

Brief Introduction to Using More Information  
and Communications Technology in Private  
Health Care – Opportunities, Pitfalls &  
Obligations of Proprietors

# ICT in General & Private Health Care



**NG Care  
Portal**

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# Agreeing Our Objectives

In this exercise, we will

1. Explore the various aspects and types of Electronic Health Records
2. Explore the nature and scope of Tele Health in General Practice
3. Examine the various aspects of Cyber Security and their consequences for the Private Health Care Provider
4. Look at the unique solutions provided by Dr Fatai Badmus / TISP Consultants Ltd.
5. Enumerate the various options for Private Health Care Providers as well as the potential next steps.



## Introducing – Dr Fatai O. Badmus

- BSc (Hons.), MBChB, PRINCE2, MSP, CITP
- Qualified as a medical doctor in 1983 @ the University of Ife
- Has lived and worked extensively in 4 countries on 3 continents
- An accomplished Medical, Business and IT consultant
- Provided high-level and high-value services to major corporations in the City of London, the UK National Health Service and large numbers of SMEs in the UK and other parts of the world.



# Introducing – NG Care Portal

- EHR services provided to Medical, Allied Health and Social Care Practitioners in Nigeria courtesy of TISP Consultants Ltd.
- Special configurations for
  - Outpatient Clinics
  - In-Patient Facilities / Hospitals
  - Specialist Clinics / Hospitals
  - Diagnostic Centres
  - Pharmacies



# Introducing - TISP Consultants Ltd.

Nigerian Partner of a United Kingdom company that provides

- Health & Social Care
- Neuroscience Applications in Business & Technology
- Capacity Building, Training & Development
- Business Management & Consulting
- Leadership and Mentoring
- Diaspora Organisation & Empowerment





# What is ICT in Health Care?

- The use of Information & Communications Technology to enable, enhance or optimise the delivery of Health Care
- Some practitioners take it to also cover the use of ICT in and for Social Care
- Broadly includes
  - Electronic Health Records and Clinical Decision Support systems
  - Tele Health: Secure electronic communications between healthcare organisations and also branches, colleagues and with patients / service users
  - ICT culture in your hospital or practice, including Cyber Security
  - Therapeutic and Diagnostic Gadgetry/Equipment, including the use of robotics.



## Basic Definitions of Electronic Records

- EHR = Electronic records of patients' wholistic health information optimised for sharing with other providers or organisations
- EMR = Essentially the electronic version of local clinical paper-based information
- MRS = Medical Records System = Basically the same as EMR
- CDSS = Clinical Decision Support System = Computer program or system enabling clinical diagnosis and treatment options
- HIS = Hospital Information System = Hospital Management System = Enhanced EMR focussed on hospital administration.



# What are the main differences between these?

Private Health Care Providers are mainly interested in EMR or EHR

- EMR –
  - Electronic version of local clinical paper-based information
  - Mainly used for patient care within the local facility
  - Records not optimised for sharing with other providers or organisations
- EHR –
  - Electronic records of patients' overall health information
  - Core component of public health and policy-making
  - Optimised for sharing with other providers or organisations





## What are the main benefits of these systems? Why should you care as a Nigerian doctor?

- Quick accurate, up-to-date and efficient access to patient records and streamlined coding and billing for HMO / Health Insurance purposes
- Securely sharing patient information with patients, other providers and organisations
- Reducing costs for providers and patients by enabling more effective diagnoses, decision support, reduced medical errors, more reliable prescribing and ultimately safer care
- Enabling providers to improve productivity and efficiency and have better businesses
- Allowing a patient's medical information to move with them to other countries or providers
- Enabling easy availability of information for optimum public health, social care and policy-making.



## Before now, what were your options for getting and using EHR / EMR in Nigeria?

- Systems not produced and provided by experienced Nigerian Medical Doctors fully IT trained and certified, with Chartered IT Professional status
- Systems provided by companies that do not have **both** foreign and Nigerian Medical and IT experience
- Very expensive systems, especially for the vast majority of providers
- Generic systems not particularly “Nigerianised”
- Systems designed to exclude lower-tier healthcare practices and facilities – only catering to the “big boys” with deep pockets!



