UNIVERSITY OF PORT HARCOURT

"BYSTANDER CARDIOPULMONARY RESUSCITATION IN NIGERIA: BEING YOUR NEIGHBOUR'S KEEPER"

An Inaugural Lecture

By

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ORDER OF PROCEEDINGS

2.45 pm. Guests are seated

3.00pm. Academic Procession begins

The Procession shall enter the CBN Centre of Excellence auditorium, University Park, and the Congregation shall stand as the Procession enters the hall in the following order:

Academic Officer
Professors
Deans of Faculties/School
Dean, School of Graduate Studies
Provost, College of Health Sciences
Lecturer
University Librarian
Registrar
Deputy Vice Chancellor Research and Development
Deputy Vice Chancellor Academic
Deputy Vice Chancellor Administration
Vice Chancellor

After the Vice Chancellor has ascended the dais, the Congregation shall remain standing for the University of Port Harcourt Anthem.

The Congregation shall thereafter resume their seats.

THE VICE CHANCELLOR'S OPENING REMARKS.

The Registrar shall rise, cap, invite the Vice Chancellor to make his opening remarks and introduce the Lecturer.
The Lecturer shall remain standing during the Introduction.

THE INAUGURAL LECTURE

The Lecturer shall step on the rostrum, cap and deliver her Inaugural Lecture. After the lecture, she shall step towards the Vice Chancellor, cap and deliver a copy of the Inaugural Lecture to the Vice Chancellor and resume her seat. The Vice Chancellor shall present the document to the Registrar.

CLOSING

The Registrar shall rise, cap and invite the Vice Chancellor to make his Closing Remarks.

The Vice Chancellor's Closing Remarks.

The Vice Chancellor shall then rise, cap and make his Closing Remarks. The Congregation shall rise for the University of Port Harcourt Anthem and remain standing as the Academic [Honour] Procession retreats in the following order:

Vice Chancellor
Deputy Vice Chancellor Administration
Deputy Vice Chancellor Academic
Deputy Vice Chancellor Research and Development
Registrar
University Librarian
Lecturer
Provost, College of Health Sciences
Dean, School of Graduate Studies
Deans of Faculties/School
Professors
Academic Officer

PROTOCOLS

- The Vice Chancellor
- Previous Vice Chancellors
- Deputy Vice Chancellors [Admin.; Acad.; and R&D]
- Previous Deputy Vice Chancellors
- Visiting Vice Chancellors
- Members of the Governing Council
- Registrar and other Principal Officers of the University
- Provost, College of Health Sciences
- Dean, Graduate School
- Dean, Faculty of Education
- Deans of other Faculties
- Head, Department of Health Promotion, Environmental & Safety Education
- Heads of other Departments
- Distinguished Professors
- Directors of Institutes and Centers
- Visiting Academics and Colleagues
- Esteemed Administrative/Technical Staff
- Captains of Industries
- Cherished Friends and Guests
- Unique Students of the University of Port Harcourt
- Members of the Press
- Distinguished Ladies and Gentlemen

DEDICATION

I wholeheartedly dedicate this lecture to the Almighty God who brought me to my parents after six years of barrenness, and ordered my life to meet my love, friend, husband and mentor, Chukwudi Ochi Onyeaso. To Him alone is all the glory in Jesus Christ' name. Amen.

ACKNOWLEDGEMENTS

My profound gratitude and deep-rooted worship belong to the Almighty God, the Maker of heaven and earth, the beginning and the end, the covenant-keeping God for His faithfulness unto me and my family over the years. Him alone shall we serve till the end of our lives.

Let me thank my late parents – Pa Solomon & Mrs Bosede Owolabi Osho for bringing me to this world with much joy and care. Continue to rest in perfect peace. My siblings are very much appreciated too for their love. The welcoming Onyeaso family is very much appreciated for their love, especially the God-fearing Late Madam (Deaconess) Grace U. Onyeaso, who accepted me into the family with open arms. I cannot forget you.

I must sincerely thank and appreciate the digital 9th Vice Chancellor of University of Port Harcourt, Professor Owunari Abraham Georgewill, under whose watch I was promoted to Professor of Health Education. Again, he graciously approved this inaugural lecture. Thank you so much, Sir. May your tenure as Vice Chancellor witness more wins and glory in Jesus' name. Amen. The Deputy Vice Chancellors, the Registrar, the Bursar and University Librarian are very much appreciated and honoured.

Professor Don Baridam, the 6th Vice Chancellor of University of Port Harcourt, did not only appoint my husband as a Professor of Orthodontics in 2008, he also employed me the same year as an Assistant Lecturer. The God-fearing Professor Baridam was there for my family when my husband was shot and considered dead on June 03, 2008 at the entrance gate of Delta Park. It was a very challenging time for my young family then as our children were still at Ibadan with me, but we survived it through the love of God and care of good people like many of you here today and some

who have retired or gone to rest in glory. I want to specially appreciate the then Chief Medical Director, Chairman, Medical Advisory Committee and Director of Administration of University of Port Harcourt Teaching Hospital (UPTH) – Professor U.S. Etawo, Professor Aaron Ojule and late Mrs B Amaumu-Jumbo, respectively for the care and love they showed my family during my husband's hospital admission. May God reward you all.

I cannot forget the other past Vice Chancellors for all the support they have given to my family since our arrival here in 2008 – the 7th Vice Chancellor, Professor J A Ajienka, Emeritus Professor Bene Willie Abbey (former DVC, R & D), our late Emeritus Professor N D Briggs, the 8th Vice Chancellor, Professor NES Lale and the former Acting Vice Chancellor, Professor Steve Okodudu . I must remember the goodwill and support my family received from the other retired and serving Principal Officers of the University such as late Professor E.O. Ayalogu (DVC, Administration), Professor B J O Efiuvwevwere (DVC, Academic), Professor Ethelbert Nduka (DVC Administration), Mr M N Onyige and Mrs Matilda Nnodim (former Registrars of the University).

I want to thank my Dean, Professor Cheta Williams, for his support and belief in me. The support of Professor Awotua-Efebo and Professor Mrs. Madumere-Obike (former Dean and Associate Dean of Faculty of Education) are very much appreciated. My teachers from primary school education to my PhD are very much appreciated today, especially Professors Igbanugo, Moronkola, Adegbesan (current Dean of Faculty of Education, University of Ibadan.), Ladipo, Ernest Achalu (my PhD Supervisor), Okpako, Iroh, Orunaboka, late Imogie, etc. My Head of Department and colleagues in the Department, senior colleagues and colleagues in the Faculty are appreciated. My undergraduate and postgraduate students are appreciated because you are the reason why I am here in the University.

The Chairman and members of the University of Port Harcourt Senate Committee on Inaugural lectures are very much appreciated for their useful contributions in the preparation of this lecture. God bless you all.

Let me thank and appreciate my friends generally who have in one way or the other encouraged my academic career. You are too many to be mentioned one by one here because of time constraint. May God bless you. I love you all.

How do I thank and appreciate you: my friend, mentor, a man with a good heart, my husband, a true man of God. You are a rare man. Thank you for being a dependable partner. I love you so much, Olumi. Onyedikachi, Chinyerem, Chibuotam and Chikamaram (twins), Favour, Ugochi, Smith, Ben, and Timothy. I thank God for giving you to us. Your submissions to Jesus Christ and hard work have made life much easier for me. Eden-Zoe, AkaGod, Victoria, Beauty, Tochukwu, and Otutodirichukwu you are part of my joy today. I thank God for you all.

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"BYSTANDER CARDIOPULMONARY RESUSCITATION IN NIGERIA: BEING YOUR NEIGHBOUR'S KEEPER"

1.0 Preamble

I am grateful to God Almighty for this opportunity to deliver the 200th inaugural lecture of the university and by extension the very first from the Department of Health Promotion, Environmental and Safety Education of this unique university. My gratitude also goes to the Vice Chancellor of the university. Professor Owunari Abraham Georgewill for his approval for this lecture.

Health Education is any combination of learning experiences designed to facilitate voluntary action conducive to health. Health education, therefore, provides consciousness-raising, concern-arousing, action-stimulating impetus for public involvement and commitment to social reform. It emphasizes the imparting of accurate information to set the stage for the adoption of sound health practices or the abandonment of poor ones. It focuses on acquainting people with the causes of disease, on health practices to reduce and avoid risk and on ways to detect a developing problem. However, the peculiarities of contemporary health problems necessitated a more responsive approach which resulted in the evolution of skill-based Health Education.

Skill-based Health Education was conceptualized to move Health Education from its traditional conceptualization of health knowledge and attitude to demonstration of vital skills; cognitive, social and manipulative, that could help in the attainment of the goals of Health Education. Skill-based health education uses a combination of participatory learning experiences that aims to develop knowledge, attitudes and especially skills needed to take positive actions needed to create healthy lifestyles (Fountain and Gillespie, 2003).

It addresses real life applications of essential knowledge, attitudes and skills, and uses interactive teaching and learning methods.

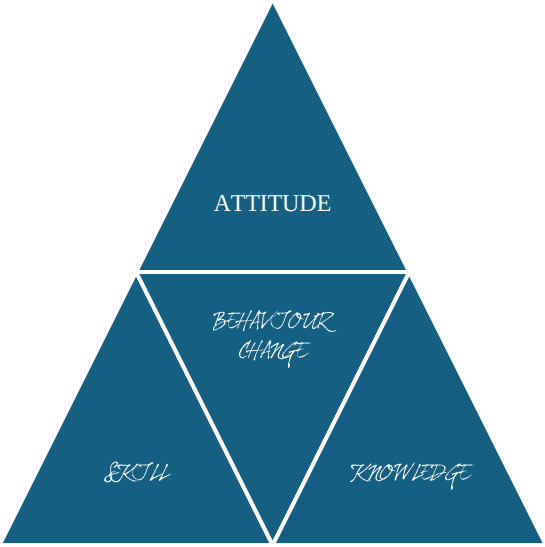

Fig 1: Skill-based Health Education Model

My Journey from Clinical Nursing to Academia

As a trained nurse / midwife, I was enjoying my professional services to my patients and my relationships with my senior colleagues, colleagues and younger colleagues. I discovered that I was always having special sessions teaching students Nurses in preparation for their professional examinations that were yielding very encouraging outcomes. I was then officially posted to School of Nursing as a Clinical Instructor, and later chosen, among a few of the nursing staff along with some medical doctors, for a special course in Cardiopulmonary Resuscitation by the American Heart Association (AHA). After becoming an AHA-certified Instructor, UCH Management appointed me the Coordinator of the Cardiopulmonary Resuscitation (CPR) Training Unit of the hospital. This position with my training, as well as my exposure in health education from the University of Ibadan, opened my eyes to the existing gap in the Chain of Survival for out-of-

hospital cardiac arrest (OHCA) victims in Nigerian environment, which is bystander cardiopulmonary resuscitation (CPR) - the role of the laypersons (that is medically untrained individuals) in helping to keep victims of OHCA alive until professional services arrive. In fact, on many occasions in the teaching hospital, I observed that victims of OHCA were brought in dead without receiving the bystander CPR services needed from bystanders or neighbours, which is also called the 'buying time period' to keep the heart in shockable rhythm before getting the victims to the hospital.

