Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 2016
Study Record #: 1592	First Author (Last name, first intial): Jiang X-x
Study date (time period covered): 9/12 - 1/2015	Study duration: 3.25 yrs

Study type

Prospective:
- (Randomized)
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: China

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- (Ped patients in a mixed unit)
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- (Adults and children)

Type:
- General ICU
- Surgical ICU
- Anesthesia

(ER)

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Questionnaire

Number of pediatric subjects included:
- (Unable to determine)
- ~~Number:~~

Disease subtype (ie, trauma, postop): Multiple.

Adverse event rate: 15.2%.	Death rate
Total Number of pediatric events: unkn.	Total Number of pediatric events: 0
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes	Comments / notes
Severe Permanent Harm rate (see below)	Temporary Harm rate (see below)
Total Number of pediatric events:	Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes: NR	Comments / notes: NR
Additional Treatment rate (see below)	
Total Number of pediatric events:	
Percentage of pediatric events (blank if unsure):	
Comments / notes: NR	

Cardiovascular events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ↓BP 20/574	Airway/Respiratory events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ↓ SpO_2 15/574 Sputum blockage 13/574
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: infusion leakage/blockage 13/574 O_2 interruption 15/574	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Sent to wrong department 6/574 received & notice of retry 13/574 "Knowing nothing about diseases" 23/574	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Fall out of bed 7/574
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention Development + Research of patient transport systems	
Existing guidelines for intra-hospital transport mentioned or included? Ref #9, 12	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided #4 Gmail #11 pulled #8 #16	

Your comments / notes:

Bundle reduced waiting time, Transport time, Improved satisfaction improved "nursing score" (not defined) and reduced adverse event rate from 19% to 11%. "Successful rescue" (? mortality? Not defined) improved c bundle from 89.7% to 95.6%. P=0.009

No mention of time spent performing bundle tasks.

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population critically ill patients in ER needing inter-hospital transport, age 15yr+

Intervention Bundle of measures: pre transport assessment, education + Plan; dedicated monitoring; person doing transport; pat-transport consent

Comparator waiting, previous routine care

Outcome waiting time, transport time, "nursing score", Patient satisfaction, accident rate

Transport Complications Study BH 5/2018

Systematic Review

Your initials	BH	Year of publication	2012
Study Record #	A	First Author (Last name, first intial)	Choi HK
Study date (time period covered)	2010	Study duration	5.5 Months
Study type Prospective:	Randomized Interventional (eg, handover tool) Observational Checklist	Location of study Setting:	Tertiary /Academic Center Community Center
		Country/Countries:	Korea
Retrospective:	Cross Sectional (all patients) Cohort Case series Single case report	Setting:	Pediatric Hospital Pediatric unit in a hospital Ped patients in a mixed unit Unclear/Unknown
Population: Age:	Neonates alone Children (all under 18y) Adults and children	How data were obtained	Trained Observers Audit of electronic data Review of reported events
		Number of pediatric subjects included	~~Unable to determine~~ Number:
Type:	General ICU Surgical ICU Anesthesia ER	Disease subtype (ie, trauma, postop):	ER
Adverse event rate 4/0-6 f Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes		Death rate Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes	
Severe Permanent Harm rate (see below) Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes		Temporary Harm rate (see below) Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes	
Additional Treatment rate (see below) Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes			

"Critical medicals 4.2%"
"Physiologic deterioration" 40.6%

Cardiovascular events Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension (<90) 13/772 Hypertension (>200) 5/771 ~~Brady~~	Airway/Respiratory events Total Number of pediatric events: Unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ~~O2 disconnected 16/245~~ Desaturation <90% 20/750 ↑ Dyspnea 18/755
Incidence of equipment-related events 10.4% (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Equip issues (O2, monitor) 155 events in 245 pts (adult events per pt) range from 2.5-37.8% IV issues 231 events in 1249 pts (0-15%)	Medication Events Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Insufficient sedation 1/62 Vasoactive drug disconnection 5%
Handoff / Communication event Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ID band missing 28/1285 Consent missing 57/1041 Mental status change 7/680
Patient factors associated with events NR	Provider factors associated with events Checklist improved compliance.