# What is Tele Health?

- Tele Health = Generally, sending and receiving of health information from one location to another using Information and Communications Technology (ICT)
- Most commonly involves leveraging audio/video or phone technology for medical consultation and treatment 24 / 7 / 365
- Many examples of usage, some of which are:
  - General and family practice
  - Medication management
  - Diabetes care and management
  - Mental and behavioural health
  - Sleep medicine
  - Cancer care
  - Elderly care (Residential and Domiciliary)
  - Public health administration and policy formulation.



# What are the various forms of Tele Health?

- Firstly, there are Tele Health, Tele Care and Tele Medicine:
  - Tele Health = Using technology for remote diagnoses and evaluations of patients as well as remote detection of fluctuations in patients' medical conditions. Usually taken to also encompass Tele Care and Tele Health.
  - Tele Care = Mobile monitoring devices & medical alert systems that enable patients to maintain their independence and safety in their own homes.
  - Tele Medicine = Use of ICT to provide remote clinical and social care services to patients / service users and share information.
- Then, for Tele Medicine, there are generally three implementation options:
  - Asynchronous Tele Medicine = For sharing static information. Similar to email or chat / messaging but designed to be very secure.
  - Remote Patient Monitoring = Tele Monitoring = For tracking patients' vital signs and activities without visit to / by care provider.
  - Real-time Tele Medicine = Patients and providers use secure video conferencing software / platform to communicate and interact. Facetime, Skype, WhatsApp and similar systems are neither adequate not advisable.





# What are the main benefits of Tele Medicine?

- Optimises practitioner resources and can deliver significant cost savings
- Delivers comfort and convenience to the patient / service user
- Reduces the impacts and costs of physical distance
- Minimises the risks of clinic or hospital acquired infections
- Avoids the restrictions of the Covid-19 pandemic
- Ultimately improves patient health status
- In some scenarios, can enable better assessment of the patient or service user
- Can involve important family members during consultation, regardless of their location





## Before now, what were your options for getting and using Tele Medicine in Nigeria?

- Stand-alone health apps that do not integrate to providers' EHR systems
- Expensive systems that are difficult and costly to maintain month to month
- Generic systems not designed and maintained by experienced Nigerian Medical Doctors fully IT trained and certified, with Chartered IT Professional status
- Non-bespoke and insecure systems that ultimately cost both providers and patients / service users dearly.
- Systems too complicated to use or requiring complex / expensive equipment.



# What is Cyber Security in Health Care (CSHC)?

- CSHC entails the protection of electronic information and assets from unauthorized access, use and disclosure.
- The three broad objectives of CSHC are: protecting the **CIA** (**C**onfidentiality, **I**ntegrity and **A**vailability) of information.
- CSHC seeks to manage, mitigate or eliminate attack surfaces and attack vectors that are generic as well as those specific to health care.
  - Insecure emails and insecure communications platforms vulnerable to MitM (Man in the Middle) attacks.
  - Phishing leading to malware infections
  - Physically insecure computer hardware
  - Legacy systems no longer eligible for security updates / patches as well as those prone to zero-day vulnerabilities
  - Non-existent IT security culture: Insufficiently educated / motivated staff and patients that unwittingly compromise systems' security by acts of commission or omission.



# Why Bother with Cyber Security?

- Hackers view the healthcare sector as a target-rich environment due to the large amount of sensitive data that healthcare entities maintain for patient care and operations (i.e. Large attack surfaces and multiple attack vector options).
- Ransomware can grind your operations to a halt, making care delivery very difficult to impossible.
- Ransomware pay-outs and efforts to protect or harden healthcare systems and cyber defences will likely increase your healthcare facility's operating expenses and adversely impact the bottom line.
- Security breaches that become public can ruin your personal and organisation's reputations, sometimes permanently.
- Compromised data security or threats of it can present a credible path to blackmailing a healthcare provider, with huge personal and / or organisational costs.