With the support of my visionary husband who had been encouraging me to move over to academics because of my love for teaching, I made up my mind to contribute in bridging this important and obvious gap in the management of OHCA victims in Africa, especially in Nigeria. It is important to note that in some countries like the UK and US, some of the bystander CPR training centres or facilities are headed /coordinated by CPR-trained teachers. Having obtained my bachelor's and master's degrees in health education from the University of Ibadan, my PhD work was certainly clear cut to be on Bystander CPR as part of Community Health Education in the then Department of Health Education and Human Kinetics, Faculty of Education, University of Port Harcourt, following my family movement to the University of Port Harcourt.

1.1 Introduction

Mr. Vice Chancellor, Sir and my distinguished audience, it is a great privilege to address you today on a subject of paramount importance to our communities and public health: "**Bystander Cardiopulmonary Resuscitation in Nigeria: Being Your Neighbour's Keeper.**" Heart disease and cardiac arrest are global health challenges, but in a country with limited emergency medical resources, it is crucial to empower citizens with life-saving skills that can bridge the gap between sudden cardiac events and professional intervention.

Cardiopulmonary Resuscitation (CPR) is an emergency procedure used to restart a person's heartbeat and breathing after one or both have stopped. It involves giving strong rapid pushes to the chest to keep blood moving through the body. It can also be defined as an emergency procedure consisting of chest compressions often combined with artificial ventilation, or mouth to mouth in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest.

"Being Your Neighbour's Keeper" highlights the essence of community responsibility and the power of bystander intervention through CPR. In a society as vibrant and community oriented as ours, there is an untapped potential for citizens to become first responders, ready to save lives before medical professionals can arrive on the scene. I invite you to consider how this single skill—performing CPR—can transform us all into life-saving neighbours and why this shift in mindset is so essential for Nigeria.

A neighbour is defined as a person who lives nearby, normally in a house or apartment that is next-door or, in the case of houses, across the street. However, according to the bible, Jesus defined neighbour as anyone with whom you come into contact-whether Jew Samaritan nor Gentile (Luke 10:25-27). In fact, this focus on an expanding definition led to the breaking down of Jewish barriers that were constructed around the traditional interpretations of cleanness and uncleanness.

1.2 Understanding the importance of bystander CPR

Bystander CPR refers to CPR performed by someone present at the scene of a cardiac arrest, typically before medical responders arrive. In many developed countries, bystander CPR has proven to be a critical component of out-of-hospital cardiac arrest (OHCA) survival. Preparing lay responders to recognize the signs of sudden cardiac arrest, call the emergency number, and perform CPR in public and private locations is crucial to increasing

survival from this public health problem. Studies (Swor et al., 1995, 2006; Dainty et al., 2022) show that immediate CPR can double or even triple a victim's chance of survival, as well reduces the chances of having disabilities such as neurological problems for victims who survive. However, the survival rate significantly drops with each minute that passes without intervention.

Figure 2: Demonstration of CPR

Figure 3: Doctors are not Magicians. They need patients to manage and not dead victims

1.3 Lay response to Out-of-Hospital Cardiac Arrest (OHCA)

Bystander cardiopulmonary resuscitation (CPR) is critical to increasing survival from out-of-hospital cardiac arrest. However, the percentage of cases in which an individual receives bystander

CPR is actually low, at only 35% to 40% globally (Bobrow et al., 2008; Dainty et al., 2022). According to Berdowski et al (2010), the incidence of treated OHCAs was higher in North America (54.6) than in Europe (35.0), Asia (28.3), and Australia (44.0).A recent brief review in this aspect shows that data from the 2 largest cardiac arrest registries in North America, the Resuscitation Outcomes Consortium (ROC) and the Cardiac Arrest Registry to Enhance Survival, show an average bystander CPR incidence of 39% to 44% for individuals of all ages with OHCA treated by emergency medical services (Virani et al, 2021; Dainty et al., 2022). Between 2007 and 2012, a bystander CPR incidence of 50.2% (95% CI, 47.6%–52.6%) on 1738 emergency medical services (EMS)-treated OHCAs in children 0 to 19 years of age in the ROC registry was reported. These estimates were described as disappointing, yet it might have actually overestimated the true incidence of bystander CPR because the ROC registry and Cardiac Arrest Registry to Enhance Survival are generally from communities served by higher-performing—rather than a random sample of—EMS systems (Fink et al., 2016).Given the extensive benefits of bystander CPR, increasing the low rates of performance becomes a clear target for intervention.

For Africa and Nigeria in particular, your guess is as good as mine. No reliable national data base is available yet.

2.0 Conceptual Framework for CPR

Interaction of Rescuer(s) and Victim

Cardiopulmonary Resuscitation (CPR) is an attempt to restore spontaneous circulation through any of a broad range of manoeuvres and techniques. It is an emergency procedure which is performed in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person in cardiac arrest. It is indicated in those who are unresponsive with no breathing or

abnormal breathing, such as agonal respirations (Agonal gasps are involuntary and insufficient respirations that are caused by low oxygen in the blood. This is not a normal breathing and is common after cardiac arrest but decreases rapidly with time. It has been reported to be associated with increased survival to hospital discharge and so bystanders and emergency medical dispatchers should be aware of this and should not be dissuaded from initiating prompt resuscitation efforts when appropriate – Bobrow et al., 2008) It can be associated with some shaking or other muscle movement due to the struggle for oxygen). It may be performed both in and outside of a hospital. CPR traditionally has integrated chest compressions and rescue breathing with the goal of optimizing circulation and oxygenation. Rescuer and victim characteristics may influence the optimal application of the components of CPR.

Rescuer:
Everyone can be a lifesaving rescuer for a cardiac arrest victim. CPR skills and their application depend on the rescuer's training, experience, and confidence. Chest compressions are the foundation of CPR. All rescuers, regardless of training, should provide chest compressions to all cardiac arrest victims. Because of their importance, chest compressions should be the initial CPR action for all victims regardless of age. Rescuers who are able should add ventilations to chest compressions. Highly trained rescuers working together should coordinate their care and perform chest compressions as well as ventilations in a team-based approach.

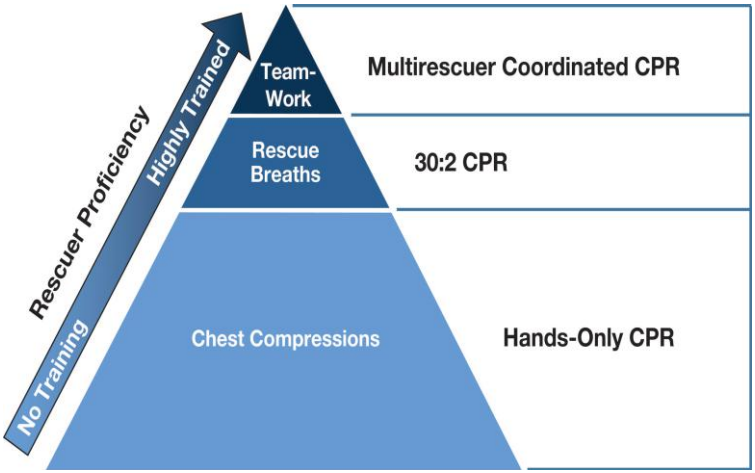

Figure 4: Building Blocks of CPR
Source: American Heart Association CPR Overview (2010, page 4)

Victim
Most cardiac arrests in adults are sudden, resulting from a primary cardiac cause; circulation produced by chest compressions is therefore paramount. In contrast, cardiac arrest in children is most often due to asphyxia, which requires both ventilations and chest compressions for optimal results. Thus, rescue breathing may be more important for children than for adults in cardiac arrest (Kitamura et al, 2010).

Early Action
Integrating the Critical Early Action: Integrating the Critical Components of CPR. The Universal Adult (Basic Life Support) Algorithm is a conceptual framework for all levels of rescuers in all settings. It emphasizes the key components that any rescuer can and should perform (Figure 4).

