Setting priorities for patient safety research

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For the WHO Patient Safety Alliance, Research Priority Setting Working Group

IEA Patient Safety Research MiniSymposium

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Agenda

- The importanca of Patient Safety Issues in Global health is unknown.
- The *Research Priority Setting Working Group, WHO Alliance for Patient Safety (2007),* developed:
  - Rationale for priority setting,
  - Priority-setting process,
  - Estimated PS Research Priorities according to country type:
    - Less developed countries (LDC)
    - Transitioning Countries (TC)
    - More developed Countries (MDC)
- The topics of a global research agenda for patient safety research (stratified by country settings) are presented.

Health Care and Development Data	Country Stage of Development Category		
Types of countries	**Less Developed Countries (LDC)**	**Transitioning Countries (TC)**	**More developed countries (MDC)**
Safety Transition Stage	most LRO, some HRO	most LRO, some HRO	most HRO,Some USO
Total population (millions)	2052	3123	957
% of total population	33.50%	50.90%	15.60%
Per capita GDP* (U$)	<875	876-10725	>10726
Health Expenditure per capita (U$)	23	118	2841
Health Expenditure (%GDP)	4.4	6	10.8
Public Sector Expenditures (%Total health care expend.)	26.3	51.1	62.1
LE (years)***	64	70	76
Under five Infant Mortality Rate (# /1000 live births)	120	35-40	6
Primary care share of expenditures(%)	??	???	11%
Hospital share of expenditures (%)	60-70%	NA	33%
#Hospital Beds /1000 (#Countries)**	1.45	4.12	8.6

Source: J.T. Insua, MD,MSc., 2007

Methods

- Modified Rand Delphi method (RD), with 21 experts from the world, with expertise in patient safety , epidemiology, health services, health policy, etc.
- RD is a method for eliciting and refining group judgments.
- Principle of RD for group opinion, is that “two heads are better than one”, when expert judgement is to be solicited, in areas of uncertainty, variability of responses and unclear outcomes.
- The RD was applied in four stages over 7 months.
- Questions concerned 50 Pt Safety topics for ranking, 20 highest ranked ones are here depicted.

Methods

- Principles of the Delphi Method are 1) anonimous response and iteration and 2) controlled feedback, and 3) statistical group response.
- Previously selected patient safety issues where ranked into a 1-9 scale, 9 being “most important” and 1 “least important”, and the mean score for the group and SD was obtained.
- Departures > 2 SD from the mean, require clarification and discussion.

Proposed Principles to facilitate priority setting for patient safety research at the local level

Scope	All areas related to patient safety, both outside and inside hospitals Use global priorities as indicative
Type of research	Epidemiology, methods, evaluation of interventions, economic, implementation, dissemination
Duration	To be reviewed and updated preferably every 4 years
Audience	Funders of research, health ministers, commissioners and other policy-makers, policy advisory institutions, research institutions, researchers, providers, general public
Constituencies involved	Researchers, safety leaders, providers and patients to propose an agenda. Funders of research, policy-makers, researchers, providers, patients to review and comment on the proposal and its outcome
Criteria for ranking	• frequency of safety issue; • severity of issue (extent of harm); • distribution of harm (children, mothers, the elderly, people with low socio-economic status, patients, geographical location such as developing or developed countries); • effect on efficiency of the system and associated costs; • existing solutions, feasibility of designing or adapting solutions and sustainability of solutions; • urgency or political support to address the problem.
Ranking method	• modified Rand Delphi approach; • identification of areas of agreement and disagreement; • discussion of discrepancies; • re-ranking until consensus is reached.
Process	• problem definition; • building constituencies; • agreement on method, timetable, tasks and output; • implementation: (i) goal description, (ii) situation analysis: burden of the problem, analysis of solutions and resources, (iii) comparative advantages of methods of priority setting, (iv) application of priority setting criteria and ranking, (v) validity checks: external reviews • communications; • impact evaluation and review (medium term).

