security.
- We can run application on local hosting and install security tools on the LOCAL server.
- Our data on the application are encrypted with Microsoft encryption class.
- Our hosting creates daily backup.



Internal Mailing system

NCDs Made Easy Program



Hospital Dropbox: PPGs, Documentations.....

NCDs Made Easy Program

Educational Resources

NCDs Made Easy Program



CKD/NCDs facility administration

Components:

Registration/booking

EMR

OPD clinics

Laboratory module

Radiology module

Consultations

Pharmacy

Statistics



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Outpatient clinics:

NCDs screening clinic

CKD Follow up clinic

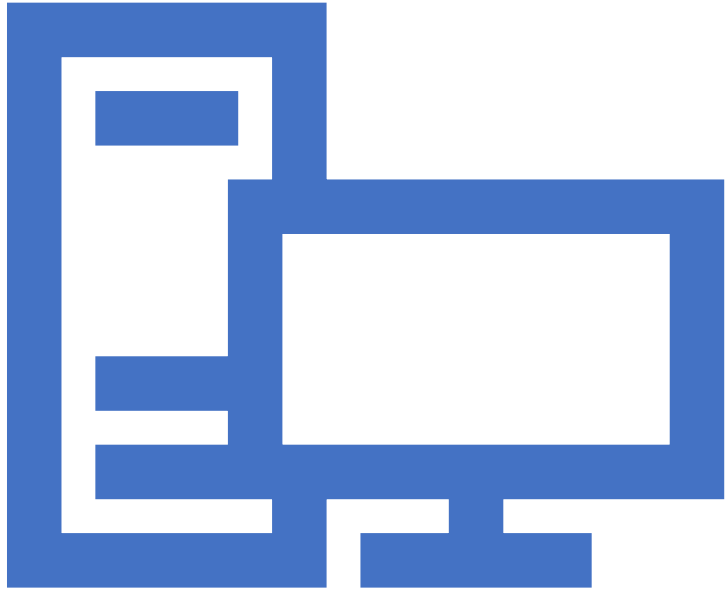
LCC clinic

CKD-MBD clinic

Vascular access clinic

Therapeutic nutrition clinic

Clinical pharma



Program output

NCDs Made easy Program



1) PARTICIPANT REPORT:

- NCDS diagnosis
- Target blood pressure
- Target weight /waist
- Metabolic syndrome
- Framingham heart score
- Cardio-renal risk
- Risk control action plan
- Monitoring of CKD
- CKD regression
- CKD complications
- Pre-ESRD care
- Referral to specialist



2) PHYSICIAN REPORT:

- NCDS diagnosis
- Target blood pressure
- Target weight /waist
- Metabolic syndrome
- Framingham heart score
- Cardio-renal risk
- Risk control action plan
- Monitoring of CKD
- CKD regression
- CKD complications monitoring / management
- Pre-ESRD care



☰ Dietitian's Report

Name:	Patient Name (test)	PIN Code:	002/045/1/1	Visit No.:	1
Age (Year):	44 years	Gender:	Female	Visit Date:	02/04/2023

Patient's contact details

Address: Damanhur, Egypt
Email: nephromep@telekidney.com
Telephone: 012345673456
Date of next visit:

Welcome

Dear Dietitian/

We are notified by the above mentioned participant that you are the dietitian for her/him. S/he gave us consent that we can contact you regarding her/his health status to help her/him in dietary counseling. As you know that early nutrition advice from a dietitian can save kidneys and heart, provide adequate protein and energy intake, prevent/control diabetes and high blood pressure, and improve quality of life.

REASONS FOR CONSULTATION:

According to the data provided and investigations were done, we found that her/his health status regarding chronic non-communicable diseases (NCDs) and weight assessment were as the following:

- * Hypertension
- * Diabetes Mellitus
- * Chronic Kidney Disease Grade 5

Kindly you can revise the attached detailed participant's report regarding her/his health status with special concern to modifiable risk factors for development and rapid progression of kidneys and heart diseases and its recommended action plan. Please consider the following recommendation(s) regarding the dietary instructions for her/him:

* The adoption of Dietary Approaches to Stop Hypertension (DASH) eating plan: Adopt a diet rich in fruits, vegetables, low fat dairy products with reduced content of saturated and total fat. It is rich in potassium (to be considered in persons with reduced kidney function and liability for hyperkalemia) and calcium content. Also, it contains fibers, vitamins, and antioxidants.

* Optimize sugars and carbohydrate intake. This will helps in controlling diabetes and blood pressure, and keeping weight within the desired limit.

* Adopt a diet with low fat dairy products and reduced content of saturated and total fat. This will help in weight and blood lipids control to prevent atherosclerosis.

* Dietary salt restriction to avoid volume overload, high blood pressure, and heart problems. It is recommended to lower salt intake to less than 2 gram/day of sodium, unless contraindicated. Consult your doctor.