Simplified Adult Basic Life Support Algorithm (BLS means Basic Life Support, which refers to the type of care that first responders, healthcare providers and public safety professionals provide to anyone who is experiencing cardiac arrest or an obstructed airway)

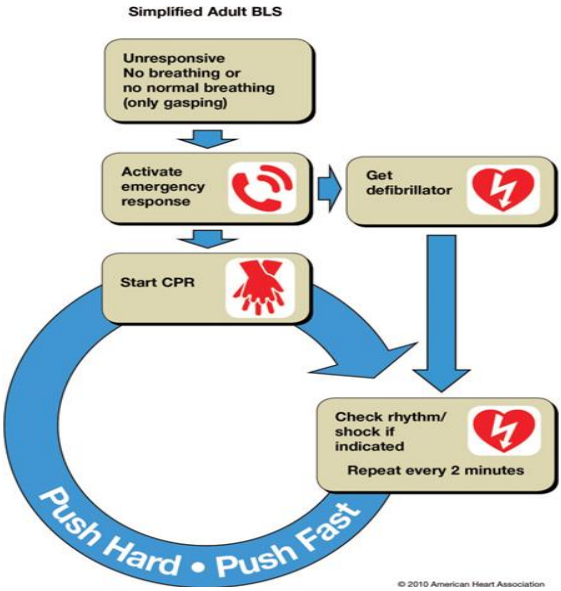

Figure 5: Simplified Adult BLS Algorithm
Source: American Heart Association CPR Overview (2010, page 5)

When encountering a victim of sudden adult cardiac arrest, the lone rescuer must first recognize that the victim has experienced a cardiac arrest, based on unresponsiveness and lack of normal breathing. After recognition, the rescuer should immediately activate the emergency response system, get an Automated External Defibrillator (AED), if available, and start CPR with chest compressions. If an AED is not close by, the rescuer should proceed directly to CPR. If other rescuers are present, the first rescuer should direct them to activate the emergency response

system and get the AED/defibrillator; the first rescuer should start CPR immediately. When the AED/defibrillator arrives, apply the pads, if possible, without interrupting chest compressions and turn the AED "on." The AED will analyze the rhythm and direct the rescuer either to provide a shock (i.e., attempt defibrillation) or to continue CPR. If an AED is not available, continue CPR without interruptions until more experienced rescuers assume care.

Recognition and Activation of Emergency Response **(Ensure Scene Safety):**

Prompt emergency activation and initiation of CPR requires rapid recognition of cardiac arrest. A cardiac arrest victim is not responsive. Breathing is absent or is not normal. Agonal gasps are common early after sudden cardiac arrest and can be confused with normal breathing (Bobrow et al., 2008). Pulse detection alone is often unreliable, even when performed by trained rescuers, and it may require additional time. Consequently, rescuer starts CPR immediately if the adult victim is unresponsive and not breathing or not breathing normally (that is, only gasping).

Chest Compressions:

The prompt initiation of effective chest compressions is a fundamental aspect of cardiac arrest resuscitation. CPR improves the victim's chance of survival by providing heart and brain circulation. Rescuers should perform chest compressions for all victims in cardiac arrest, regardless of rescuer skill level, victim characteristics or available resources. Rescuers should focus on delivering high-quality CPR:

- Providing chest compressions of adequate rate (at least 100/minute)
  Adults: a compression depth of at least 2 inches (5 cm)

Infants and children: a depth of at least one third the anterior-posterior (AP) diameter of the chest or about 1 1⁄2 inches (4 cm) in infants and about 2 inches (5 cm) in children.

- Allowing complete chest recoil after each compression
- Minimizing interruptions in compressions
- Avoiding excessive ventilation
- If multiple rescuers are available, they should rotate the task of compressions every 2 minutes

Airway and Ventilations:

Opening the airway (with a head tilt– chin lift or jaw thrust) followed by rescue breaths can improve oxygenation and ventilation. However, these manoeuvres can be technically challenging and require interruptions of chest compressions, particularly for a lone rescuer who has not been trained. Thus, the untrained rescuer will provide Hands-Only (compression-only) CPR (i.e., compressions without ventilations), and the lone rescuer who is able should open the airway and give rescue breaths with chest compressions.

Ventilations should be provided if the victim has a high likelihood of an asphyxiaal cause of the arrest (e.g, infant, child, or drowning victim). Once an advanced airway is in place, healthcare providers will deliver ventilations at a regular rate 1 breath every 6 to 8 seconds (8 to 10 breaths/minute) and chest compressions can be delivered without interruption.

Recovery Position:

If the victim recovers from gasping to normal breathing and in decreased consciousness state and does not need chest compressions or CPR anymore, the person must be put in a recovery position. The recovery position is a body position used in first aid to keep the person still, open their airways, and prevent aspiration. Aspiration occurs when a fluid or foreign object (such as food or vomit) enters the lungs or airways by accident, causing

the person to choke. The recovery position should be used also in cases of alcohol poisoning, heat stroke, or when a person is unable to maintain an upright position.

In the pre-hospital setting, the order of the CPR components performed by the healthcare provider may switch between a sequenced and choreographed model depending on the proficiency of the provider and the availability of resources

2.1 The Chain of Survival

The chain of survival refers to a series of actions that, when put into motion, reduce the mortality associated with cardiac arrest (AHA Part 12, 2010). Like any chain, the chain of survival is only as strong as its weakest link (Bossaert, 1997). The four interdependent links in the chain of survival are early access, early CPR, early defibrillation, and early advanced cardiac life support.

Figure 6: The Chain of Survival

Source: American Heart Association CPR Overview (2010, page 2)

The links in this Chain are: Immediate recognition and activation, early CPR, rapid defibrillation, effective advanced life support and integrated post-cardiac arrest care.

The "chain of survival" metaphor was first published in 1982 in a newsletter of the CPR for Citizens programme in Orlando, Florida. It was further developed by Mary Newman and used as a slogan for the 1988 Conference on Citizen CPR (Citizen CPR

Foundation) The American Heart Association adopted the concept and elaborated on it in its 1992 guidelines for cardiopulmonary resuscitation and emergency cardiac care (Cummins et al., 1992). The International Liaison Committee on Resuscitation (ILCOR) echoed the concept in 1997.

Early Access

Ideally, someone must recognise an impending cardiac arrest or otherwise witness the cardiac arrest and activate the EMS system as early as possible with an immediate call to the emergency services (AHA Part 3 2020) .Unfortunately, many persons experiencing symptoms (for example, angina) that may lead to a cardiac arrest ignore these warning symptoms or, recognising these warning symptoms correctly, fail to activate the EMS system, preferring to contact relatives instead (the elderly often contact their adult offspring rather than contact emergency services).

Early CPR

In order to be most effective, bystander CPR should be provided immediately after collapse of the patient (Eisenberg, 1979). In properly performed CPR can keep the heart in a shockable ventricular fibrillation for 10–12 minutes longer (Bossaert, 1991).

Early defibrillation

Most adults who can be saved from cardiac arrest are in ventricular fibrillation or pulseless ventricular tachycardia (AHA Part 12 2000). Public access defibrillation may be the key to improving survival rates in out-of-hospital cardiac arrest but is of the greatest value when the other links in the chain do not fail.

Early Advanced Care

Early advanced cardiac life support by paramedics is another critical link in the chain of survival. In communities with survival rates > 20%, a minimum of two of the rescuers are trained to the

advanced level. In some countries, EMS delivery may be performed by ambulance officers, paramedics, nurses, or doctors (AHA Part 12: 2010).

2.2 Brief History of Cardiopulmonary Resuscitation

The earliest recorded reference to artificial breathing is in the Old Testament of the Holy Bible, in the book of Kings, where the prophet Elisha restored the life of a boy through a technique that included placing his mouth on the mouth of the child, although there was little mention of this method for another 2000 years (Cooper et al., 2006).

In the 19th century, Dr. H. R. Sylvester described the Sylvester Method of artificial respiration in which the patient is laid on the back, and the victims arms are raised above the head to aid inhalation and then pressed against the chest to aid exhalation. The procedure is repeated sixteen times per minute. This type of artificial respiration is occasionally seen in films made in the early part of the 20th century called Sylvester Method (Wikipedia, 2006).

A second technique, called the Holger Neilson technique, described in the first edition of the Boy Scout Handbook in the United States in 1911, described a form of artificial respiration where the person was laid on the front, with the head to the side, resting on the palms of both hands. Upward pressure applied at the patient's elbows raised the upper body while pressure on their back forced air into the lungs, essentially the Sylvester Method with the patient flipped over. This form was seen well into the 1950s (it was used in an episode of Lassie during the Jeff Miller era), and was often used, sometimes for comedic effect, in theatrical cartoons of the time (see Tom and Jerry - 'The Cat and the Mer mouse'). This method continued to be shown, for historical purposes, side-by-side with modern CPR in the Boy Scout Handbook until its ninth edition in 1979. The technique

was later banned from first-aid manuals in the U.K (Time Magazine, 1978).However, it was not until the middle of the 20th century that the wider medical community started to recognize and promote artificial respiration combined with chest compressions as a key part of resuscitation following cardiac arrest. The combination was first seen in a 1962 training video called "The Pulse of Life" created by Jude, Knickerbocker and Safar (Wikipedia, 2012). In the U.S., it was first promoted as a technique for the public to learn in the 1970s (Safar, 1986). Artificial respiration was combined with chest compressions based on the assumption that active ventilation is necessary to keep circulating blood oxygenated, and the combination was accepted without comparing its effectiveness with chest compressions alone. However, research over the past decade has shown that assumption to be in error, resulting in the AHA's acknowledgment of the effectiveness of chest compressions alone (Sayre et al., 2008).

3.0 Cardiac Arrest in Nigeria: Current Landscape

Cardiac arrest occurs when the heart unexpectedly stops beating, disrupting blood flow to the brain and other vital organs. According to the World Health Organization (WHO), cardiac disease is a leading cause of mortality worldwide, with low- and middle-income countries, including Nigeria, bearing a significant share of this burden. Contributing factors include hypertension, smoking, diabetes, and sedentary lifestyles.

In Nigeria, access to emergency medical services (EMS) is limited, especially in rural areas where EMS response times are lengthy, making bystander CPR a potentially life-saving measure. Unfortunately, the awareness and skill levels required to perform CPR remain low due to a lack of public training, under-resourced health facilities, and cultural misconceptions about performing CPR on strangers. Among many others, a good example of the level of poor training and readiness for bystander CPR is what

happened when the country lost Dr Aminu Safana, a member of the House of Representative on October 17, 2007, due to sudden cardiac arrest.

Plate 1: Dr Aminu Safana (April 29,1961-October 17,2007)

Plate 2: House of Representatives in graft row and chaotic scenes. October17, 2007

Another example very close to us here was when a master's degree student collapsed at Choba Park of our University and died without any attempt from bystanders to resuscitate him in 2011.

Plate 3: An MSc Student collapsed in the classroom at Choba Campus 2011

3.1 The Role of Bystander CPR Training in Nigeria

Empowering the general population with CPR skills is one of the most effective ways to combat this crisis. Bystander CPR training can equip citizens with the confidence and competence to respond to cardiac arrests in real-time. However, introducing this in Nigeria requires targeted initiatives that consider cultural factors, community beliefs, and infrastructure challenges.