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Top 20 Research priorities for developed countries

Rank	Research priority	Average score	Standard deviation
1	Lack of communication and coordination	8.22	0.88
2	Latent organizational failures	7.78	1.17
3	Poor safety culture and blame-oriented processes	7.75	1.73
4	Cost-effectiveness of risk-reducing strategies	7.42	1.24
5	Inadequate safety indicators	7.03	1.58
6	Lack of consideration of human factors in design and operation of procedures	6.97	1.46
7	Health information technology and information systems	6.89	1.78
8	Involvement of patients in setting the research agenda	6.57	1.09
9	Lack of consideration of human factors in design and operation of devices	6.28	1.78
10	Adverse events due to drugs and medication errors	6.25	2.13
11	Care of the frail and elderly	6.06	1.89
12	Patient adherence	5.94	1.51
13	Misdiagnosis	5.82	1.81
14	Identification, design and testing of locally effective and affordable solutions	5.81	1.79
15	Health care-associated infections	5.72	2.08
16	Lack of adequate test follow-up	5.44	1.54
17	Inadequate competence, training and skills	5.42	1.72
18	Lack of appropriate knowledge and its transfer	5.39	1.50
19	Lack of recognition of adverse events	5.39	1.65
20	Adverse events associated with medical devices	5.36	1.53

Common priorities and ranking by level of development

Priority	Rank		
	Developing countries	Countries with economies in transition	Developed countries
High priority for all countries			
Cost-effective risk-reducing strategies	2	2	4
Common to developing and countries with economies in transition			
Identification, design and testing of locally effective and affordable solutions	1	1	
Inadequate competence, training and skills	4	4	
Health care-associated infections	6	7	
Extent and nature of the problem of patient safety	7	8	
Lack of appropriate knowledge and its transfer	8	3	
Common to countries with economies in transition and developed countries			
Lack of communication and coordination		5	1
Poor safety culture and blame-oriented processes		6	3
Latent organizational failures		9	2
Inadequate safety indicators		10	5
Priorities specific to developing countries			
Counterfeit and substandard drugs	3		
Maternal and newborn care	5		
Unsafe injection practices	9		
Unsafe blood practices	10		
Priorities specific to developed countries			
Lack of consideration of human factors in design and operation of procedures			6
Health information technology and information systems			7
Involvement of patients in setting the research agenda			8
Lack of consideration of human factors in design and operation of devices			9
Adverse events due to drugs and medication errors			10

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Top 20 Research priorities for economies in transition

Rank	Research priority	Average score	Standard deviation
1	Identification, design and testing of locally effective and affordable solutions	8.39	0.78
2	Cost-effectiveness of risk-reducing strategies	8.21	0.74
3	Lack of appropriate knowledge and its transfer	7.42	0.97
4	Inadequate competence, training and skills	7.08	0.88
5	Lack of communication and coordination	7.00	1.19
6	Poor safety culture and blame-oriented processes	6.86	1.71
7	Health care-associated infections	6.78	1.52
8	Extent and nature of the problem of patient safety	6.75	1.50
9	Latent organizational failures	6.67	1.33
10	Inadequate safety indicators	6.58	1.82
11	Misdiagnosis	6.19	1.60
12	Adverse events due to drugs and medication errors	6.17	1.42
13	Inadequate regulations	5.97	1.70
14	Involvement of patients in determining research priorities	5.94	1.35
15	Maternal and newborn care	5.92	1.75
16	Counterfeit and substandard drugs	5.83	1.65
17	Adverse events associated with medical devices	5.81	1.25
18	Unsafe blood practices	5.78	1.48
19	Health information technology and information systems	5.78	1.77
20	Surgical errors	5.75	1.72

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Health Care and Development Data	Country Stage of Development Category		
Types of countries	**Less Developed Countries (LDC)**	**Transitioning Countries (TC)**	**More developed countries (MDC)**
Physician/Nurse Ratio *****	0.6	0.5	0.4
Nurse availability (#/100.000)*****	132	278	750
Physician availability (#/100.000)*****	73	142	286
Drug availability /Essential Health Technologies (EHT)+*	7.80%	9.20%	83%
Ranking of ICT Score (range rank) (UNCTAD)	131 (78-165)	80 (29-162)	18 (1-42)
Computers (#/million)	4 ??	60.69 ****	281.30
Internet use (% population)	2 ??	5.3% ****	23.54
Telephones (incl.cel.Ph.) (#/million)	??	353.12 ****	891.16
Gross tertiary enrolment rate (%)	<20	47.3	67

