

“Does current evidence support use of Telehealth in Asian countries? Results from Systematic Review”

A PANACeA Thematic Activity



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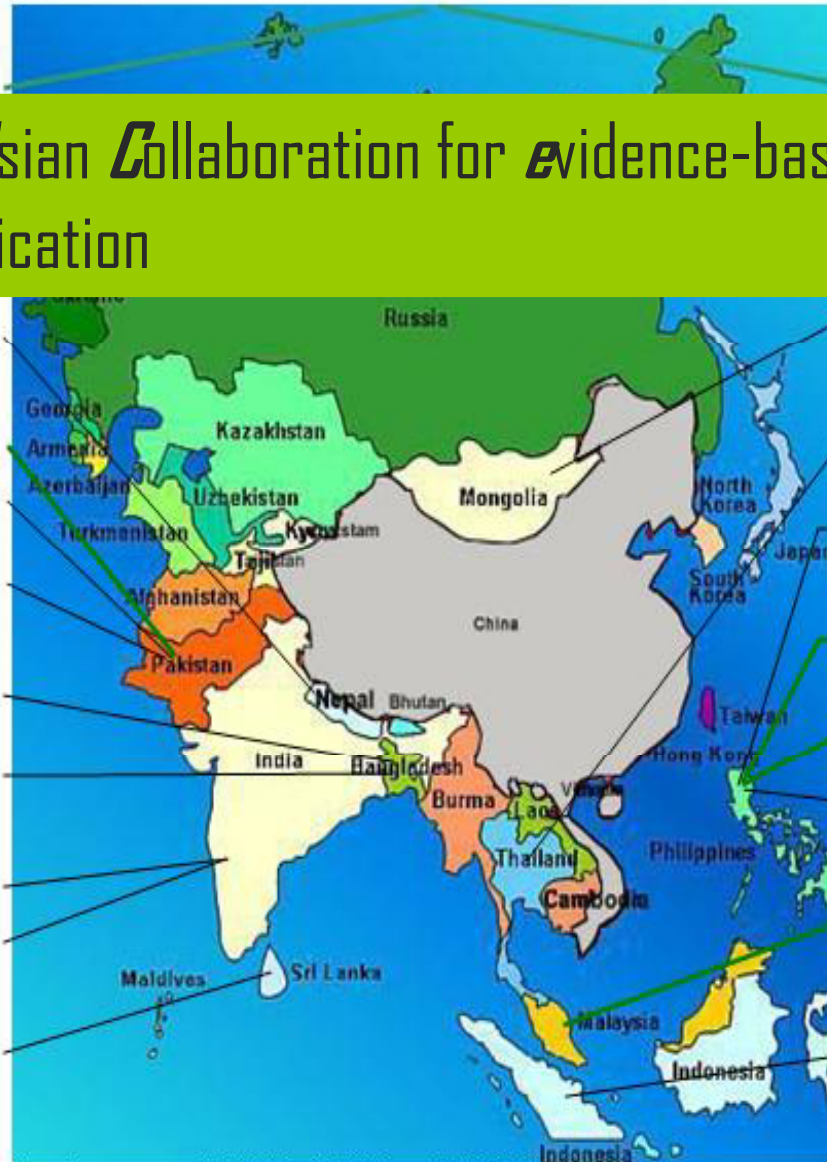
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Projects	Leading Country	Other partners
Cost Benefit Analysis of available Hospital Information management system data mining and data warehousing	Pakistan	Thailand Philippines India
Portable System for Telemedicine and Health Information in Rural and Remote Areas	Malaysia	Sri Lanka Philippines
Use of PDAs in Medicine in Nepal and Mongolia: a pilot project	Mongolia	Philippines
Role of eHealth at Primary Health Care: Development and Implementation of a Framework; piloting in four Asian settings	India	Pakistan Philippines Indonesia
Exploratory Intervention Research on e-Health for Persons with Visual Disabilities	Bangladesh	Philippines
Online TB Diagnostic Committees for Clinically Suspect Sputum Negative Patients in the TB-DOTS Program	Philippines	Pakistan India Thailand
Disaster / Emergency Telemedicine System	Indonesia	Philippines
Use of Mobile Phone in Bridging the Gap for Referral of Pregnant Women	Philippines	Pakistan Indonesia

PANACeA Thematic Activities



- Telehealth
- Health Informatics
- eHealth Policy
- eHealth Readiness
- eHealth Change management
- Open Source

Rationale



Why systematic review ?