Objectives of Bystander CPR Training Programmes

1. **Raise Awareness**: Promote understanding of cardiac arrest and the life-saving potential of bystander CPR.
2. **Provide Training**: Offer accessible training programs across different regions, with a focus on schools, markets, workplaces, and community centres.
3. **Develop Infrastructure**: Ensure that AEDs (Automated External Defibrillators) are available in public spaces, where feasible.
4. **Foster a Supportive Environment**: Encourage communities to support those who are trained in CPR, building a network of citizen first-responders.

Target Audiences for Bystander CPR Training

1. **Schools**: Training children and adolescents can create a generation of CPR-proficient young adults. In July 2015, a statement entitled Kids Save Lives – Training School Children in Cardiopulmonary Resuscitation Worldwide was jointly issued by the European Patient Safety Foundation, the European Resuscitation Council, the International Liaison Committee on Resuscitation and the World Federation of Societies of Anaesthesiologists (Böttiger and Van Aken, 2015a). To address the global issue of sudden cardiac death, the statement recommends educating school children in resuscitation from the age of 12 years or earlier for 2 hours per year. The statement argues that school children and teachers are important 'multipliers' in both public and private settings, leading to an increase in the overall rate of layperson resuscitation. In addition, children learn to help others, and embedding resuscitation in related school subjects such as biology, sports or health education is meaningful and possible. The 'Kids Save Lives' statement has been endorsed by the World Health Organization (WHO) and promoted widely (Bohn et al., 2015; Böttiger and Van Aken, 2015a, 2015b; Böttiger et al., 2016; Wilks and Pendergast, 2017)
2. **Workplaces**: Employees and employers can be vital first responders in the workplace.
3. **Public Spaces**: Market vendors, bus drivers, and local merchants who spend significant time in public spaces.
4. **Healthcare Facilities**: Health workers should be encouraged to pass on basic CPR skills to family members and caregivers of patients with cardiac conditions.

3.2 The Place of Bystander Cardiopulmonary Resuscitation in Sustainable Development- the Sustainable Development Goals and the Africa We Want

Bystander CPR aligns with several Sustainable Development Goals (SDGs), particularly:

SDG 3: **Ensure healthy lives and promote well-being for all at all ages**

Target 3.4: Reduce mortality from cardiovascular diseases and other non-communicable diseases

1. Increasing survival rates from cardiac arrests
2. Reducing mortality from cardiovascular diseases

Countries with high bystander CPR training rates, such as the U.S. and Denmark, demonstrate better OHCA survival outcomes than countries with low bystander CPR intervention. Nigeria could achieve similar improvements by making CPR a core public skill.

Plate 4: Professor Deborah Lander

A Case Study

Deborah Lander, University of Kentucky Viola Professor, suddenly collapsed on her way to give lecture, but came back to life following CPR (February 2013) Additionally, bystander CPR also aligns with:

SDG 11: **Make cities and human settlements inclusive, safe, resilient, and sustainable**

Target 11.5: Reduce the number of deaths and economic losses due to diseases, including those related to health emergencies.

Bystander CPR helps build resilient communities by:

1. Enhancing emergency preparedness and response
2. Promoting community engagement and awareness

By training community members, we can empower people to act when witnessing a medical emergency, fostering a culture of collective responsibility. Moreover, CPR-trained individuals are not only prepared to save lives but can also spread knowledge, encouraging others to acquire this skill.

Plate 5: Empowering Communities Through CPR

Plate 6: Empowering Communities Through CPR Training

Indirectly, bystander CPR also supports:

SDG 1: End poverty in all its forms everywhere

Effective bystander intervention can reduce the severity of complications among survivors, which can lead to shorter hospital

stays and lower healthcare costs in the long run. Early intervention stabilizes the patient until professional help arrives, reducing the strain on emergency services. By reducing mortality and morbidity, bystander CPR helps maintain economic productivity and reduce healthcare costs.

SDG 8: Promote sustained, inclusive, and sustainable economic growth

By enhancing emergency response and healthcare systems, bystander CPR contributes to a healthier workforce and improved economic growth. Implementing bystander CPR programmes and training can significantly contribute to achieving these SDGs.

How Does Bystander CPR Impact Economic Growth?

Direct Economic Benefits

1. Reduced healthcare costs: Effective bystander CPR increases survival rates, reducing the need for prolonged hospital stays, expensive medical interventions, and long-term care.
2. Productivity gains: By saving lives, bystander CPR helps maintain a healthy workforce, reducing absenteeism and presenteeism (being present but less productive due to health issues).
3. Reduced lost productivity: Cardiac arrests can result in permanent disability or death, leading to lost productivity. Bystander CPR mitigates this loss.

Indirect Economic benefits

1. Increased human capital: bystander CPR contributes to a healthier, more skilled, and experienced workforce, attracting investments and fostering economic growth.
2. Improved quality of life: Survivors of cardiac arrests can continue contributing to their families, communities and economies.

3. Enhanced business environment: Communities with high bystander CPR rates are more attractive to businesses, talent, and investments.
4. Reduced social security and pension payments: By reducing mortality rates, governments can minimize social security and pension payments.

Economic Estimates

A study by American Heart Association (AHA) estimated that:

- Effective bystander CPR can save up to 90, 000 US dollars per life saved in medical costs.
- Increasing bystander CPR rates by 10% can result in an annual economic benefit of 1.4 billion US dollars in the United States.

Case Studies

1. Denmark's nationwide CPR training programme led to a 40% increase in bystander CPR rates, resulting in an estimated 1, 000 lives saved annually.
2. Seattle's CPR training programme reported a 50% increase in survival rates, with estimated annual savings of 10 million US dollars

The Africa We Want

Bystander Cardiopulmonary Resuscitation (CPR) aligns with the vision of 'The African We Want,' as outlined in the African Union Agenda 2063, in several ways:

Aspiration 1: A Prosperous Africa

Bystander CPR contributes to:

- Reduced mortality rates from cardiovascular diseases (Target 1.2)
- Improved healthcare systems and emergency response (Target 1.3)
- Increased productivity and economic growth (Target 1.4)

Aspiration 2: An Integrated Continent

Bystander CPR promotes:

- Regional cooperation in healthcare and emergency response (Target 2.3)
- Standardized CPR training and protocols across Africa (Target 2.5)
- Shared knowledge and best practices in healthcare (Target 2.6)

Aspiration 3: An Africa of Good Governance

Bystander CPR supports:

- Strengthened healthcare systems and emergence response governance (Target 3.2)
- Increased community engagement and participation in healthcare (Target 3.5)
- Effective policy implementation for healthcare development (Target 3.6)

Aspiration 4: A Peaceful and Secure Africa

Bystander CPR contributes to:

- Reduced violence and injuries through improved emergency response (Target 4.2)
- Enhanced community resilience and social cohesion (Target 4.5)
- Improved disaster response and management (Target 4.6)

Aspiration 5: An Africa with a Strong Cultural Identity

Bystander CPR promotes:

- Community-led health initiatives and ownership (Target 5.3)
- Cultural sensitivity and awareness in healthcare delivery (Target 5.4)
- Preservation of traditional medicine and knowledge (Target 5.5)

Aspiration 6: An Africa Whose Development is People-Driven
Bystander CPR empowers:

- Communities to take ownership of healthcare and emergency response (Target 6.2)
- Individuals to acquire lifesaving skills and knowledge (Target 6.3)
- Youth and vulnerable groups to access healthcare and economic opportunities (Target 6.5)

Aspiration 7: Africa as a Strong United and Influential Global Player
Bystander CPT contributes to:

- Global partnership for healthcare development (Target 7.2)
- Africa's voice in global health policy and decision-making (Target 7.3)
- Improved global health security and emergency response (Target 7.4)

By promoting bystander CPR, Africa can move closer to achieving the vision of 'The Africa We Want,' with improved healthcare, economic growth, and community resilience.

Policy Implications
Governments and organizations can promote bystander CPR by:

1. Implementing CPR training programmes
2. Increasing public awareness
3. Providing accessible Automated External Defibrillators (AEDs)
4. Offering incentives for CPR certification

4.0 MY CONTRIBUTIONS TO KNOWLEDGE BYSTANDER CPR IN NIGERIA

4.1 Awareness and Knowledge of Bystander Cardiopulmonary Resuscitation (CPR)

Vice Chancellor, Sir and my distinguished audience, you will agree with me that the awareness of any health issue forms the basis of the understanding of it. Therefore, your humble lecturer today decided to start with ascertaining the awareness of this important life-saving procedure among internationally agreed important target group for the promotion and training of this procedure to raise potential providers. In a cross-sectional study by **Onyeaso** (2014) in our immediate community that involved secondary school students in Obio/Akpor Local Government Area, Rivers State found that only 33.4% had heard of bystander CPR before through any means such as the television, internet, teaching, etc. The finding affirmed the urgent need for increased awareness of this important emergency life-saving procedure in this target population.

Onyeaso & Achalu (2014), in a quasi-experimental study design among secondary school students in Obio/Akpor LGA, discovered the level of pre-training bystander CPR knowledge of the students to be 8.9% compared to post-training knowledge of 88.6%, giving a highly statistically significant difference between

the pre- and post-training bystander CPR knowledge among the participants. This finding affirmed the usefulness of imparting bystander CPR knowledge on this target population, and recommended incorporation of bystander CPR teaching/training in our secondary schools.

4.2 Bystander CPR for Primary and Secondary School Teachers

Although the teaching of bystander cardiopulmonary resuscitation (CPR) to of primary and secondary schools' teachers is highly recommended and practiced internationally for the purposes of increasing potential lay person bystander CPR providers for out-of-hospital cardiac arrests, effective management of emergency situations in schools, as well as teaching of the school children the same, Nigeria is yet to move in this direction.