Top 20 Research priorities for developing countries

Rank	Research priority	Average score	Standard deviation
1	Identification, design and testing of locally effective and affordable solutions	8.56	0.51
2	Cost-effectiveness of risk-reducing strategies	7.89	1.13
3	Counterfeit and substandard drugs	7.72	1.23
4	Inadequate competence, training and skills	7.69	1.34
5	Maternal and newborn care	7.39	1.38
6	Health care-associated infections	7.20	1.54
7	Extent and nature of the problem of patient safety	7.19	1.30
8	Lack of appropriate knowledge and its transfer	7.08	1.29
9	Unsafe injection practices	7.06	1.47
10	Unsafe blood practices	6.81	1.18
11	Misdiagnosis	6.78	1.44
12	Unsafe blood products	6.64	1.35
13	Poor safety culture and blame-oriented processes	6.56	1.95
14	Shaping the agenda by burden of disease	6.50	1.29
15	Lack of communication and coordination	6.47	1.38
16	Inadequate regulations	6.42	1.59
17	Latent organizational failures	6.11	2.05
18	Adverse events due to drugs and medication errors	5.97	1.14
19	Lack of adequate reporting on patient safety	5.89	2.27
20	Inadequate safety indicators	5.86	1.75

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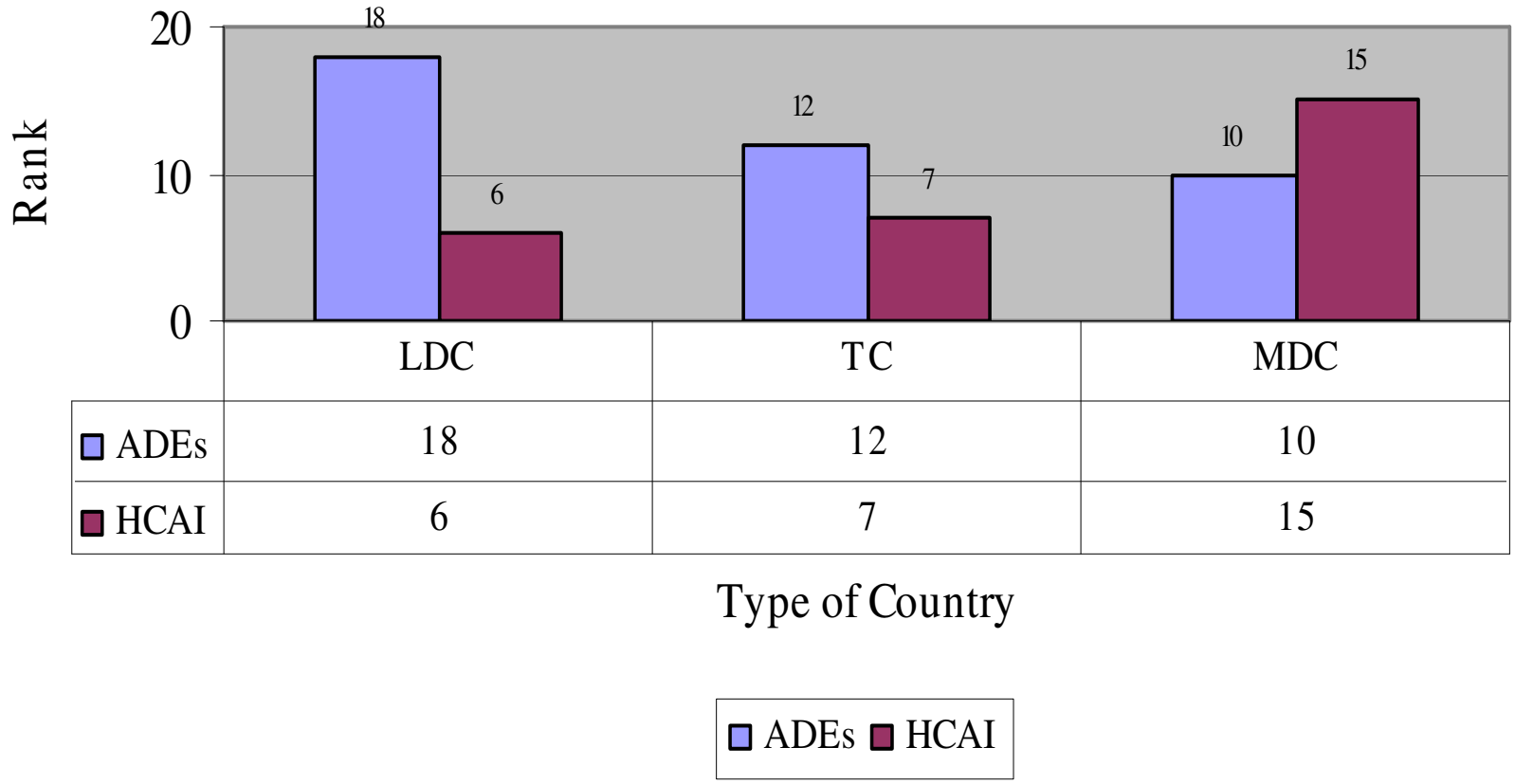
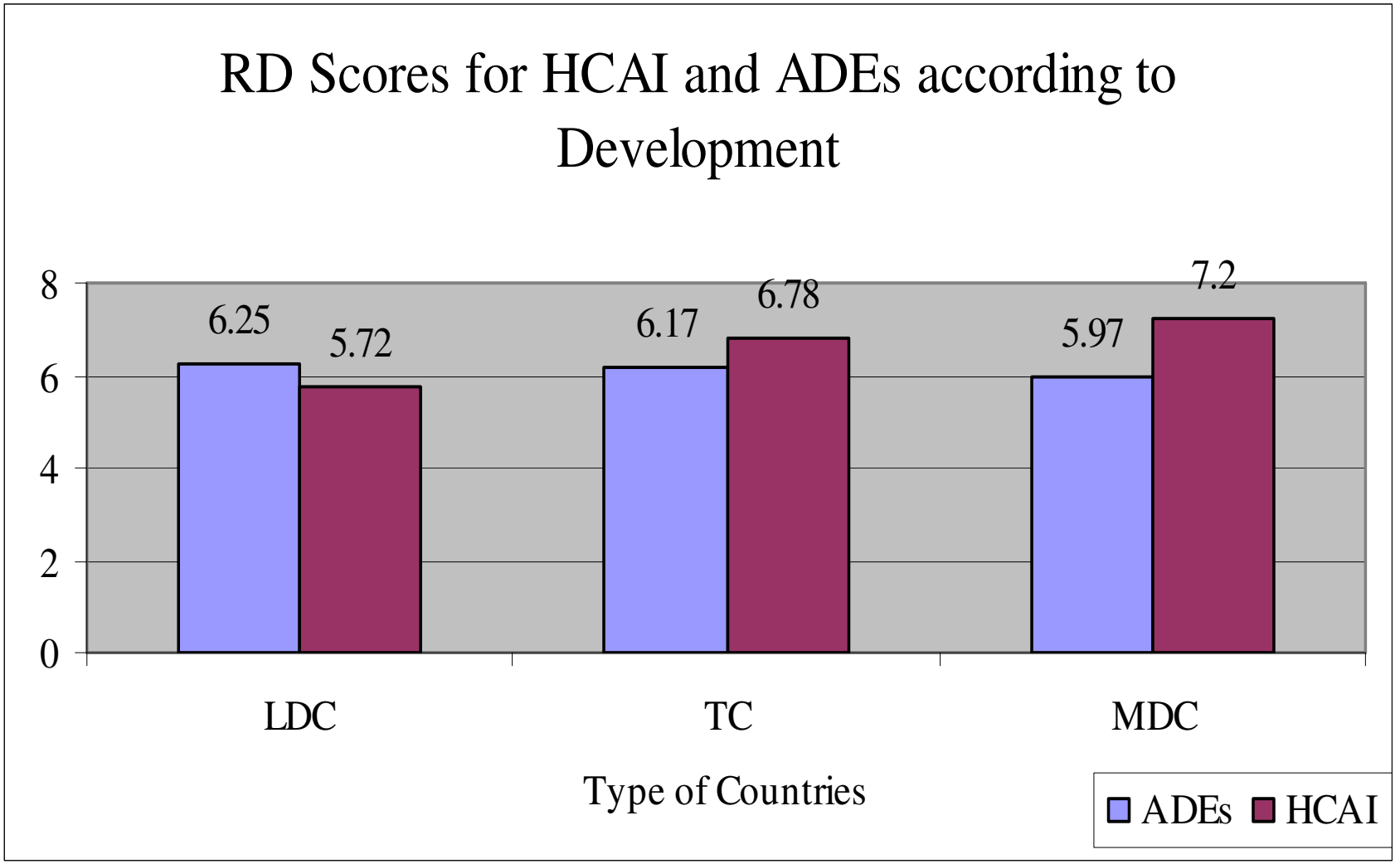
RD rank according to type of Country



	LDC	TC	MDC
ADEs	18	12	10
HCAI	6	7	15

Conclusions

- The Working Group results suggest that:
  - Research priorities have different perspectives
  - Groupings can be attempted according type of countries
  - Results are consistent with other contextual differences among countries:
    - Health Care Organization Transition
    - Technology Transition
    - Knowledge Transition
  - Translational, applied research for local solutions is required for local priority setting.
- A series of specific research questions was also developed by the group and external consultants.

WORLD ALLIANCE for PATIENT SAFETY

Research to improve patient safety