

# 2022 WITSA Global Innovation and Tech Excellence Awards Nomination Form

The 2022 WITSA Global Innovation and Tech Excellence Awards (formerly known as *the Global ICT Excellence Awards*) will be presented to select individuals, academic institutions, corporations, NGOs or governments whose use and applications of digital technologies exhibit exceptional achievement within the following broad categories:

Private Sector/NGO	Public Sector
Digital Opportunity/Inclusion Award	Digital Opportunity/Inclusion Award
Smart Cities Award	Smart Cities Award
Sustainable Growth/Circular Economy Award	Sustainable Growth/Circular Economy Award
Innovative eHealth Solutions Award	Innovative eHealth Solutions Award
Public/Private Partnership Award	Public/Private Partnership Award
E-Education & Learning Award	E-Education & Learning Award
Emerging Digital Solutions Award	Startup Ecosystem Award

In addition, a *Chairman's Award* will be presented to a nominee selected from the entire pool of candidates from all award categories.

Candidates for these Awards are nominated by ICT experts from around the world who span over 80 countries/economies. The 2022 *WITSA Global ICT Excellence Awards* will take place in conjunction with the September 13-15, 2022 World Congress on IT in Penang, Malaysia (<https://wcit2022.com>/<https://wcit2021.org.bd/>).

## Innovative eHealth Solutions Award

Award #1: Individuals, academic institutions, corporations, or NGOs

Award #2: Government authorities

**Award Criteria-** This Award recognizes Individuals, healthcare institutions, academic institutions, corporations, NGOs or governments that have made remarkable and successful efforts at utilizing ICTs as a tool to promote health and health care such as telehealth, mHealth (mobile health), eHealth or through eLearning, electronic health records, big data, legal frameworks, or social media. Solutions utilized may range from provision of information to keep citizens healthy, to support for public health in communities, care and support systems in health facilities, and from all the above the data needed to inform management and policymakers.

This award also recognizes any companies, individuals, NGOs or other entities who successfully develop or utilize information and communications technology, artificial intelligence, big data or other innovative technologies in the fight against COVID-19. Examples of solutions include vaccine distribution/logistics, vaccine digital certification or other telehealth apps, as well as technologies and solutions which enable productive and safe workspace in the “new normal”.

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**YOUR NOMINEES (limit three nominations per award category).** *Please specify whether the nominee(s) are for the private or public sector category.*

Private/Public Sector: Private (NGO): Ren Ci Hospital

Project Name: CARES4WOUNDS

**REASONS FOR NOMINATION** (NOTE: It is important that you make a detailed description of the nominee and why you think the nomination is justified. The absence of a detailed summary of qualifications as they *relate* to the above-mentioned award description will make it difficult for the awards committee to make an appropriate assessment of the candidate):

**SUPPORTING INFORMATION:** Please send any supporting information to the address above, including information from candidate (i.e. excerpt from program description, web site print-out, press release, etc.)

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[Please insert below the Product or Solution Synopsis, Impact, Case Studies etc.]

### **Ren Ci Hospital – Company Profile**

Founded on the principles to serve all regardless of race, religion and background as a charity healthcare institution in 1994, Ren Ci serves needy beneficiaries with the primary mission of providing affordable medical, nursing and rehabilitative care services for the community.

We have stood by time and challenges to grow. Our suite of care services continues to play an active role in the growing prevalence of the silver population in Singapore through supporting the healthcare needs of the senior community.

Our work has also garnered the generous support from donors from all walks of life. Every contribution has empowered our beneficiaries with a new lease of hope. Partnering the community and our volunteers remains pivotal to the sustainability of our care deliveries, providing those we serve with the hope for quality and meaningful living.

### **Supporting Information:**

1. *About CARES4WOUNDS (Tetsuyu Video – Sep 2020):*  
<https://youtu.be/qOm32ICUhPk>
2. *Winner of Techblazer Awards 2021 (Best Adoption Category - NGO):*  
<https://techblazerawards.sg/Past-Winners/2021-Winners/Ren-Ci-Hospital>

科技公司研发智能聊天机器人 获科技先驱奖创新科技银奖



说一口流利新加坡式英语的人工智能聊天机器人... 本地科技公司WIZAI所研发的人工智能聊天机器人 (iTalkBot) 周二在第四届科技先驱 (Techblazer) 颁奖典礼荣获最具潜力创新科技银奖。