3) DIETITIAN CONSULTATION FORM:

- This form is based on the individual visit details.
- It includes dietary action plan based on: NCDs diagnosis (DM, HTN, CKD, CVD and obesity), hyperlipidemia, level of eGFR, mineral/electrolyte balance.....`

Research & Statistics

NCDs Made Easy

Welcome, Zaghoul Gouda

Participants' List

Outpatient Clinics

Database

Healthcare organization Name
Headquarter Center

Alert

The file format and extension of 'Database (1).xls' don't match. The file could be corrupted or unsafe. Unless you trust its source, don't open it. Do you want to open it anyway?

Yes No

CKD_History	Number of Anti-HTN drugs	CKD	Blood_In_Urine	CKD_Frequent	CKD_Albumin	CKD_Renal_colic	CKD_Urine_inf
1	4	1	1	1	0	1	
1	4	1	1	1	0	1	

AutoSave OFF

Database (1)

Home Insert Draw Page Layout Formulas Data Review View Automate Tell me

Comments Share

Paste

Calibri (Body) 12

General

Conditional Formatting Format as Table Cell Styles

Insert Delete Format

Sort & Filter Find & Select Analyze Data

H29

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
	PIN Code	CountryCode	CityCode	CityName	ScreeningPlaceCode	ScreeningName	ScreeningNameAr	Address	Visit Number	Visit date	Hour	CreationBy	LastModifiedDate	LastModifiedBy	GenderCode	age	MaritalStatusCode	MaritalStatus	RaceCode	Education	JobCode	JobName	InsuranceCode	post
1	002/045/1/1	2	45	Damanhur	1	Headquarter Center	المركز الرئيسي	Damanhur, Egypt	1	02/04/2023	22:45:00:000	0	02/04/2023 7:40	0	2	44	1	Married	1	6	3	Teacher	0	
2	002/045/1/1	2	45	Damanhur	1	Headquarter Center	المركز الرئيسي	Damanhur, Egypt	2	02/14/2023	19:04:00:000	0	02/04/2023 7:40	0	2	44	1	Married	1	6	3	Teacher	0	

It is tested, piloted, and validated through a community-based EGIPT-CKD screening program funded by the ISN CRP

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed.gov

14. Ene-lordache B, Perico N, Bikbov B, Carminati S, Remuzzi A, Perna A, Is [X] Search

Advanced Create alert Create RSS User Guide

Found 1 result for an alternative search.
Your search for 14. Ene-lordache B, Perico ... retrieved no results.

Save Email Send to Display options

> Lancet Glob Health. 2016 May;4(5):e307-19. doi: 10.1016/S2214-109X(16)00071-1.

Chronic kidney disease and cardiovascular risk in six regions of the world (ISN-KDDC): a cross-sectional study

Bogdan Ene-lordache¹, Norberto Perico², Boris Bikbov³, Sergio Carminati², Andrea Remuzzi⁴, Annalisa Perna², Nazmul Islam⁵, Rodolfo Flores Bravo⁶, Mirna Aleckovic-Halilovic⁷, Hequn Zou⁸, Luxia Zhang⁹, Zaghoul Gouda¹⁰, Irma Tchokhoniidze¹¹, Georgi Abraham¹², Mitra Mahdavi-Mazdeh¹³, Maurizio Gallieni¹⁴, Igor Codreanu¹⁵, Ariunaa Togtokh¹⁶, Sanjib Kumar Sharma¹⁷, Puru Koirala¹⁷, Samyog Uprety¹⁸, Ifeoma Ulasi¹⁹, Giuseppe Remuzzi²⁰

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4. Gouda Z, Mashaal G, Bello AK, El Attar A, El Kemmry T, El Reweny A, El N [X] Search

Advanced Create alert Create RSS User Guide

Found 1 result for an alternative search.
Your search for 4. Gouda Z, Mashaal G, Bel... retrieved no results.

Save Email Send to Display options

> Saudi J Kidney Dis Transpl. 2011 Sep;22(5):1055-63.

Egypt Information, Prevention, and Treatment of Chronic Kidney Disease (EGIPT-CKD) programme: prevalence and risk factors for microalbuminuria among the relatives of patients with CKD in Egypt

Zaghoul Gouda¹, Ghada Mashaal, Aminu K Bello, Adel El Attar, Talaat El Kemmry, Anwar El Reweny, Meguid El Nahas

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The results are out: R&P call for applications

Following the last call for applications, the ISN Research and Prevention Committee is happy to announce the list of applicants who are set to receive a grant to carry out an ISN Clinical Research and Prevention Program. The ISN Clinical Research and Prevention (R&P) Program supports research and education programs in low-to-middle income countries involving

Outcome and implementation

- It helps in deficient nephrologists in low resource countries.
- It can be implemented in PHC, DM, Nephrology clinics.
- It impacts in early detection and intervention of CKD/NCDs.
- Build database and support GIS.

Thank you

For more information:

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