

『淨零新創主題館』活動辦法

附件 4

參選說明表-大專院校

填表日期：113 年 11 月 11 日

(*為必填欄位)

產品或	*(中文) 重症病人存活率預測裝置
服務名稱	*(英文) Survival Probability Prediction Tool
產品或服務 創新介紹 (50%)	<p>*(中文)</p> <p>目前對加護病房重症患者的預後評估，常使用 APACHE 或 SOFA 評分系統來評估或預測加護病房死亡率及住院死亡率。然而，這些評分系統已發展多年，所依據的統計資料距今已超過 20 年。如今臨床可收集的數據項目不僅比以往豐富，且更加精細，加上機器分析能力的進步，傳統的評分系統已不足以滿足現代精準預測和個人化醫療的需求。因此，本團隊開發重症病人存活率預測裝置，透過 AI 演算法模型，利用加護病房病人的生理、檢驗、檢查等臨床數據，預測其未來 30、60、90 天的存活率，以提供預後評估及醫療資源分配的參考。</p> <p>*(英文)</p> <p>For assessing the prognosis of critically ill patients in intensive care units (ICUs), APACHE and SOFA scoring systems are commonly used to evaluate or predict ICU and hospital mortality rates. However, these scoring systems were developed decades ago, and the statistical data they are based on is now over 20 years old. With advances in clinical data collection, we now have access to a broader and more detailed range of data, alongside significantly improved machine analysis capabilities. As a result, traditional scoring systems are no longer sufficient to meet the demands of precise prediction and personalized healthcare. Therefore, our team has developed a survival probability prediction tool for critically ill patients, utilizing an AI algorithm model that leverages physiological, laboratory, and examination data from ICU patients to predict 30-day, 60-day, and 90-day survival rates. This device aims to provide valuable insights</p>



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	for prognosis assessment and healthcare resource allocation.
應用效益 (30%)	<p>*(中文)</p> <p>重症病人存活率預測裝置不僅幫助加護病房的醫護人員提供更精準、個人化的照護，還帶來多方面的好處：</p> <ol style="list-style-type: none"> 1. 減少醫療資源的浪費：AI 模型能協助醫護人員更早發現病情變化，從而及時調整治療方案，減少病情惡化的風險，縮短住院時間，並降低整體治療成本。不僅有助於節省健保資源，也能讓病人和家屬減少醫療支出，達到更高的成本效益。 2. 提升醫療效率與照護品質：透過每日病人的生理數據進行快速分析，AI 模型可以迅速預測病情發展，使醫護人員能夠更有效的掌握病情，專注於重症患者，並縮短傳統診斷和決策所需的時間，進而提升整體醫療效率，同時保證照護品質。 3. 增強醫病關係：家屬可以透過 AI 預測結果了解病人的健康狀況和預後情況，減少不確定感，讓他們在病患治療過程中感到更加放心，增強對醫療過程的信任，並幫助醫護人員與家屬建立更好的溝通與信任關係。 <p>The survival probability prediction tool not only helps ICU healthcare professionals provide more precise and personalized care but also brings multiple benefits:</p> <ol style="list-style-type: none"> 1. Reducing healthcare resource waste: The AI model helps healthcare providers detect changes in a patient's condition earlier, allowing for timely adjustments to treatment plans. This reduces the risk of deterioration, shortens hospital stays, and lowers overall treatment costs. This not only helps save healthcare resources but also reduces medical expenses for patients and their families, achieving greater cost efficiency. 2. Improving medical efficiency and care quality: By quickly analyzing daily

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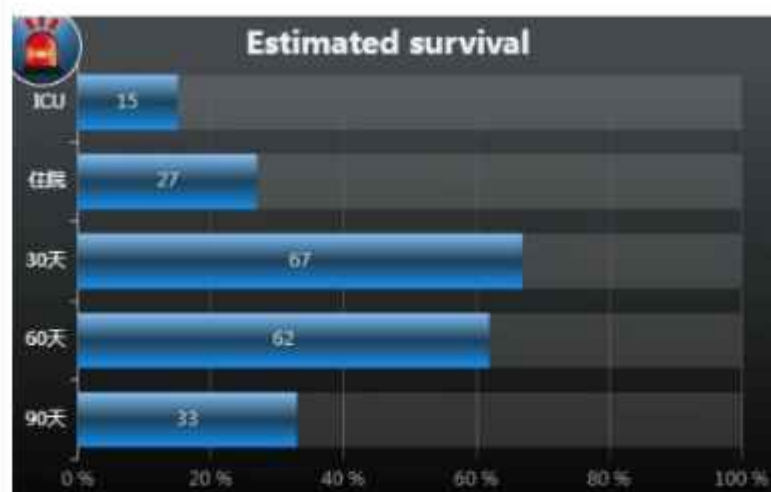
	<p>physiological data, the AI model can rapidly predict the progression of a patient's condition, allowing healthcare providers to more effectively manage the patient's care. It enables more focus on critically ill patients and reduces the time needed for traditional diagnosis and decision-making, thereby improving overall medical efficiency while ensuring high-quality care.</p> <p>3. Strengthening doctor-patient relationships: Families can use AI predictions to better understand the patient's health condition and prognosis, reducing uncertainty and making them feel more at ease during the treatment process. This strengthens trust in the medical process and helps healthcare professionals build better communication and trust with families.</p>		
研發績效及國內外發表成效 (20%)	<p>本團隊運用 BI 和 AI 技術提升重症照護品質，榮獲 2023 年國家醫療品質獎智慧醫療類銀獎，並已將此項技術申請中華民國及美國專利。</p>  <p>Our team utilizes BI and AI technologies to enhance the quality of critical care, winning the Silver Award in the Smart Healthcare category at the 2023 National Healthcare Quality Award. We have also submitted patent applications for this technology in both Taiwan and the United States.</p>		
*符合 SDGs 永續發展目標	1.消除貧窮	2.終止飢餓	v 3.建康與社福
	4.優質教育	5.性別平權	6.淨水與衛生