这一聊天机器人利用自动语音识别、自然语言理解与处理等技术... 民众并不知道和他们对话的是机器人而不是客服人员。

“我们的聊天机器人能主动打电话给医院的病患... 这项技术可在约20秒内建议诊断结果与产出报告。”

本届奖项也新增非政府机构最佳科技奖... 仁慈医院护理群总监沈雅琪 (70岁) 说, 伤口预料的工作复杂, 若没有相关经验, 可能无法准确辨识伤口的深度以及发炎的情况。



- 3. Ren Ci on Channel 8 News (Video – Aug 2018): https://youtu.be/IFmqzEPXIbM
4. Ren Ci CARES4WOUNDS journey (Video – Aug 2018): https://youtu.be/6drTJfrQTaU

About CARES4WOUNDS

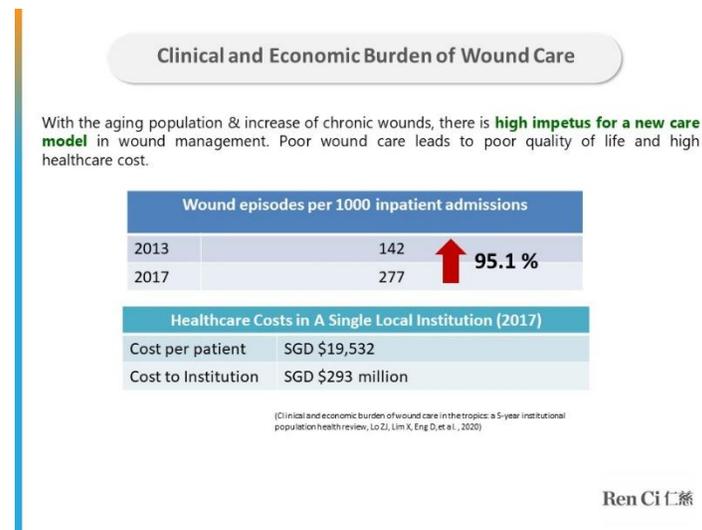
CARES4WOUNDS is an Artificial Intelligence (AI)-enabled tool for wound imaging, management and monitoring. It comprises of a mobile app for wound assessments with automatic 3D wound measurements and tissue classification. It also has a web tool that supports remote monitoring, teleconsultation, internationally-approved wound assessment workflows and treatment guidance.

Ren Ci Hospital (RCH) is the first in community care sector to adopt this innovation, which has proven to improve patient care & staff productivity. Based on a time study, CARES4WOUNDS reduces assessment & documentation time from 8 mins (manual) to 1 min (automation) per wound. This amounts to a time saving of 7 mins & translates to productivity gain of an est. 546 hours per year.



## Reasons for CARES4WOUNDS

In Singapore, there's a high prevalence of chronic wounds in elderly patients. Poor wound care leads to poor quality of life & increases hospitalisation, driving up healthcare cost. Undetected deteriorating wounds may lead to sepsis, osteomyelitis and amputation. With the aging population & higher rates of diabetes, there is high impetus for a new care model in wound management.



Besides the above, the following 3 challenges also drove Ren Ci Hospital to develop and adopt CARES4WOUNDS.

**1. Manpower Challenges & Varying Clinical Expertise:** Wound Care is a specialised skill & the level of clinical expertise may vary among staff (nurse) depending on their clinical training. It is also becoming increasingly challenging to hire nurses let alone specialist nurses in the Community care sector. Embedded algorithms in CARES4WOUNDS application guide users on treatment options, enabling less skilled staff to deliver standardised high-quality assessments. In addition, Ren Ci has 4 main care facilities (i.e. Community Hospital, Chronic Sick Unit, 2 Nursing Homes) across Singapore, the teleconsultation feature allows specialised wound care nurses to provide supervision remotely. This reduces staff travelling time & cost, & is relevant in today's COVID-19 pandemic where staff should avoid crossing beyond their assigned work zone.

**2. Lack of Standardised Practice:** The conventional method relies on manual wound observation & measurement using ruler & probes, which is prone to error and uncomfortable for patients. Using the iPhone camera, CARES4WOUNDS software captures and automates 3D wound measurements & tissue classification under 1 sec. Thereafter, it provides the relevant treatment guidance through its inbuilt AI algorithms. This automation enables consistent measurements & standardised wound management across different care staff.

