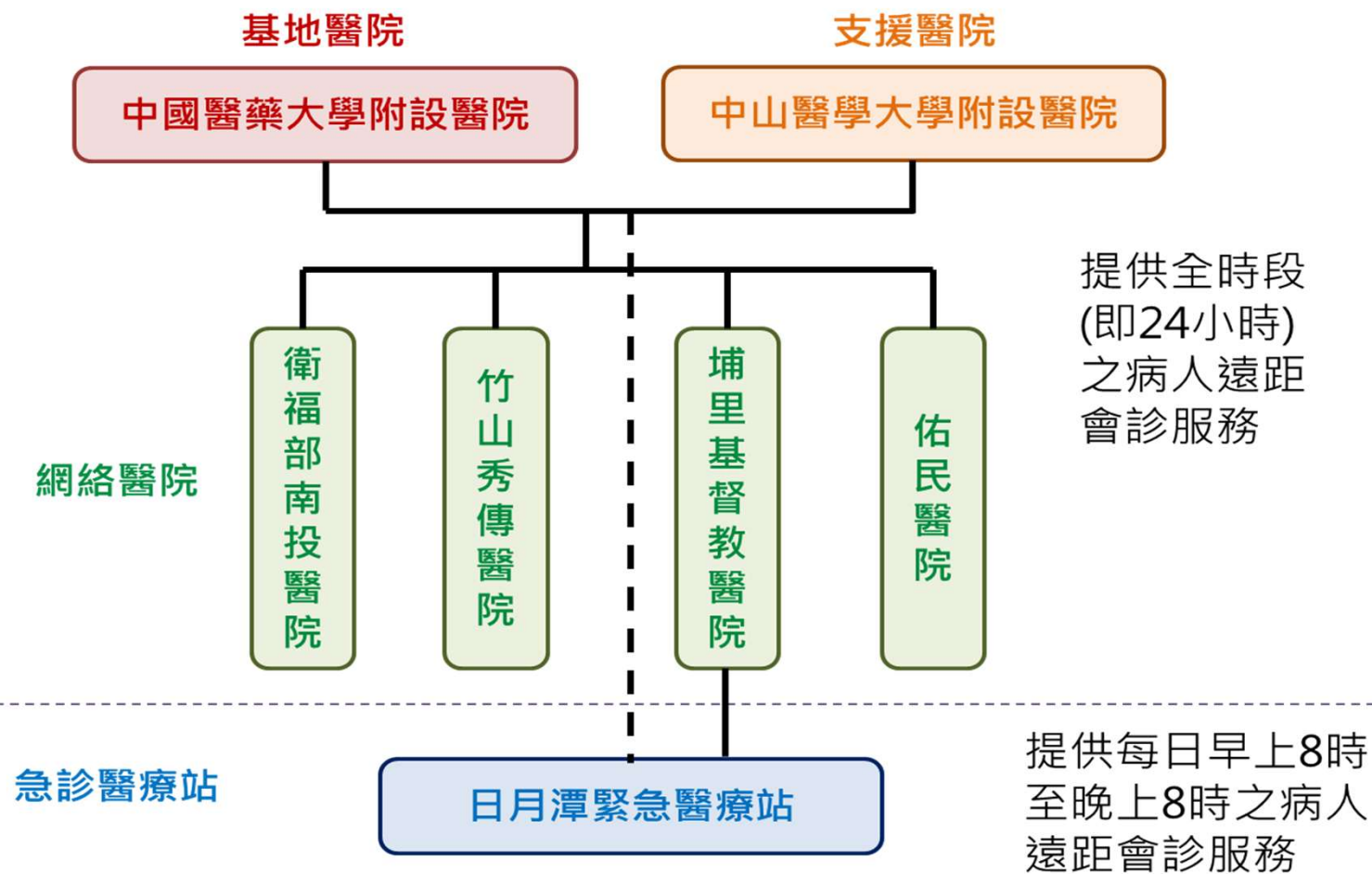


偏遠地區遠距醫療建置計畫

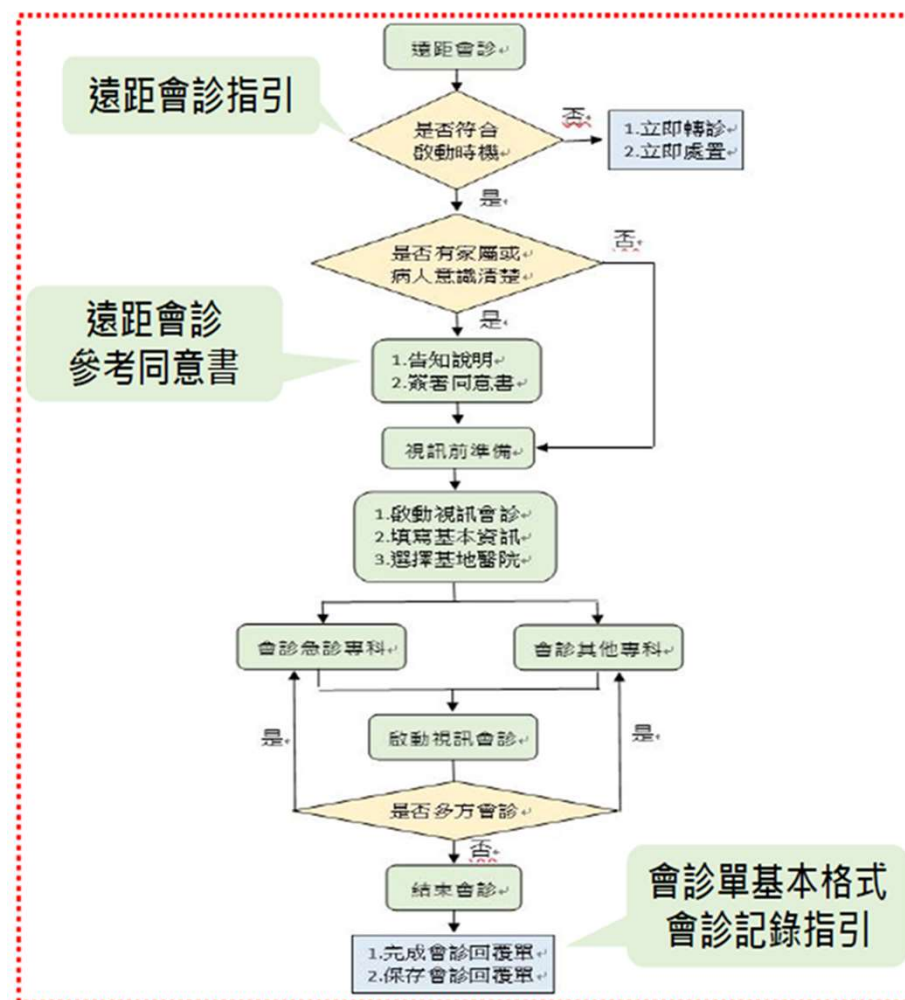
執行經驗分享 -中投網絡-

報告人: 陳維恭主任

執行架構



遠距會診執行概況



會診操作模式- 多元、可行

- ◆ 模式1 : 直接會診急診醫師

例如毒物科、兒童急診等

- ◆ 模式2 : 直接會診其他後線專科

例如眼科、ENT等

- ◆ 模式3 : 先會診急診再會診其他專科

例如放射科、神經內科、心臟內科、外傷科等

會診操作模式- 多元、可行

遠距會診

綠色通道 安全轉診 在地醫療 區域整合

Tier 1

Tier 2



急診專科
(毒物科)
兒童專科
眼科
耳鼻喉科



放射專科
心臟專科
外傷科
神經內科



急診專科

會診操作模式- 多元、可行

1. 增設醫療站與醫療站計畫執行醫院之連結
2. 增加專師轉診電話提示功能
3. 增加電腦遠距會診閃燈提示
4. 建置各基地後台管理系統，方便醫院自行管理醫師值班

執行上遭遇之困難

1. 網絡醫院

- 1) 醫師啟動意願低
 - 有責無益耗時間、一通電話最方便
- 2) 急診專科會診急診專科的矛盾
 - 除非有特殊需求，否則相同專科間之會診意義不大
- 3) 實質效益仍不明確
 - 因案件較少，效益較難呈現

2. 基地醫院

- 1) 忙碌下配合意願低
- 2) 吵雜下容易遺漏
- 3) 請求後線專科協助不易

Original Investigation | Pediatrics

Impact of Tele-Emergency Consultations on Pediatric Interfacility Transfers A Cluster-Randomized Crossover Trial

James P. Marcin, MD, MPH; Hadley S. Sauers-Ford, MPH; Jamie L. Mouzoon, MA, MS, AMFT; Sarah C. Haynes, PhD, MPH; Parul Dayal, PhD; Ilana Sigal, MPH; Daniel Tancredi, PhD; Monica K. Lieng, MD, PhD; Nathan Kuppermann, MD, MPH

CONCLUSIONS AND RELEVANCE In this randomized trial, the use of telemedicine to conduct consultations for acutely ill children in rural and community EDs resulted in less frequent overall interfacility transfers than consultations done by telephone.