In the first Nigerian study on bystander cardiopulmonary resuscitation in relation to teachers in Nigeria by **Onyeaso** & Onyeaso (2017a), it was found that both primary and secondary teachers generally had poor bystander CPR knowledge, which was statistically significant. It was recommended that Nigerian school teachers should have bystander CPR training to teach their pupils and students, while incorporating the teaching and training of the procedure into the Nigerian schools' curricula as soon as possible. Similarly, **Onyeaso** & Onyeaso (2017b) found very poor pre-training bystander CPR knowledge of some student teachers which became very statistically significantly improved after their training. It was concluded that Nigerian student teachers were very useful target group in the strategy for effective CPR training in Nigerian schools to produce potential bystander CPR instructors in our communities.

Onyeaso & Onyeaso (2017c) assessed the pre-training and post-training bystander CPR theoretical knowledge of a group of Nigerian teachers. The interesting finding was that with very poor

pre-training bystander CPR theoretical knowledge of the teachers, they had very statistically significant improvement after the training. It was concluded that Nigerian primary and secondary school teachers hold promise as potential bystander CPR instructors for school children and public, if well exposed as in advanced parts of the world. Lack of adequate knowledge has been a major reason for fear and unwillingness by many laypersons across the globe to provide bystander CPR, while the training technique could be an important factor in knowledge acquisition**. Onyeaso** & Onyeaso (2019) assessed the pre-training and post-training theoretical CPR knowledge of two cohorts of Nigerian University students involving 70 participants each, using compression-only (hands-only) and the conventional (standard) techniques. The result showed that both the hands-only and conventional bystander CPR groups had very statistically significant improvements in their post-training theoretical knowledge of bystander CPR, while no statistically significant difference was found in the post-training theoretical knowledge of the participants in the two groups. It was concluded that both bystander CPR training methods were very effective in imparting bystander CPR knowledge to the participants while none proved superior to the other.

Adequate information on influence of some demographic factors (gender and age) on bystander CPR could help to adjust or improve future education in cardiopulmonary resuscitation. **Onyeaso** & Onyeaso (2017d) in a quasi-experimental study among some University undergraduate student teachers documented that no significant age impact was found on the pre-training and post-training bystander CPR knowledge of the student teachers assessed. However, there was a positive impact of male gender on post-training bystander CPR knowledge of the participants who significantly had better post-training bystander CPR knowledge. **Onyeaso** & Onyeaso (2020e) studied the possible impact of gender on the post-training theoretical

knowledge of bystander CPR involving both the conventional bystander CPR group and the hands-only bystander CPR group and that although statistically significant gender associations were found in three of the bystander CPR knowledge questions, there was no consistent gender association with either of the genders with neither of the CPR training techniques. The implication is that either of the training techniques could be used to train both male and female genders without bias.

In a study that compared the pre- and post-training bystander CPR knowledge of undergraduate student teachers and practicing teachers in primary and secondary schools (sandwich students), **Onyeaso** & Onyeaso (2017e) reported that over 85% of the student teachers had post-training better CPR knowledge compared to about 42% of the practicing teachers. In the pre-training, both groups had 'poor bystander CPR knowledge' found to be statistically significantly similar, but the student teachers' post-training bystander CPR knowledge was found to be statistically significantly better than that of the practising teachers. The conclusion was that although both cohorts had pre-training 'poor BCPR knowledge', the student teachers showed significantly better improvement in bystander CPR knowledge after the training, showing that they were better in understanding the subject.

4.3 Attitude towards Bystander CPR in our Community

Just like any other aspect of health education and promotion, the attitude of the community to bystander cardiopulmonary resuscitation (CPR) will largely determine how they can benefit from it. **Onyeaso** & Imogie (2014) reported a cross-sectional study that assessed the attitude towards bystander cardiopulmonary resuscitation (CPR) among secondary school students in our community. The target population for the study was the students in Senior Secondary School I and II in Obio/Akpor Local Government Area of Rivers State, Nigeria.

Four hundred (400) students were purposively drawn from four secondary schools in the area and served copies of a validated questionnaire. Three hundred and seventy-two (372) of the participants properly filled and returned the questionnaire, giving a response rate of 93%. The findings revealed that **98.8%** exhibited positive attitude towards learning bystander CPR, among others. It was concluded that this could form a strong basis for introduction of the teaching of bystander CPR in their school curriculum to prepare them to be effective bystanders in situations of emergency needing BCPR.

Onyeaso & Achalu (2016) reported on the influence of age, gender and school class on the attitude of secondary school students towards bystander cardiopulmonary resuscitation (CPR). The pretest-post-test design type of quasi-experimental study was adopted with participants drawn from both public and private senior secondary schools in Obio/Akpor Local Government Area of Rivers State, South-South, Nigeria. Three hundred and thirty-two (322) participants (155 males, 167 females) with two age groups (Group 1, 12–15-year-olds) and (Group 2, 16–19-year-olds) from senior secondary class 1 (SS1) and senior secondary class 2 (SS2) were assessed on their attitude towards CPR using the same questionnaire before CPR training, immediately after CPR training and six weeks post CPR training. Parametric and non-parametric statistics were used to analyze the data. We found out that while age was found to have statistically significant influence on the attitude of the participants towards bystander CPR, gender and school class did not. The study concluded that although gender and school class did not influence attitude of the participants towards BCPR, there was need for a similar study in other parts of the country with different religious and socio-cultural background.

The report by **Onyeaso** & Onyeaso (2017a) revealed that about 80% of Nigerian primary and secondary schools' teachers in the study indicated significantly positive attitude towards bystander CPR (meaning that the teachers significantly wanted bystander CPR teaching and training in Nigerian schools.

The attitude of the teachers and future teachers to bystander cardiopulmonary resuscitation (CPR) will largely determine how effective they can be as laypeople bystander CPR providers and bystander CPR trainers of the school children, and possibly the larger communities. **Onyeaso** & Onyeaso (2017e) in another quasi-experimental study, aimed at assessing the attitude of a group of student teachers towards bystander cardiopulmonary resuscitation before and after the CPR training with a cohort of 200 level student teachers in the Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt, Nigeria, reported that the participants showed positive attitudes before and after bystander CPR training with significant better post-training bystander CPR attitude. The conclusion was that the student teachers could serve as a good target in having a strong and effective future school bystander CPR training programme, as well as increasing the number of laypeople bystander CPR bystanders in the communities.

Again, **Onyeaso** & Onyeaso (2018a) showed that although neither gender nor age of the study participants revealed any statistically significant association with bystander CPR, both genders and the age groups generally showed a positive attitude towards bystander CPR. Before the CPR training, female gender and the younger age group showed better positive attitudes towards bystander CPR but the findings were not statistically significant. Conclusion: Both sexes and age groups had positive attitude to bystander CPR. However, none showed statistically significant association with attitude towards bystander CPR. It was recommended that the study should be repeated with larger sample sizes in different communities.

4.4 Willingness to teach and Self-confidence to Perform Bystander CPR

There is no doubt that willingness to perform bystander cardiopulmonary resuscitation is essential to the practice of this life-saving procedure, and trained bystander cardiopulmonary resuscitation providers are more likely to act than the untrained (Swor et al., 2006). Also, those with training do better work in actual emergencies than the untrained (Pelinka et al., 2004). In addition, the bystander CPR training techniques or methods of training could influence the willingness of participants to teach others CPR, perform it on victims of out-of-hospital cardiac arrest (OHCA) and their other general views about bystander CPR. **Onyeaso** & Onyeaso (2018b) compared the willingness of two cohorts of Nigerian undergraduate students' willingness to teach others bystander CPR after training - one group had hands-only BCPR training and the other trained using conventional bystander CPR; as well as their other views about bystander CPR. One hundred percent (100%) of the participants in both hands-only and conventional CPR training groups were willing to teach others BCPR after the trainings with high percentages of the participants willing to perform it on different victims. Their overall willingness to teach bystander CPR, perform it on victims and their other general views about bystander CPR were impressive and statistically the same in the two groups. Therefore, the type of bystander CPR training technique did not significantly influence the participants' willingness to teach and perform bystander CPR and most of their other views about bystander CPR.

Vice Chancellor Sir and distinguished audience, in all the studies (**Onyeaso** & Onyeaso, 2017a-e, 2018a, 2018b),the common finding/observation was the much enthusiasm in the training displayed by both the primary school pupils, secondary school students, University undergraduates and practicing teachers with high percentage of them indicating willingness not only to

provide bystander CPR to their relatives but to strangers and trauma victims.

It is known that many laypersons who have received bystander cardiopulmonary resuscitation training still fail to provide bystander CPR for victims of out-of-hospital cardiac arrest due to many factors such as lack of confidence, fear of causing harm to the victim, doing the wrong thing, contracting disease, fear of litigation, among others. **Onyeaso** & Onyeaso (2022c) decided to evaluate the self-confidence level of some previously trained Nigerian University undergraduate students. Out of 130 participants who were involved in the follow up studies at the retention phases, 101 who were available were served the questionnaire. All of them filled and returned the questionnaire, giving a response rate of 100%. The results revealed that statistically significant number of the participants had good self-confidence level to provide bystander CPR, while female gender was found to be significantly associated with better self-confidence to provide bystander CPR three years after their initial training.

4.5 Bystander Cardiopulmonary Resuscitation Skills (CPR Skills)

While many countries of the world have incorporated the teaching of cardiopulmonary resuscitation (CPR) into their schools' curricula, there has been little, or no effort made towards this in Nigeria. Meanwhile, ability to acquire bystander CPR skills is central to the promotion and multiplication of potential laypeople CPR providers. **Onyeaso** & Onyeaso (2016a) explored the outcome in terms of acquisition of bystander CPR skills by some Nigerian secondary school children by exposing them to the conventional CPR training. The very encouraging result was that although the children had zero bystander CPR skills before the training, they came out with very impressive significant positive changes in their CPR skills immediately after the training. This

encouraging result boosted the advocacy for the incorporation of teaching and training in bystander CPR into the curriculum of secondary school education in Nigeria.