**3. Incomplete Documentation:** Wound care documentation involves many details & staff may miss out key info which affects the tracking of wound healing & treatment rendered. With CARES4WOUNDS, staff document in a step-by-step manner, facilitated by a dropdown list.

## Challenges in Wound Care



### **Lack of Standardised Practice**

Manual wound observation using ruler/probes prone to human error & uncomfortable for patients



### **Varying Clinical Expertise**

Wound Care is a specialised skill & expertise may vary due to clinical training & exposure



### **Incomplete Documentation**

Involves many details & affects the tracking of wound healing & treatment rendered

Ren Ci 仁慈

## **Co-developing CARES4WOUNDS with Tech Provider**

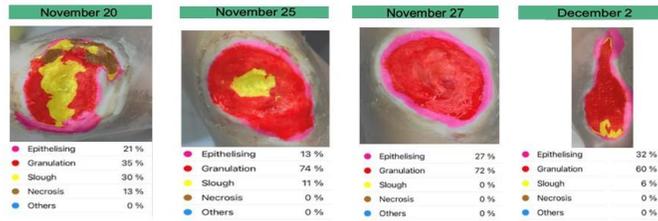
Ren Ci Hospital collaborated closely with Tetsuyu Healthcare Holdings (a Singapore Healthtech company which aims to create sustainable social impact through greater access to quality care via affordable innovation) to co-develop and implement CARES4WOUNDS.

A 2-phased pilot was conducted from 2017 to 2019. For Phase 1, Ren Ci guided Tetsuyu on key user needs and provided clinical inputs such as wound care management workflows etc. Working together, 3D imaging, semi-autonomous measurements, standardised assessments tools, remote trending were implemented and piloted at Ren Ci. For Phase 2, the focus was on the development of fully automated measurement and documentation, healing progress analytics, treatment guidance and teleconsultations.

In the process, over 1,000 images were collected which eventually contributed to the machine learning and application of AI for wound healing guidance and infection detection. Ren Ci also conducted training and sharing of the solution with others in the community care sector. From this journey, what was evident was that we were not just developing a solution that would benefit Ren Ci but also the larger community care sector.

## Developing a Solution for the Community Care Sector

Collected over 1,000 images which contributed to machine learning  
(Benefit both Ren Ci & future users)



Ren Ci 仁慈

## Developing a Solution for the Community Care Sector

### Training and Experience Sharing with the Sector



Ren Ci 仁慈

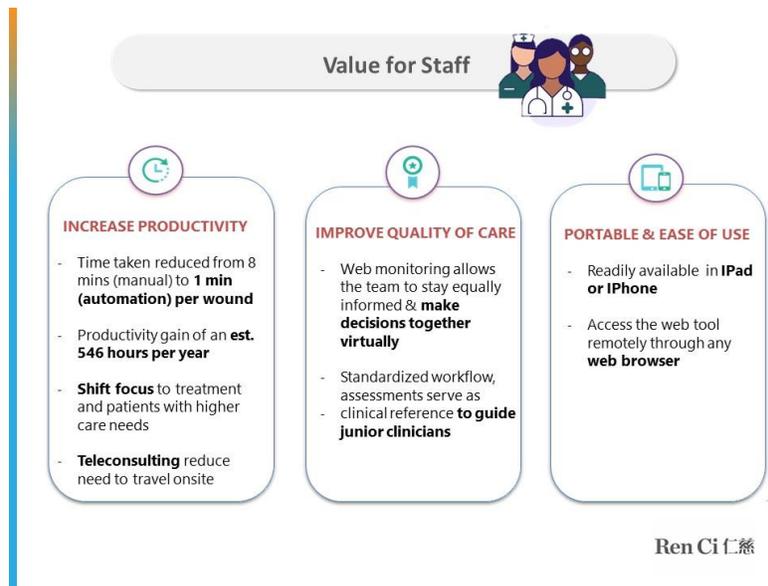
## Value and Impact of CARES4WOUNDS

### 1. Value for Staff

Notably, patients in the community care sector are at higher risk of chronic wounds as they have multiple comorbidities & reduced mobility. Wounds require regular re-assessment & treatment adjustment which is time-consuming & expensive. In Ren Ci, we have an estimated 90 wound assessments per week. Based on a time study, CARES4WOUNDS reduces assessment & documentation time from 8 mins (manual) to 1 min (automation) – time saving of 7 mins per wound.