JAMA Netw Open. 2023;6(2):e2255770.
doi:10.1001/jamanetworkopen.2022.55770

Telemedicine in the emergency department: an overview of systematic reviews

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Journal of Public Health

From Theory to Practice

2022;27 : 1–15. <https://doi.org/10.1007/s10389-021-01684-x>

Table 2 Benefits of emergency department telemedicine

Benefit	Source	Ratio
Cost reduction	(Brainard et al. 2016; Gattu et al. 2016; Kelton et al. 2018; Kimmel et al. 2019; Pak and Pak 2015; Rogers et al. 2017; Salmoiraghi and Hussain 2015; Culmer et al. 2019)	8/18
Improved quality of care	(Bashshur et al. 2016; Eder et al. 2018; Gattu et al. 2016; Kelton et al. 2018; Nadar et al. 2018; Culmer et al. 2019; Guevorkian 2017)	7/18
Decreased patient transfer rate from rural centers to major centers	(Brainard et al. 2016; du Toit et al. 2019; Kelton et al. 2018; Winburn et al. 2018; Nadar et al. 2018; Culmer et al. 2019)	6/18
Reduced mortality rate	(Eder et al. 2018; Kimmel et al. 2019; Guevorkian 2017; Nadar et al. 2018; Lazarus et al. 2020)	5/18
Reduced patient treatment time	(Kimmel et al. 2019; Rogers et al. 2017; Nadar et al. 2018; Lazarus et al. 2020; Culmer et al. 2019)	5/18
Reduced time between first contact and treatment	(Pak and Pak 2015; Rogers et al. 2017; Guevorkian 2017; Lazarus et al. 2020; Culmer et al. 2019)	5/18
Cost effectiveness	(Brainard et al. 2016; Kelton et al. 2018; Ward et al. 2015; Guevorkian 2017; Lazarus et al. 2020)	5/18
Medical staff practice and training	(Gattu et al. 2016; Kimmel et al. 2019; Marsh-Feiley et al. 2018; Lazarus et al. 2020)	4/18
Quick access to specialist	(Gattu et al. 2016; Marsh-Feiley et al. 2018; Salmoiraghi and Hussain 2015; Ward et al. 2015)	4/18
Reduced ED overcrowding	(Gattu et al. 2016; Kelton et al. 2018; Winburn et al. 2018)	3/18
improved capability of rural centers	(du Toit et al. 2019; Ward et al. 2015; Lazarus et al. 2020)	3/18
On-site diagnosis and prescription	(Eder et al. 2018; Rogers et al. 2017)	2/18
Reduced return visits for unnecessary cases	(Bashshur et al. 2016; Winburn et al. 2018)	2/18
Providing remote specialist care	(Salmoiraghi and Hussain 2015; Ward et al. 2015)	2/18
Preventing medication side effects and medical error	(Bashshur et al. 2016; Nadar et al. 2018)	2/18
Better management of emergency conditions	(Eder et al. 2018)	1/18