There has been a global support for the teaching of cardiopulmonary resuscitation (CPR) in schools and teachers are expected to be trained accordingly to be effective trainers and to increase the number of potential lay person bystander CPR providers for out-of-hospital cardiac arrests (OHCA). **Onyeaso** & Onyeaso (2017g) assessed the pre-training and post-training CPR skills of a group of Nigerian student teachers in the former Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt. The work revealed that although the pre-training CPR skills of the participants were significantly very poor, they had very significant improvement after the training in all the CPR skills. Similarly, Onyeaso & **Onyeaso** (2017h) in another quasi-experimental study among primary and secondary school teachers found out that the teachers gained highly significant CPR skills, following their training. The conclusion from the two studies was that both the Nigerian student teachers and the primary and secondary teachers were good at acquiring the skills and could be promising potential CPR instructors for school children and the public, if encouraged as in the advanced parts of the world.

For more information about the CPR skills of both the professional teachers and the student teachers (undergraduate students in the then Department of Human Kinetics and Health Education, Faculty of Education of our University), **Onyeaso** & Onyeaso (2017i) decided to compare the bystander CPR skills of two groups (cohorts). The findings were that both groups had comparably significantly poor pre-training CPR skills, but the undergraduate student teachers significantly had better post-training CPR skills than the practising professional teachers who were also undergoing their first-degree programmes in the Faculty

of Education. A possible explanation for this significant difference could be the relatively younger age of the undergraduate students.

Chest compression-only (Hands-only) CPR is believed to be as effective as the conventional CPR in providing bystander CPR for victims of out-of-hospital cardiac arrest (OHCA). In addition, it is considered saver because of the absence of mouth-to-mouth breathing. Until 2018, there was no report on hands-only CPR involving secondary school students from Nigeria or any part of Africa. **Onyeaso** & Onyeaso (2018c) assessed the bystander CPR skills of some students in a Nigerian University after training them on hands-only CPR method. The study demonstrated that hands-only technique was a very effective method of imparting the bystander CPR skills to the participants, as the participants, 54 (77.1%) female and 16 (22.9%) male aged 17 to 30 years with mean age of 21.26 ± 2.92(SD) years, gave a statistically significant improvement in their CPR skills performance. Indeed, while none of the participants had up to 50% in any of the skills tested before training, majority (78.6%) had 100% score in their post-training skills.

There have been some debates on the preference of either hands-only CPR or conventional CPR for effective bystander CPR provision for out-of-hospital cardiac arrest (OHCA) victims. While many countries have tried to provide some information on this, the situation is different in Nigeria. To provide an evidence-based report, **Onyeaso** & Onyeaso (2018d) investigated and compared the CPR skills performances of two cohorts of participants after training them on either of these two CPR training techniques. This Nigerian study showed that both groups obtained satisfactory CPR skills with majority having 80%-100% excellent CPR skills performances. In addition, no statistically significant difference was found in the CPR skills of the participants in the two groups. This affirmed that both CPR

training techniques could be adequately used in producing the needed bystander CPR skills in trainees and future trainers.

4.6 The Influence of Some Demographic Factors on Bystander CPR Skills Acquisition

The need for training of schoolchildren on bystander cardiopulmonary resuscitation (CPR) as potential bystander CPR providers had been growing globally but Nigeria was still behind and lacked basic necessary data. Therefore, **Onyeaso** & Onyeaso (2016b) decided to investigate the effects of age, gender and school class on bystander CPR skills of Nigerian secondary school students, using a pretest-post-test quasi experimental study design involving 322 senior secondary school students recruited from four schools in Obio/Akpor Local Government Area of Rivers State, Nigeria. The cohort was assessed on CPR skills before CPR training, immediately after the training and six weeks later for CPR skills retention. The three null hypotheses were all accepted as both age, gender and school class were found not to statistically have any influence on the CPR skills of the participants. The interesting findings encourages bystander training for both genders, different age groups and class grades, justifying its incorporation into the school curricula.

It is certain that the quality of bystander cardiopulmonary resuscitation (CPR) by the rescuer is crucial in the outcome of out-of-hospital cardiac arrest (OHCA) victims. The importance of teachers in bystander cardiopulmonary resuscitation (CPR) and the varying influences of demographics such as age and gender in its effectiveness have been documented. **Onyeaso** & Onyeaso (2017j) assessed the association between bystander CPR skills and age and gender of future Nigerian graduate teachers. Male participants generally had better chest compressions skills, which were not statistically significant. In all, no statistically significant association was found between CPR skills and gender, as well as

for age except for the scene safety / call for help domain that had significant association with age.

The influence of gender on the quality of bystander CPR is still debatable. Using a quasi-experimental study design, **Onyeaso** & Onyeaso (2019a) investigated the impact of gender on the quality of the bystander CPR practical skills in a group of Nigerian University students involving two BCPR techniques. After the respective CPR trainings, each participant in each group was asked to carry out the CPR skills using manikins' simulations of cardiac arrest scenario. They were all assessed by an American Heart Association (AHA)-certified instructor (your humble lecturer today). Both male and female participants had good CPR skills after their trainings. Neither male nor female gender showed any statistically significant association with any of the CPR skills within and between the CPR training groups. We recommended further investigation into other factors that could influence the quality of bystander CPR by Nigerian lay rescuers.

4.7 Retention of Bystander Cardiopulmonary Resuscitation Knowledge and Skills

Bystander Cardiopulmonary resuscitation (CPR) is an important element in the "chain of survival" for the treatment of victims of out-of-hospital cardiac arrest (OHCA). Bystander CPR is a strong predictor of long-term survival while bystanders with previous CPR training are more likely to perform CPR. Although periodic retraining in bystander CPR is always encouraged for a more effective bystander CPR provision for victims of OHCA, the retention of the acquired CPR knowledge and skills is central. With this background, **Onyeaso** (2016a) carried out the first assessment of the CPR knowledge retention six weeks after the initial training and found that the students significantly retained CPR knowledge six weeks after training. This finding set the stage for more investigation into the retention of bystander CPR knowledge and skills.

Again, **Onyeaso** (2016b) reported statistically significant retention of bystander CPR skills by the same participants six weeks after their exposure to the bystander CPR training. Neither age nor gender had any significant influence on their CPR skills. The conclusion was that Nigerian secondary school students would learn and retain CPR skills and could serve as effective bystanders CPR providers in emergency situations. Incorporation of the teaching and training in bystander CPR into Nigerian secondary school curricula was recommended.

There is sufficient information globally on the effectiveness of chest compression-only CPR in providing adequate bystander CPR for victims of out-of-hospital cardiac arrest (OHCA) but there was no single report on the retention of such skills by potential providers of bystander CPR in Nigeria. For potential bystander CPR providers to provide this useful service to victims of OHCA, they must be able to retain the skills for a reasonable period of time before re-training takes place. **Onyeaso** & Onyeaso (2020a) assessed the retention of bystander CPR skills 15 months after the initial training on chest compression-only CPR in a group of Nigerian students. The participants had impressive CPR skills retention 15 months later. Only the scene safety and call for help CPR skills domain had significant loss while the remaining skills domains did not. It was concluded that chest compression-only CPR holds promise as an adequate technique for increasing the number of potential bystander CPR providers for the public in our environment, as in other climes.

Considering the known decline in CPR skills with time and the importance of adequate CPR skills in the provision of effective bystander CPR for victims of out-of-hospital cardiac arrest, knowledge of retained CPR skills after a period of training in CPR becomes useful for planning. **Onyeaso** & Onyeaso (2020b) evaluated the level of retained CPR skills in a group of Nigerian University students 15 months after standard (conventional) CPR

training. In all, average of 61.85% of them retained CPR skills of 60% and above, considered good enough for effective bystander CPR provision. There were significant losses in their CPR skills involving the scene safety and call for help, rescue breaths, and cycle/min and placement of victim in correct recovery position domains, but not in the chest compression skills. Although some of the participants had significant losses in some of the CPR skills domains, they generally had good, retained CPR skills for effective bystander CPR provision.

There was no single report on the comparative CPR skills retention rates following standard (conventional) and chest compression-only (hands-only) bystander CPR trainings in Africa. Still in search of more evidence-based data, **Onyeaso** & Onyeaso (2020c) investigated and compared the retention rates associated with these two techniques commonly used for bystander CPR provision for the public. We found that the participants in the two groups comparatively retained good CPR skills 15 months later. However, the hands-only group relatively retained CPR skills with statistically significant better retention of the cycle / min and placement of victim in correct recovery position than the conventional group. The conclusion was that both CPR training methods produced satisfactory retention of CPR skills after 15 months of initial trainings, but the participants trained using the hands-only method had better CPR skills retention. The recommendation was that either of the CPR training methods could be used to increase the number of potential bystander CPR providers in Nigeria, but preferably the hands-only CPR training method because of its superior effectiveness and efficiency.

4.8 Bystander Cardiopulmonary Resuscitation (CPR) for Nigerian Athletes

Globally, there is growing awareness on the need for effective bystander cardiopulmonary resuscitation (CPR) in managing

victims of out-of-hospital cardiac arrest. The public health burden of out-of-hospital cardiac arrest (OHCA) and the need to increase the rates of bystander cardiopulmonary resuscitation (CPR) in communities including the world of sports cannot be overemphasized (Daya et al., 2015; Berdowski et al., 2010). Despite screening of both young and older (over 35 years) professional athletes to identify risk or possible medical conditions that could predispose athletes to chest pain or discomfort, fainting or near fainting, fatigue, and difficulty breathing, particularly the occurrence of these symptoms during exercise, athletes sometimes become victims of sudden cardiac death during vigorous exercises.

Some of the causes of such sudden cardiovascular death among young athletes are known to include undetected hypertrophic cardiomyopathy, commotio cordis, inherited arrhythmia syndromes such as long QT syndrome and Brugada syndrome. Some young athletes die of aortic aneurysm rupture as in Marfan syndrome. In older athletes, sudden cardiac death is typically caused by coronary artery disease and occasionally by hypertrophic cardiomyopathy, mitral valve prolapse or acquired valvular disease. The use of illicit and performance-enhancing drugs has been implicated also in sudden cardiac death among athletes (Maron et al. 1996).