At full deployment of 16 units across all facilities, there is a total productivity gain of est 546 hours per year. With less time spent on wound care, manpower can be redeployed to perform other essential tasks such as caregiver training and attending to those with higher care needs etc. Staff can shift their focus from documentation to treatment, which is now also better enabled by the embedded AI algorithms. With the teleconsulting module, there are also further time and cost savings to be reaped as staff no longer have to travel onsite for most cases. This function is especially useful during the peak of the COVID-19 pandemic where staff should avoid crossing care facilities.

CARE4WOUNDS not only allows staff to work smarter & faster but enables RCH to optimise its manpower. Through the web monitoring tool, all members of the care team are able to stay equally informed & make decisions together virtually.

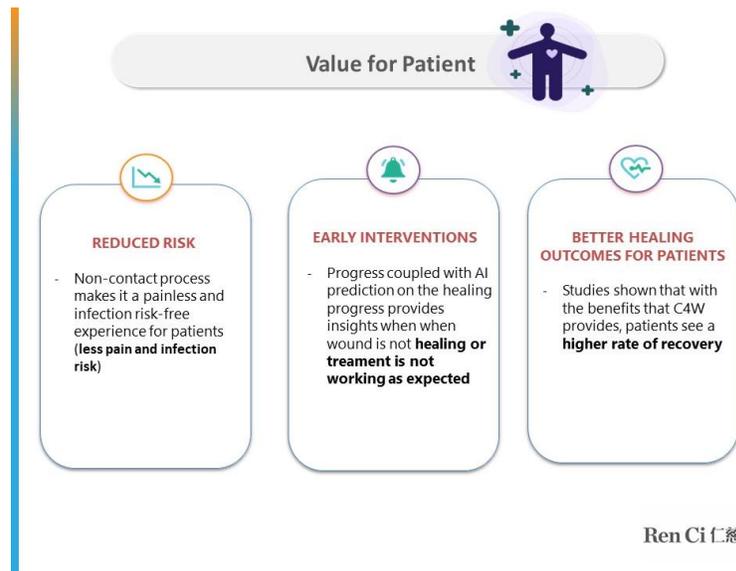


## 2. Value for Patients

Besides levelling up staff productivity, CARES4WOUNDS also improves patient comfort and care. Unlike the conventional measurement method with ruler & probes, CARES4WOUNDS need not be in direct contact with the wound. This decreases infection risk & is more comfortable for patients (no pain). Progress trending via charts coupled with AI prediction on the healing progress (targeted time for wound to heal) provides insights when a treatment is not working as expected, this prompts staff to review other causes such as diet etc.

CARES4WOUNDS also has been found to have a positive impact on wound healing time. It reduces the healing time of high severity cases from 4 months to 3 months. For very high complicated wounds, C4W reduces healing time from 1 year to 6months. This is because the solution helps to trend healing progress very closely and alerts staff of non-healing wounds for early intervention.

There are many potential benefits to be reaped with CARES4WOUNDS. Importantly, the solution has not only enhanced staff productivity but allow staff to better the medical care & deliver value to patients.



### Potential for CARES4WOUNDS to be scaled and adopted by others

CARES4WOUNDS is highly scalable as it is application and software based which is readily available on App Store. The only hardware device required is the iPhone and no other specialised equipment is required. This makes the solution easy to distribute and access, and can be adopted across various care facilities (i.e. from hospital, community hospitals, nursing home, home care and polyclinic/GPs and even caregivers at home). There is also potential for it to be deployed in settings where accessible and proper medical expertise are lacking (e.g. offshore island clinics and army camps etc.)

Ren Ci has implemented the latest version of the CARES4WOUNDS at all 4 care facilities (i.e. Community Hospital, Chronic Sick Unit, 2 Nursing Homes). Ren Ci hopes that by being one of the bigger providers in the sector, the adoption of CARES4WOUNDS would also encourage others in the community care sector to adopt it or other technology to enhance patient care and improve staff productivity.

As part of continual improvement, the team will continue to work in close partnership with Tetsuyu to ensure smooth integration with the hospital workflows as well as to enhance the solution further, with the hopes to continue to improve staff productivity and importantly, provide sustainable and quality wound care to patients.

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#### **NOMINEE CONTACT INFORMATION** (for award follow up and coordination)

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