Table 3 Challenges of emergency department telemedicine

Challenge	Source	Ratio
Technical issues and difficulties	(Brainard et al. 2016; Gattu et al. 2016; Pak and Pak 2015; Rogers et al. 2017; Guevorkian 2017; Culmer et al. 2019)	6/18
Legislative, ethical and policy issues	(Eder et al. 2018; Gattu et al. 2016; Marsh-Feiley et al. 2018; Salmoiraghi and Hussain 2015; Culmer et al. 2019)	5/18
Protecting patient privacy, confidentiality and security	(Gattu et al. 2016; Marsh-Feiley et al. 2018; Pak and Pak 2015)	3/18
Prolonged consultation time with telemedicine	(Gattu et al. 2016; Marsh-Feiley et al. 2018; Pak and Pak 2015)	3/18
Scarce and limited literature on technology implementation	(Kelton et al. 2018; Kimmel et al. 2019; Salmoiraghi and Hussain 2015)	3/18
Lack of cooperation from other departments	(Eder et al. 2018; Winburn et al. 2018)	2/18
Loss of skill in rural physician	(Kelton et al. 2018; Pak and Pak 2015)	2/18
Incompatible pre-existing health systems	(Kelton et al. 2018; Pak and Pak 2015)	2/18
Increased anxiety in hub physician	(Kelton et al. 2018; Pak and Pak 2015)	2/18
Possible loss of critical data	(Marsh-Feiley et al. 2018; Pak and Pak 2015)	2/18
Synchronizing the field of telemedicine and emergency care	(Bashshur et al. 2016; Pak and Pak 2015)	2/18
Increased workload in low staff areas	(du Toit et al. 2019; Boggan et al. 2020)	2/18
Lower inclination of rural residents for participation	(Brainard et al. 2016; Culmer et al. 2019)	2/18
Financial support	(Ward et al. 2015; Culmer et al. 2019)	2/18
Additional time needed for setting up equipment	(Pak and Pak 2015)	1/18
Disagreement between diagnosis and management between physician	(Pak and Pak 2015)	1/18
User support	(du Toit et al. 2019)	1/18
Difficulty of providing care in remote rural EDs	(du Toit et al. 2019)	1/18
Implementation costs	(Rogers et al. 2017)	1/18
Increased complexity of cases	(Ward et al. 2015)	1/18
Difficult system maintenance	(Kimmel et al. 2019)	1/18



Understanding Barriers to Telemedicine Implementation in Rural Emergency Departments