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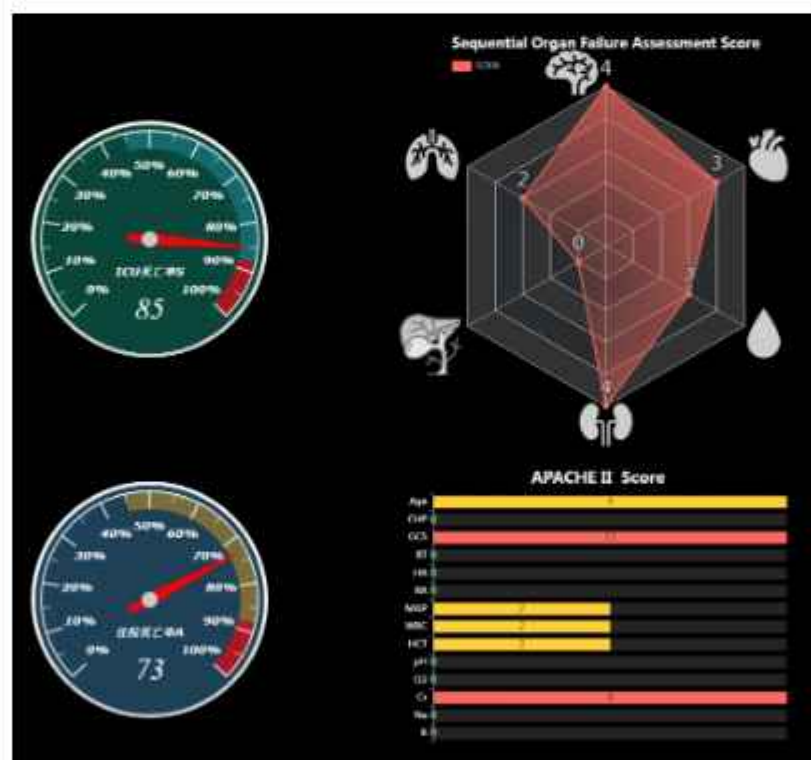
	7.可負擔的潔淨能源	8.適合的工作及經濟成長	9.工業化、創新與基礎建設
	10.減少不平等	11.永續城鄉	12.責任消費及生產
	13.氣候行動	14.保育海洋生態	15.保育陸域生態
	16.和平、正義及健全制度	17.多元夥伴關係	
淨零十二項關鍵戰略	1.風能/光能	2.氫能	3.前瞻能源
	4.電力系統與儲能	5.節能	6.碳捕捉利用及封存
	7.運具電動化及無碳化	8.資源循環零廢棄	9.自然碳匯
	10.淨零綠生活	11.綠色金融	12.公正轉型
研究團隊/ 單位	<p>本團隊由重症加護臨床團隊、資訊室及體系智能醫療推動辦公室組成，結合臨床專業知識與資訊技術，透過跨團隊協作，將數據分析與人工智慧融合，推動精準醫療和個人化照護，旨在醫療品質，團隊的技術創新也已獲得國家醫療品質獎的肯定。</p> <p>Our team is composed of the critical care clinical team, Department Of Medical Information, and the Project Management Office for Intelligence Healthcare. By combining clinical expertise with information technology, and through cross-team collaboration, we integrate data analysis and artificial intelligence to drive precision medicine and personalized care, with the goal of enhancing healthcare quality. Our technological innovations have also been recognized with the National Healthcare Quality Award.</p>		
*學校/研究單位 logo			
佐證圖片 或影片	<p>圖一：重症病人存活率預測裝置架構流程圖</p> 		

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圖二：AI 演算模型評估入住 30 天、60 天及 90 天的存活率示意圖



圖三：SOFA、APACHE 評分系統各項指標及其預測視覺化之示意圖。



附註：表格大小不足，請自動調整欄位大小，以便利於撰