Why a systematic review on telehealth in Asia?



Rationale

Why systematic review ?

Systematic reviews give best possible evidence

A "systematic review", aims

1. Systematic (e.g. in its identification of literature)
2. Explicit (e.g. in its statement of objectives, materials and methods)
2. Reproducible (e.g. in its methodology and conclusions)

Why a systematic review on telehealth in Asia?

- No systematic study in Asian context or even developing countries context
- Relevance to Asia and developing countries



Objectives

- **Main objective**

The main objective of this study is to conduct a thorough and current state of the science review of telehealth applications, with specific emphasis on telehealth in Asia

- **Specific Objectives**

Report the successes and failures of different telehealth initiatives in Asia and the determinants that may be responsible for these results,

Identifying existing evidence of new initiatives by identifying applications providing most beneficial outcomes on people's health and health system



Methodology

- Study Design
Cochrane style methodology
- Stage: 1: Setting selection criteria for studies and conducting Literature search
- Stage: 2: Review of the abstracts (Level 1 review)
- Stage: 3 :Review of the complete articles (Level 2 review)
- Stage: 4: Quality assessment of the selected studies
- Stage: 5: Synthesis of data and Analysis

Methodology



Search and Selection Process

Computerized and Manual Search = **1504**



Removal of Duplicates = **188**

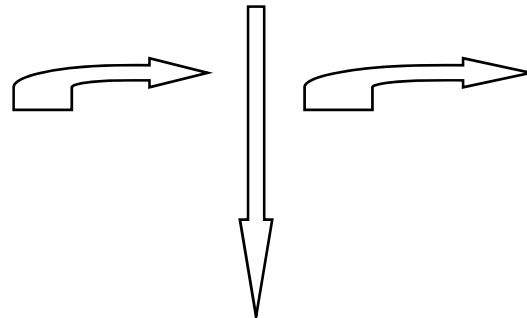


Level 1 Review: (Initial Eligibility based on selection criteria) = **1316**



Full articles Retrieved = 205

3 Articles added
from reference lists
review



65 Excluded due to Non Asian context
15 Excluded (technical papers)
19 Excluded (not original Research)

Level 2 Review: (Final Eligibility) =109 Articles

Results

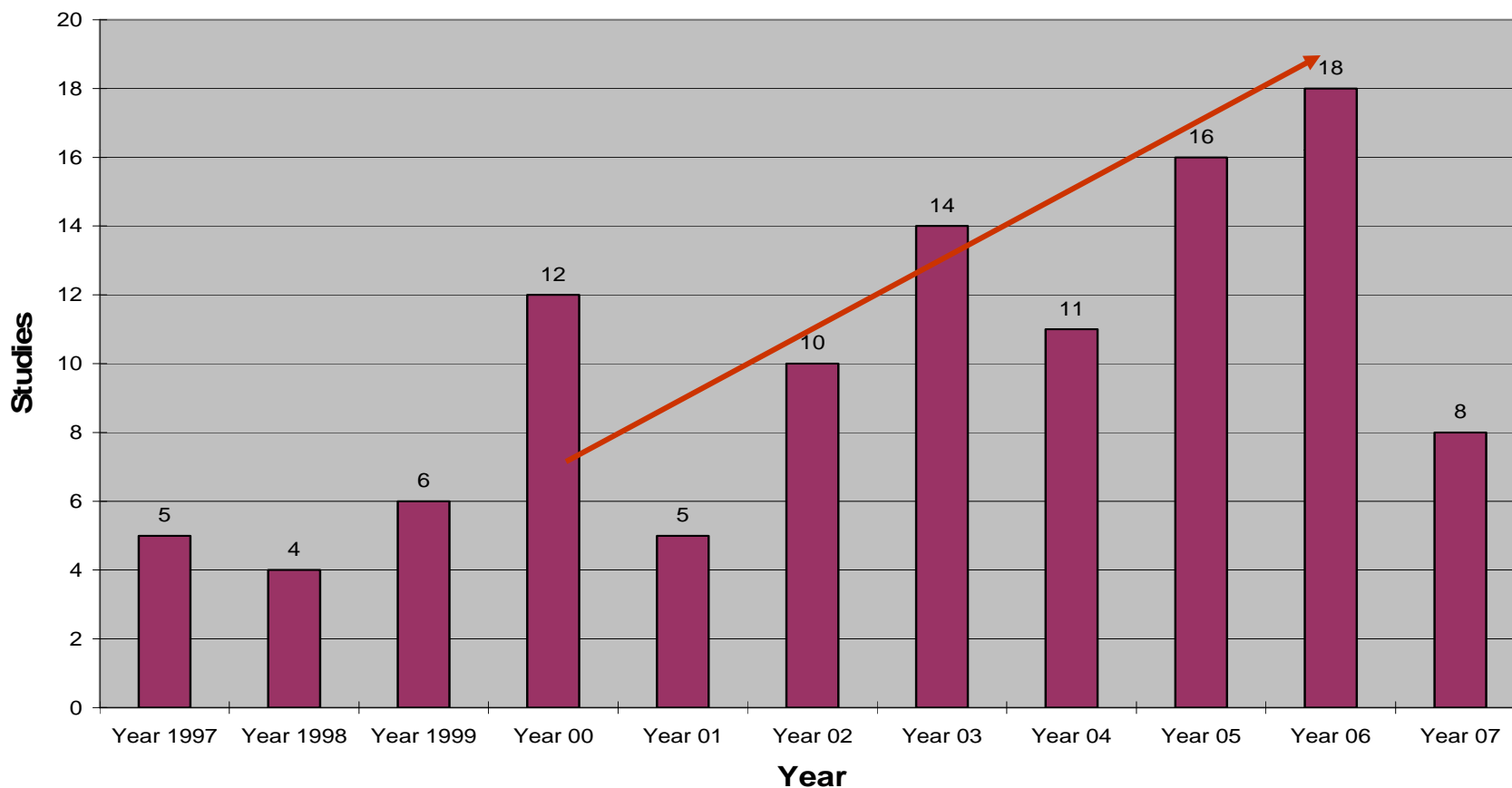


- Descriptive information
- Methodological characteristics of the literature, and
- Content/outcome analysis