Although sudden death during exercise is not too common but it can be very devastating when it occurs. It is necessary to create awareness and have the athletes and their managers educated and trained in the knowledge and skills of bystander cardiopulmonary resuscitation (CPR) for possible out-of-hospital cardiac arrest (OHCA) victims. In advanced parts of the globe, we have many athletes who suffered from sudden cardiac arrest during athletic activities such as football games and survived due to interventions through timely bystander CPR such as Fabrice Muamba on March 17, 2017. He is alive today. Meanwhile, our hero, gifted player

and lawyer, Samuel Okwaraji Esq who collapsed on the field of play on August 12, 1989, here in Nigeria did not make it.

Plate 7: Fabrice Muamba

Plate 8: Samuel Okwaraji

4.9 Bystander CPR Knowledge and Practice among Nigerian Athletes

In Nigeria, there is still paucity of information concerning professional athletes and bystander cardiopulmonary resuscitation. Therefore, **Onyeaso** & Onyeaso (2019b) assessed the bystander CPR theoretical knowledge and its practice in a group of professional athletes from the Bayelsa State Sports Council, Bayelsa State, Nigeria. The study revealed that majority of the athletes had very poor knowledge of bystander CPR and as such could not practice it on victims of OHCA with only 5(3.9%) who claimed they had carried out chest compression with mouth-to-mouth ventilation on victims before. We recommend that bystander CPR training and re-training should be organized for the athletes to prepare them for emergencies generally, and particularly for their colleagues who might need such help.

A national cross-sectional questionnaire-based survey of Nigerian athletes was carried out involving 25 different sporting events. The participants at the 21st National Sports Festival that held in Delta State, Nigeria filled the questionnaire, which was continued after the festival at some of their various states. **Onyeaso** et al (2023a) aimed at assessing the level of previous training, practice

and present knowledge of bystander CPR among Nigerian athletes. In all, 419 athletes participated in the study - 278 (66.3%) males and 141(33.7%) females with age range of 11- 49 years and mean age of 23.43 + 5.66 (SD). On average, 67.86% of the athletes had never had any previous bystander CPR training while 55.73% never practiced the procedure. Significantly more of the athletes never had CPR bystander training before this study, as well as no previous practice, which did not significantly differ between contact and non-contact sports athletes. Significantly more of them had poor bystander CPR theoretical knowledge that did not vary significantly between contact and non-contact sports athletes, with average of only 27.23% of the athletes giving correct answers. The findings agreed with the need for urgent organised and sustainable bystander CPR training facilities for Nigerian athletes.

Despite the increasing global concern for out-of-hospital cardiac arrest (OHCA) and the impact of sudden cardiac arrest among athletes, there is paucity of data on bystander cardiopulmonary resuscitation (CPR) among athletes in Africa, especially in Nigeria. Effective practice of bystander cardiopulmonary resuscitation (CPR) will depend to a good extent on the perception and attitude of any target population towards this life-saving technique. **Onyeaso** & Onyeaso (2020d) studied the attitude of a group of Nigerian athletes towards bystander CPR. Generally, the athletes showed statistically significant positive attitude towards bystander CPR. Participants' genders showed positive attitudes towards bystander CPR with the male gender having statistically significant better positive attitude. Interestingly, the age of the athletes generally had statistically significant associations with their willingness to provide bystander CPR for the elderly and children, while the 13-16 age group had significant associations with willingness to perform CPR for children and performance of compression-only CPR. This positive attitude of the participants affirms the correctness of

our recommendation for bystander CPR training and retraining for them. **Onyeaso** et al (2023b) assessed the perception and attitudes of the same group of Nigerian athletes that participated in 2023 National Sports Festival at Delta State and found that the participants significantly had positive perception of and attitude towards bystander CPR, which did not vary significantly with respect to their participation in contact or non-contact sports. We recommended that the federal government, sub-national governments, corporate bodies and sports-loving Nigerians should actively support the establishment of sustainable programmes for bystander CPR teaching and training of athletes in the country.

In a further attempt to contribute to the limited knowledge concerning professional athletes and factors affecting their knowledge and attitude towards bystander CPR, **Onyeaso** et al (2023c) assessed the associations of age, gender and years of experience as athletes with knowledge and attitude towards bystander CPR. The study revealed that neither age, gender nor years of experience as athletes of the participants gave any statistically significant associations with their bystander CPR knowledge and attitude towards this life-saving procedure. The meaning of this finding was that while the athletes generally indicated positive attitude towards this life-saving procedure, this did not vary with age, gender or the number of years they had been as professional athletes.

4.10 Bystander CPR and COVID-19 Pandemic

Vice Chancellor Sir, it is a common knowledge that the COVID-19 Pandemic affected many aspects of human life including healthcare services, transportation, housing, social life, etc. **Onyeaso** & Onyeaso (2022a) investigated the impact of COVID-19 on previously bystander CPR-trained individuals in providing this important emergency life-saving procedure (bystander CPR) to victims of out-of-hospital cardiac arrest (OHCA). The study found that COVID-19 significantly impacted negatively on the

willingness of the participants to provide bystander cardiopulmonary resuscitation to victims of OHCA. Meanwhile, gender had no significant impact on their willingness to provide this life-saving service, although higher percentage of females showed willingness than the males. However, it is important to inform this audience that although the COVID-19 affected the willingness of the participants (Nigerians) to provide bystander CPR, significant number of the study participants expressed willingness to still perform BCPR when necessary, despite the COVID-19 Pandemic. This finding could be a good reflection of the good neighbourliness or humanity that Nigerians are known for.

Interestingly, another paper that compared the willingness to provide bystander CPR for victims of OHCA by individuals that previously received bystander CPR training and those who had not (**Onyeaso** & Onyeaso, 2022b) confirmed the encouraging humanity still in existence among Nigerians as both bystander CPR-untrained and bystander CPR-trained indicated significant willingness to provide bystander CPR for victims irrespective of age or gender, despite the COVID-19 Pandemic. Our dear digital VC Sir and this distinguished audience; it will interest you to know that these studies on COVID-19 and bystander CPR have contributed in addressing part of the concerns of American Heart Association (AHA) Scientific Statement on Suggestions for Change and Areas for Future Research published on 26 April 2022 by Circulation, Volume 145(17): Pages e852-e867.

4.11 On-Going Advocacy for Introduction of Bystander Cardiopulmonary Resuscitation into the Nigerian Schools' Curricula

Unlike in Nigeria, the incorporation of bystander cardiopulmonary resuscitation (CPR) into the primary and secondary schools' curricula has been done by many advanced countries. Bystander Cardiopulmonary Resuscitation is indeed an

important lifesaving first aid skills practiced throughout the world. It is perhaps the only known effective method of keeping a victim of cardiac arrest alive long enough for definitive treatment to be delivered (Hazinski, 2010). The International Liaison Committee on Resuscitation (2003) strongly recommended that instruction in CPR be incorporated as a standard part of the school curriculum. Although many school systems in other parts of the world have complied with these international standards (Isbye et al., 2007; Lorem & Palma, 2008), the situation is different in Nigeria, except the effort being made by your lecturer today.

Cardiopulmonary resuscitation (CPR) is not just becoming mandatory for students, but for teachers as well. Following the recommendation of the International Liaison Committee on Resuscitation in 2003, the American Heart Association (AHA) recommended that schools should establish a goal to train every teacher in CPR and first aid as a part of their preparation for a response to medical emergencies on campus (Hazinski et al., 2004). Most States in the USA where it is required, they are doing it as part of teacher certification or re-certification (School CPR). In addition, there are bills in many states that are in various stages of implementation (School CPR). According to the REVISED SCHOOL CODE (Act 451 of 1976), beginning from July 1, 2004, the superintendent of public instruction shall not issue an initial teaching certificate to a person unless the person presents evidence satisfactory to the superintendent of public instruction that the person has successfully completed a course approved by the department in first aid and cardiopulmonary resuscitation, including a test demonstration on mannequin, and has successfully completed instruction approved by the Department in foreign body airway obstruction management, among others. Similarly, Indiana Department of Education has made it mandatory that applicants applying for an initial teaching license (and at the time of conversion or renewal of any kind) must have successfully completed training in CPR that include a test

demonstration on mannequin (CPR-Heimlich Manoeuvre – AED Certification, 2016).

In line with my on-going advocacy for the incorporation of bystander CPR into the schools' curricula in Nigeria, **Onyeaso** & Onyeaso (2017k) sought the views of some Nigerian primary and secondary schools' teachers on the introduction of bystander CPR into their schools' curricula. Three hundred teachers aged 35 to 45years – 88 (29.33%) male and 212 (70,67%) female from schools in different States in Nigeria who came for the 2015 Post NCE programme at the University of Port Harcourt participated in the questionnaire-based study. The summary of the result was that the teachers strongly indicated that they would want to be bystander CPR-trained, would also want to teach the same to their pupils and students, as well as strongly supporting its introduction into the schools' curricula.

4.12 International Recognitions

Our dear digital Vice Chancellor, under whose supervision I was made a Professor of Health Education, and this distinguished audience, permit me to humbly inform you that the international community has on several occasions recognised my contributions to knowledge in bystander CPR, which has resulted in numerous reprint requests by scholars across the globe for many of my publications, as well as requests to have many of the publications turned into books. An excerpt from the website of my global recognition as the **World Champion 2018** in Health Education (CPR Skills), which led to the subsequent award of Honorary Degree of Doctor of Science (DSc) by the International Agency for Standards and Ratings, as well as a **Fellow** at the Directorate of Health Education, International Agency for Standards and Ratings (IASR)is shown below:
(Nigeria Wins World Championship Dr. Mrs. Adedamola Olutoyin Onyeaso is World Champion in Health Education out of 89 countries - USA NEWS CORP (google.com).