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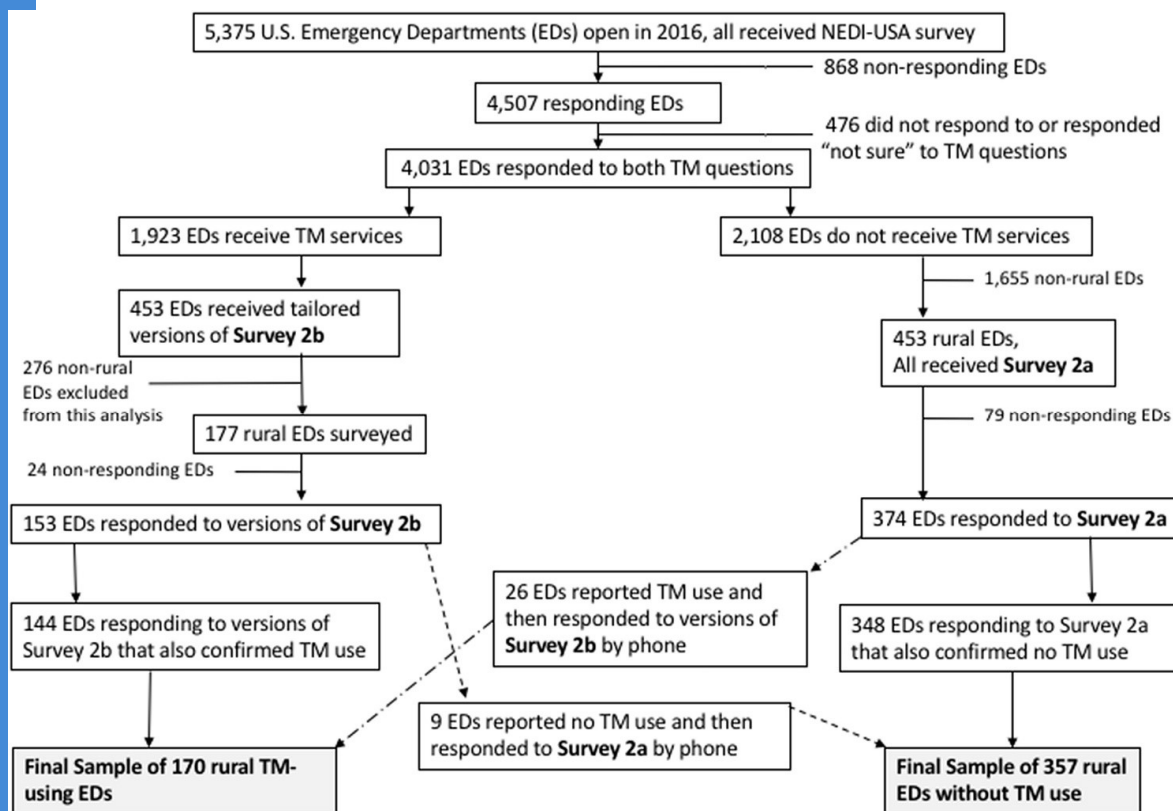
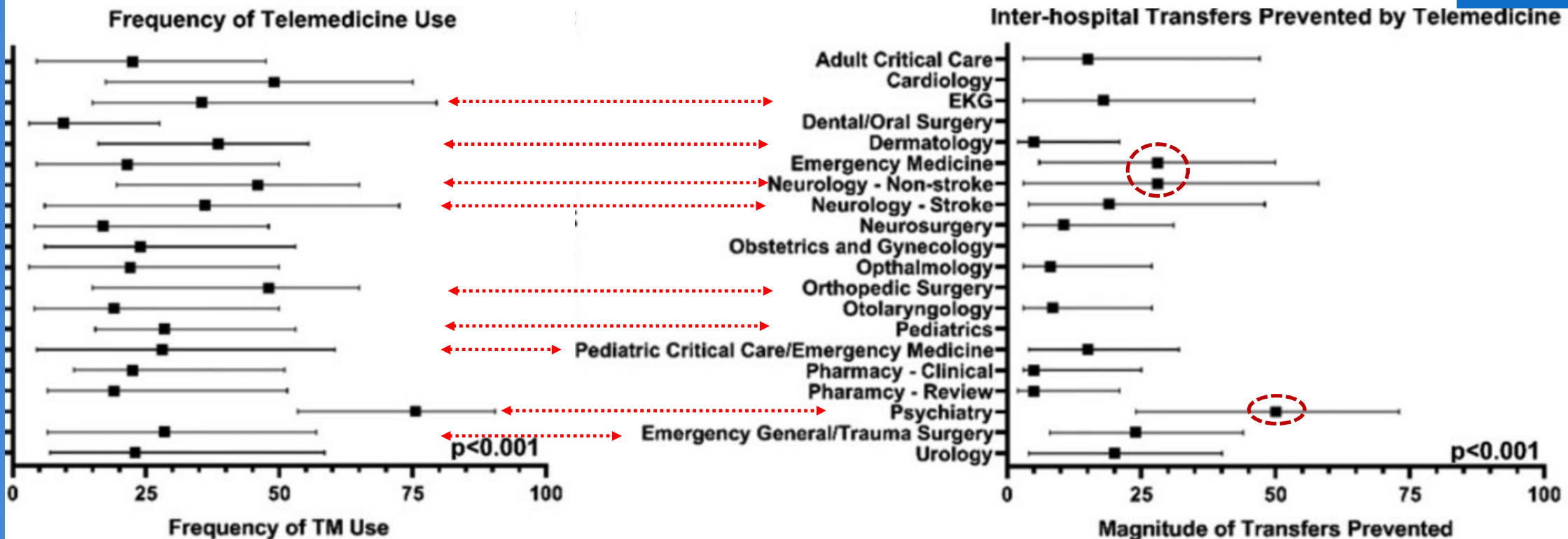


Table 1. Among rural EDs without telemedicine, most frequently cited reasons for nonuse (n=235).

Reason	EDs Citing Reason, No. (% , 95% CI)
Clinical concerns (eg, concern that telemedicine would interfere with patient-provider relationship)	12 (5, 3-9)
Legal concerns: patient health information, liability, or medicolegal issues	11 (5, 3-8)
<u>Cost concerns</u> (eg, costs related to the technology or of "subscription" to services)	86 (37, 31-43)
Administrative concerns (eg, credentialing outside telemedicine providers, billing laws)	17 (7, 5-11)
Fear of losing patients	2 (1, 0.2-3)
<u>Tried it but did not find it valuable for patient care</u>	13 (6, 3-9)
<u>Technologic concerns</u> (eg, discomfort with or difficulty incorporating a new technology into the department)	25 (11, 7-15)
<u>Process concerns</u> (eg, concerns about slowing or interrupting providers' work flow)	13 (6, 3-9)
<u>Telemedicine not necessary to meet patients' needs</u>	27 (11, 8-16)
Other (specify)	42 (19, 13-23)
Not sure	27 (11, 8-16)

Telemed J E Health. 2020; 26(7): 855–864.

Perceptions and Perceived Utility of Rural Emergency Department Telemedicine Services: A Needs Assessment



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