Descriptive Information: number of studies



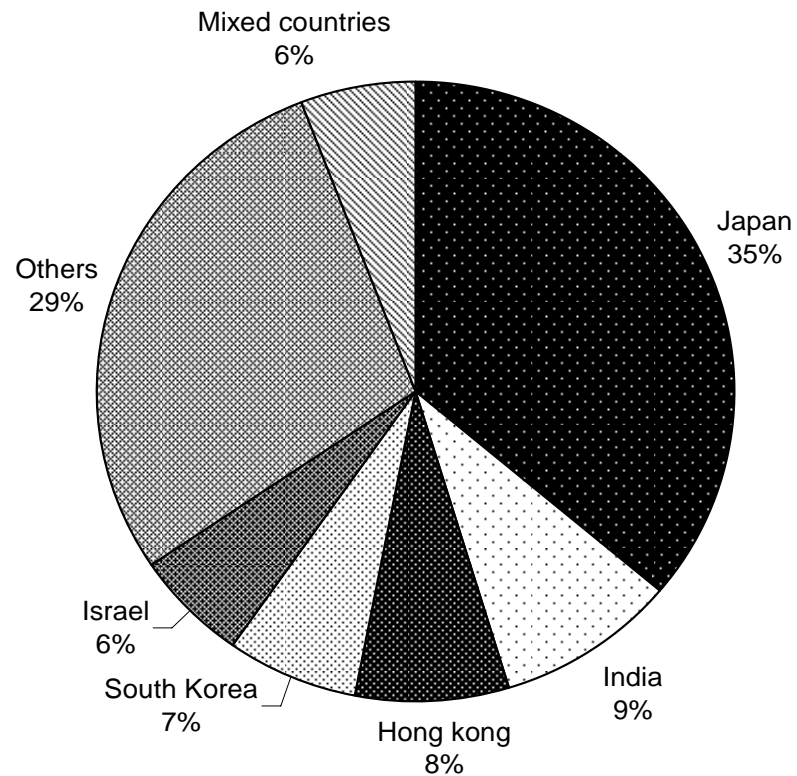
Number of Studies



Published telehealth articles on Asian context from year 1997-July-07

Descriptive Information:

Countries involved in telehealth studies

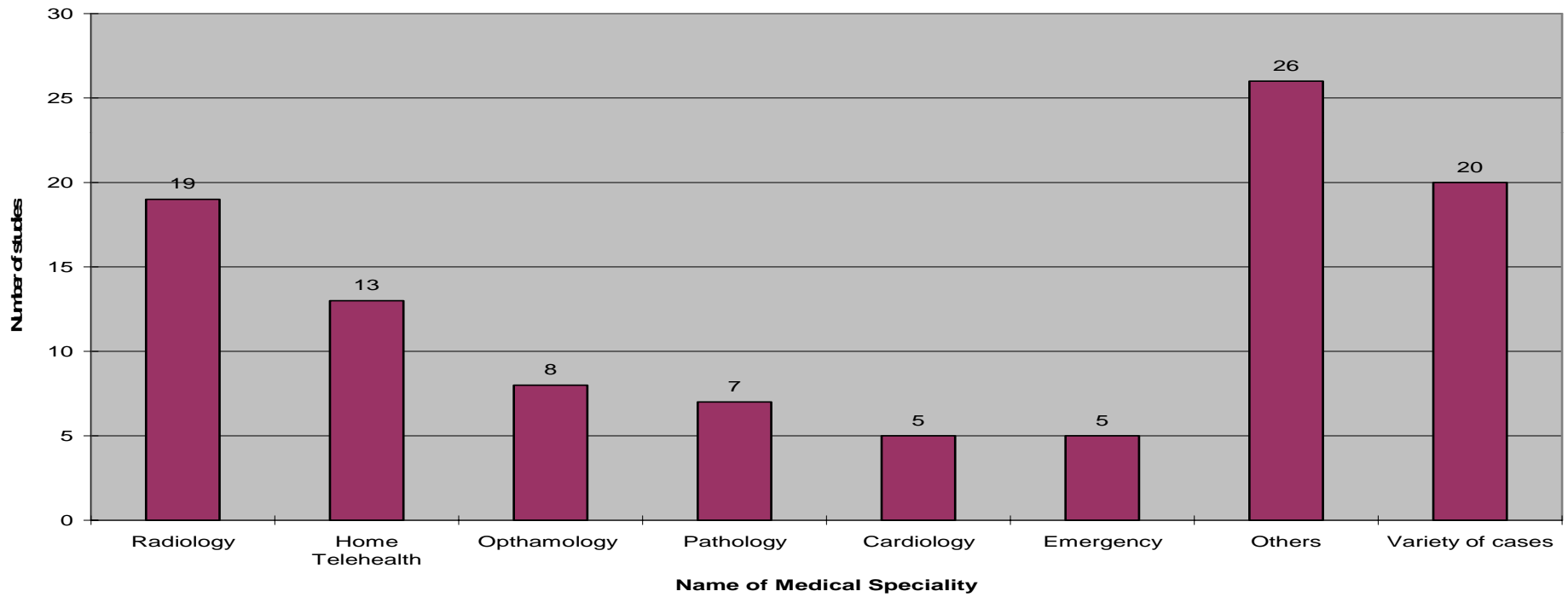


Figures shows different countries involved in telehealth studies (%)