CP Skills (Health Education) Day

'21 April is celebrated as CPR Skills (Health Education) Day around the world by the International Agency for Standards and Ratings in recognition of World Champion in Health Education (CPR Skills)- Dr. Mrs. Adedamola Olutoyin Onyeaso the Great Legend on Earth. CPR Skills (Health Education) Day is devoted for activities in CPR Skills (Health Education), Training and Awareness on CPR Skills (Health Education), Seminar on CPR Skills (Health Education), Global Events, Workshop on Health Education CPR Skills (Health Education), Conference on CPR Skills (Health Education). Research Centers, Colleges, Universities, Institutes, Schools, Center of Excellence, Journals of CPR Skills (Health Education), Societies working on CPR Skills (Health Education) celebrate CPR Skills (Health Education) Day in the celebration of great efforts by Dr. Mrs. Adedamola Olutoyin Onyeaso. Inception of CPR Skills (Health Education) Day is 21 April 2019. World Champion Dr. Mrs. Adedamola Olutoyin Onyeaso is a Source of Inspiration in CPR Skills (Health Education) global meetings and has triggered the importance of CPR Skills. Activities on Health Education Day can be posted and submitted on world championship web page for international media coverage' (Excerpt from the official IASR website Announcement)

4.13 Editorial Contributions

As a Reviewer for many scientific journals, I have been serving creditably with letters of commendations from some of the journals in appreciation of my humble contributions.

4.14 The Red Cross

Red Cross is recognized internationally for her roles in emergency services and training of bystanders CPR providers along with other first aids. I have made some contributions in the coordination, impacting knowledge and strengthening this body in Rivers State, especially at the University of Port Harcourt Detachment

Plate 9: Induction as Red Cross Matron Uniport Detachment

Plate 10: Induction as Red Cross Matron Uniport

Plate 11: Acceptance Speech as Matron

Plate 12 : Red Cross Matron and Commandants (Former Uniport Students)

Plate 13: Former Uniport students (NowAbroad)

Plate 14: Match Past Ceremony with the Rep of VC (DVC, Acad.)

Plate 15: Bystander CPR Training, Oginigba

Plate16: CPR RAP Song On Power Point, Oginigba

Plate 17: Group Practical Session, Oginigba

Plate18: Hands-On Training Session, Oginigba

Plate 19: Power Point Training Session, UDSS

Plate 20: Prof Imogie In UDSS during the Training

Plate 21: Hands-On Skills Training, UDSS

Plate 22: Group Practical Skills Session, UDSS

Plate 23: Group Practical Session, Brainfield

Plate 24: Group Practical Session, Brainfield

Plate 25: Group Practical Session, Brainfield

Plate 26: Hand-On Skills Practice, Eneka

Plate27: Group Practice Eneka

Plate 28: Power Point Training Session, Oginigba

Plate 29: Power Point Training Session, UDSS

5.0 WHAT NEXT? (MY FUTURE PLANS)

1. Our dear digital VC Sir, in addition to my other duties as a Professor of Health Education in this University, I hope to continue the advocacy for bystander CPR in the country through more research and partnership with the Ministry of Health, non-governmental organizations, and private sector stakeholders, such as corporations and community leaders, for funding and promotion of the programme.
2. Understandably, there is obvious population gap (inadequate or gap in the representation of specific demographics or groups such as different religious groups or socio-economic groups) in bystander CPR research in Nigeria, which I intend to contribute to bridge.
3. Actively marking the Health Education (CPR Skills) Day on **21 April** every year as much as possible, by God's grace.

6.0 RECOMMENDATIONS

To improve bystander CPR effectiveness in Nigeria, I recommend the following:

1. Integration of bystander CPR training into the Nigerian educational curriculum and possibly making it a mandatory subject. This could be done by implementing a national bystander CPR strategy as explained below:

Implementing a National Bystander CPR Strategy

- Curriculum Development: Develop a standardized curriculum for CPR training, adapted to Nigeria's socio-cultural context and available resources. This curriculum should be practical, engaging, and accessible, allowing individuals of various educational backgrounds to understand and apply CPR techniques.
- Pilot Programmes and Partnerships: More pilot programmes in select urban and rural areas with different cultural and religious beliefs would help identify and address unique challenges. Partnering with the Ministry of Health, non-

governmental organizations, and private sector stakeholders, such as corporations and community leaders, would help fund and promote the programme.

- Technology and Digital Outreach in Nigeria's growing digital landscape, mobile applications and online platforms could be leveraged to provide CPR tutorials, remind trained individuals to refresh their skills, and promote success stories of bystander CPR interventions.
- Legal Framework: The implementation of "Good Samaritan" laws that protect bystanders performing CPR from legal liability can encourage more people to step forward in emergencies. Awareness campaigns to explain these protections are also essential to gaining public trust.

Monitoring and Evaluation of Bystander CPR Initiatives

For a successful programme, monitoring and evaluation are crucial. We can track programme success through metrics such as:

- The number of individuals trained and certified.
- Increased survival rates from OHCA in areas where training has been implemented.
- Community feedback and willingness to participate in refresher courses.
- The number of public locations equipped with AEDs

Challenges and Limitations

The initiative may face challenges, including limited funding, cultural resistance, and logistical difficulties in reaching remote areas. However, these can be mitigated with community partnerships, government support, and long-term commitment.

2. In addition to bystander CPR, age-appropriate first aid instructions including topics like bleeding, choking, drowning and burns should be integrated into the Nigerian schools' curricula beginning in the primary years and refreshed

annually, all within the broader context of being confident and willing to help others. With the right training and support, schoolteachers can effectively deliver first aid instructions to their students, as well as providing bystander CPR training to the children. This means that governments at all levels should employ more health educators as teachers at the primary, secondary and tertiary levels.

3. Advocacy efforts should target both national and regional governments, as well as the Senate and House of Representatives.

4. Establishment of a **Bystander Cardiopulmonary Resuscitation Centre** for training of laypeople including our staff and students here in the University of Port Harcourt. The Department of Health Promotion, Environmental and Safety Education, Faculty of Education would be able to coordinate this programme. However, collaboration with UPTH is encouraged to make the chain of survival and SDG 17 more realistic and achievable in our community.

5. To offer bystander CPR training as part **of General Education Studies (GES),** starting from the University of Port Harcourt (we must lead the way), while providing certification of international standard to participants.

7.0 CONCLUSION: A Call to Action

Our dear digital Vice Chancellor and this distinguished audience, you will agree with me that by investing in bystander CPR initiatives, communities can reap economic benefits while saving lives. Bystander CPR training is not just a medical or health skill but a means of fostering a society where we are all our neighbours' keepers. By equipping everyday citizens with bystander CPR skills, we create a network of first responders capable of making a significant difference in emergency

situations. I urge all stakeholders—governments, healthcare professionals, educators, and community leaders—to invest in this transformative programme. We can truly be our neighbours' keepers. Together, we can make bystander CPR a norm in Nigeria, improving survival rates, strengthening community bonds, and ultimately, building a safer and more responsive nation

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PROFESSOR ADEDAMOLA OLUTOYIN ONYEASO

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RN, RM (UCH, Ibadan), B.Ed, M.Ed (Ibadan), PhD (Uniport), DSc (Honoris Causa), FIASR.

Adedamola Olutoyin Onyeaso (Nee Osho), the miracle baby of Pa & Mrs Solomon Owolabi Osho of Ikorodu in Lagos State, was born on March 13, 1966, in Ibadan, Oyo State. She finished her primary school education at the United Missionary College (UMC) Demonstration School in 1977, and the secondary school education at the Christ High School, Ibadan in1983. Her nursing training was at the School of Nursing, UCH, Ibadan and she became a registered Nurse in 1988 and a registered midwife in 1991. She went further to obtain the Bachelor and Master's Degrees in Health Education from the University of Ibadan in 2004 and 2006, respectively. In September 2008, she was employed as an Assistant Lecturer in the Department of Human

Kinetics and Health Education, Faculty of Education, University of Port Harcourt. She obtained her PhD in Health Education in 2014, being among the first batch of PhD graduates in the Department. She is an American Heart Association (AHA)-certified Instructor in Basic Life Support and a Certified Artificial Intelligence (AI) Practitioner. Recently, she became trained and certified in Understanding and Implementing the UNESCO Guidance for Generative AI in Education and Research.

The hardworking Adedamola Olutoyin Onyeaso rose through the ranks and became a Professor of Health Education on October 01, 2023, in the Department of Health Promotion, Environmental and Safety Education, Faculty of Education, University of Port Harcourt. Before joining the services of University of Port Harcourt, she was an Instructor and the Coordinator of the Basic Life Support Programme at the University College Hospital, Ibadan. She was an Associate Dean (Female), Students' Affairs Department, University of Port Harcourt (2014-2017) during which, among other things, God used her to avert a looming students' demonstration. She was an effective ASUU Investment Secretary (2014-2018), as well as ASUU Co-operative Internal Auditor (2018-2022). She is currently the Coordinator of Teaching Practice Unit, Faculty of Education since 2022.

The main research focus of Professor A O Onyeaso has been on Bystander Cardiopulmonary Resuscitation (Bystander CPR), which has brought University of Port Harcourt to the global spotlight on Health Education as she won the 2018 World Championship in Health Education (CPR Skills), including the designation of April 21 every year as "CPR Skills (Health Education) Day." In addition, she was made a Fellow of the Directorate of Health Education, International Agency for Standards and Ratings (IASR), and was awarded the Honorary Doctor of Science (DSc) by the same body. Also, she was recognized among the World's 500 Most Influential Experts in

Health Education in 2018. Much earlier in 1991, the Management of the University College Hospital (UCH), Ibadan recognized her exemplary character and leadership skills during her midwifery training and declared her the Best-Behaved Student in her Graduating Class.

Professor A O Onyeaso, who has attended and presented scientific papers at several conferences, has over 65 publications in reputable scientific journals across the globe. She has supervised over 40 undergraduate students and 15 postgraduate students. Adedamola Olutoyin Onyeaso has also received many commendation letters for her editorial services to several journals outside the country. Among other professional bodies, she belongs to the Nigeria Association of Nurses and Midwives (NANM), National Association of Physical and Health Educator, Sports and Dance (NAPHER.SD), Health Promotion Research Association of Nigeria (HEPRAN), Nigeria Association of Health Educators (NAHE), School Health Educators and Professionals Association in Nigeria (SHEPAN), National Association of Artificial Intelligence Practitioners (NAAIP), and the Matron of the Nigerian Red Cross (Uniport Detachment).

Professor Adedamola Olutoyin Onyeaso is very happily married to her lover, mentor and best friend, Professor Chukwudi Ochi Onyeaso, and the marriage is blessed with children and grandchildren.

Professor Owunari Abraham Georgewill
Vice Chancellor