# Who Pays for Lack of Cyber Security? - I

- The healthcare provider organisation
  - Severe reputational damage
  - Litigation by patients, other organisations or government agencies
  - Expensive clean-ups after data breaches
- The Medical Practitioner – personally or via their insurance company
  - Severe reputational damage
  - Litigation by patients, other organisations or government agencies
  - Severe psychological trauma, driving some to have suicidal ideation





# Who Pays for Lack of Cyber Security? - II

- The patient
  - Clean-up costs of data breaches passed on to private patients
  - Unavailable medical systems potentially causing increased morbidity or even mortality
- The healthcare ecosystem
  - Security breaches, especially those widely publicised, can cause significant loss of patient confidence in the system
  - Compromised and therefore unreliable data can facilitate poor public health policy-making





# TISP Consultants' Solutions - I

- Secure and Certified systems designed and delivered by Nigerian Medical Doctor of almost 40 years' experience that is also fully IT trained and certified, with Chartered IT Professional status
- Systems provided by a company combining both foreign and Nigerian Medical and IT experience
- Low-cost systems that are easy to maintain month to month
- Tele Health systems that are secure and very easy to use via readily available devices.
- Systems specifically designed to accommodate and empower lower-tier healthcare practices and facilities, while also catering to the needs of the "big boys" with deep pockets.



## TISP Consultants' Solutions - II

- Heavily-discounted EHR solutions for Outpatient Clinics, In-Patient Facilities / Hospitals, Specialist Clinics / Hospitals, Diagnostic Centres & Pharmacies
- Heavily-discounted Tele Health solutions
- Heavily-discounted Medical ICT Usage & Security Training (for Owners / Operators and / or Staff) in association with Industry Certificate Awarding Body and / or Private University.



# NG Care Portal Special Features Recap - I

Core EHR Bundles always include:

- Very secure cloud services (***Bank-level security, with Multi Factor Authentication – MFA***)
- IT Help Desk Support staff located in Nigeria, Switzerland and Germany
- 2 x Dedicated servers located in the EU (Germany) with resilience and high availability
- Your site's speed will impress you!



# NG Care Portal Special Features Recap - II

## Extremely cost-effective Core EHR Bundle:

- Unlimited number of patients
- One-off payment - **Don't pay "tax" to an EHR company for being successful!**
- No renewals
- No annual payments
- Forever!



# NG Care Portal Special Features Recap - III

- Fully “Nigerianised” with 85+ HMO details (national coverage), locally relevant provider specialities plus much more.
- Full ICD9, ICD10, SNOMED, RXCUI, etc integration, out of the box!
- Prescribing support with the **latest** British National Formulary (both Adult and Children’s versions) available online within your site.
- Core EHR Bundle costs **as low as NGN56K for out-patient clinics and NGN75K for in-patient hospitals.**
- Tailor any other services you need to your own situation.
- Don't pay for what you don't need.





# Addendum - I

Working with a Finance Company to accomplish 2 critically important objectives:

1. Making ownership of NG Care Portal subscriptions much more convenient for your cash-flow by spreading the cost over many months.
2. Arranging factoring / invoice finance for Doctors or hospitals, so that they get paid once their invoice to the HMO has been submitted
  - **No more stress of delayed payments!**
  - **No more waiting forever for your money!!**
  - **No more awkward relationships with HMOs!!!**



# Addendum - II

## TISP Consultants' contributions to the ANPMP Welfare Fund:

- For every Doctor taking up any of the Annual Optional Subscription services, TISP Consultants will contribute NGN10,000.
- This NGN10,000 contribution will be in the name of (or on behalf of) the Doctor, so it is effectively a discount!
- For the sake of fairness and transparency, the contribution will be to the particular Doctor's ANPMP Zone's Welfare Fund.
- The NGN10,000 contributions **will always be made at every renewal** of the relevant Annual Subscription.



# Next Steps

Do one of the following, as soon as possible:

- Come on board now at [www.sls.cx/NGCP4](http://www.sls.cx/NGCP4)
- Send us an email:  
[solutions@info.ngcareportal.com](mailto:solutions@info.ngcareportal.com)
- Send WhatsApp messages to +234 90 1187 7191
- Call / SMS on +234 90 1187 7191



NG Care  
Portal

# Thank You!

Your attention is much appreciated.

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