Descriptive Information:

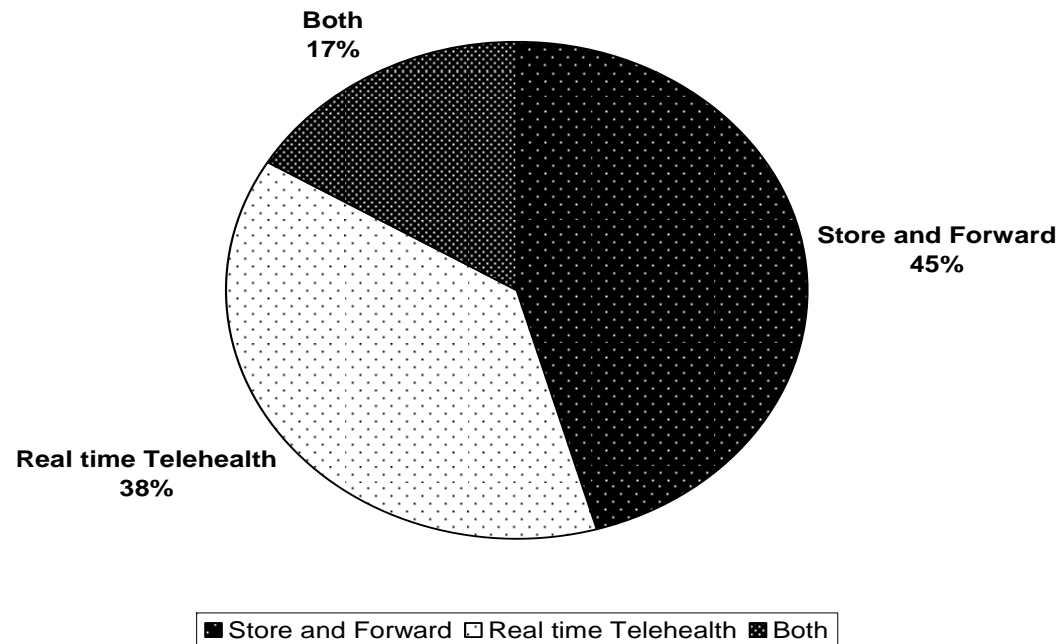
Medical speciality



Descriptive Information:



Tele Systems





Descriptive Information:

Study settings

Most of the projects/ studies were held in urban areas (63 %) vs rural areas 26%

Technology

Open source software (14%) followed by propriety software (11%) and in house built software (6%)

Connections

ISDN (32%), POTs (15%), Satellite connections (14%), Broad Band(14%), Wireless (6%)



Methodological Characteristics:

■ Study Design

- descriptive (75%, 82/109),
- studies(7%) in this review included an independent control group
- eleven studies (10%) with at least some economic/cost analysis
- seven studies (6%) with some qualitative component
- and three validation studies



Methodological Characteristics:

■ Sample size

Study Design	Subjects Range	Images/cases Range	Consultations Range	Institutions (public and private) Range
Cross Sectional Studies	1-511 subjects	20- 1708 images	12-1503 consultations	-
Qualitative studies	2 - 98 subjects	-	-	14- 622 institutions
Prospective/ Retrospective studies	14 - 244 subjects	30 – 46 cases	-	-
Case Controls	32 - 93 subjects			-
Randomized Control Trials	58- 164 subjects			



Methodological Characteristics: Quality

Level Of Evidence	Type of Study	Number of studies	Strength of Evidence
Level I	Meta Analyses OF RCTs	-	Good
Level II	Large Sample RCTs	4	
Level III	Small Sample RCTs	4	Good to Fair
Level IV	Prospective Studies	10	
Level V	Retrospective Studies	4	
Level VI	Cohort	-	
Level VII	Case Control	4	
Level VIII	Descriptive studies, NCCS	44	Poor
Level IX	Case reports or Anecdotes	39	

Table describing Strength and Level of evidence based on the criteria of Jovell and Navarro-Rubio



Content/Outcome Analyses

- Study Outcomes
 1. Improve Quality of care, 43%, (Patient/Provider Satisfaction, Improve diagnosis, swift diagnosis, 48/109)
 2. Increase Access to service 20%, (Decrease travel/ time saving/ access to specialist, , 22/109)
 3. Cost (economic analysis), 12%, 13/109)
 4. Management change (6%, 7/109)
 5. Policy Change (4%, 4/109)
- Mixed outcomes (15%, 16/109)

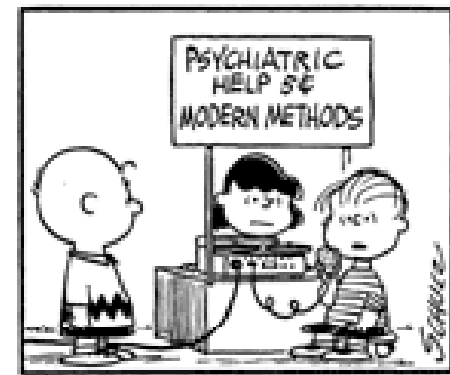
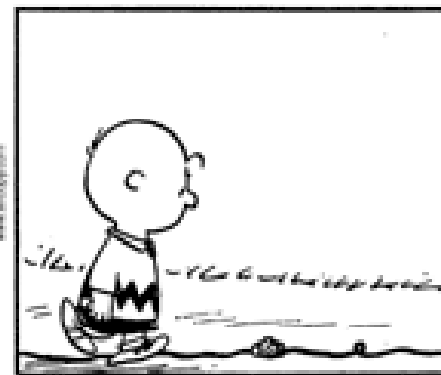
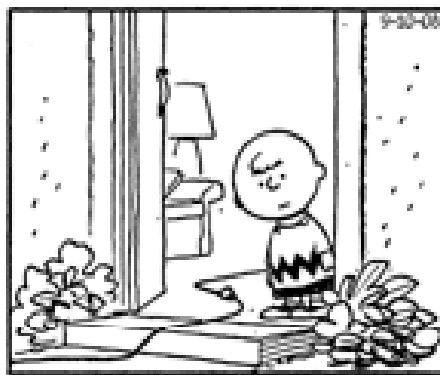
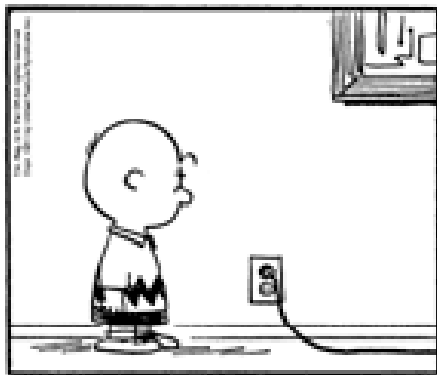


Conclusion

- **The overall findings** gives us an optimistic picture regarding telehealth initiatives in Asian health care settings
- **Studies** that have emerged on telehealth applications are useful but lack good quality studies and in some cases the **generalizability and scalability** is limited to specific settings
- **Gaps** are there in form of Lack of **Evidence, Readiness and Policies**

Next Steps

Modern Methods for Health Care



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Next Steps:

Build Readiness, Create Evidence, and advocate for Policy Changes

Do more focused country/region specific environmental scans/reviews

PANACeA/'s



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- PANACeA Partners

Thanks !!