Author recommendations for harm prevention

Min 2 people for transport - at least nurse. Physician with any patient with "unstable physiology who might require acute interventions". Specific training. Specific protocols, on when physicians should accompany. Checklists

Existing guidelines for intra-hospital transport mentioned or included?

Yes - ref #3 19

References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided

#17

More physicians on transport for sicker patients after dewit P=0.019

Your comments / notes:

Study of adverse transport events ^ pre- and post- checklist implementation. Includes adult ER patients taken to another part of hospital (including floor, ICU, Cath lab, Surgery, endoscopy or Radiology.

Day time 9a-6pm

Events collected were ID/consent issues; O2 supply; Monitor issue; SBP < 90; SpO2 < 90; P=0.001

Unexpected events ↓ 36.5% to 22.1%. Serious ↓ 9.1% to 5.2% P=0.005

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population ER patients age 15y + transporting to another part of the hospital

Intervention Checklist pre-Transport and 4 hour course

Comparator Pre-checklist, ER

Outcome Vital Sign derangement; Equipment issues (all checklist content)

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 2015
Study Record #: 109	First Author (Last name, first intial): Durak VA
Study date (time period covered): 12/13 – 3/14	Study duration: ~4 Mos.
Study type Prospective: Randomized; Interventional (eg, handover tool); Observational Retrospective: Cross Sectional (all patients); Cohort; Case series; Single case report	Location of study Setting: Tertiary /Academic Center; Community Center Country/Countries: Turkey Setting: Pediatric Hospital; Pediatric unit in a hospital; Ped patients in a mixed unit; Unclear/Unknown
Population: Age: Neonates alone; Children (all under 18y); Adults and children Type: General ICU; Surgical ICU; Anesthesia	How data were obtained: Trained Observers; Audit of electronic data; Review of reported events; Data Collection Form Number of pediatric subjects included: Unable to determine; Number: 5?
	Disease subtype (ie, trauma, postop): NA
Adverse event rate: 38 /1000 Total Number of pediatric events: unkn. Percentage of pediatric events (blank if unsure): unkn Comments / notes: not specified.	Death rate Total Number of pediatric events: NR Percentage of pediatric events (blank if unsure): Comments / notes
Severe Permanent Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: unkn	Temporary Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: unkn
Additional Treatment rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: unkn	

Cardiovascular events 16/1000 Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension 6/1000 Dysrhythmia 3/1000 Arrest 5/1000 & HTN	Airway/Respiratory events 11/1000 Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypoxemia 9/1000 Hypercapnia 2/1000
Incidence of equipment-related events 11/1000 (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: IV displaced 11/1000	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Patient factors associated with events Daytime admission from ER higher event rate than nighttime.	Provider factors associated with events NR
Author recommendations for harm prevention "Controlling checklists before transport" "Immobilizing the legs of the patients and the intravenous catheter appropriately".	
Existing guidelines for intra-hospital transport mentioned or included? NHS adult guides.	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided pulled #5 Choi	

Your comments / notes:

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 1997
Study Record #: 891	First Author (Last name, first intial): Kollef MH
Study date (time period covered): 3/96 - 7/96	Study duration: 5 Months

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary / ~~Academic Center~~
- Community Center

Country/Countries: USA / MO

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- ~~Ped patients in a mixed unit~~
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- ~~Adults and children~~

Type:
- General ICU
- Surgical ICU
- Anesthesia

Multi ICUs

How data were obtained
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number:

Disease subtype (ie, trauma, postop): All ICU

Adverse event rate
Total Number of pediatric events: NR
Percentage of pediatric events (blank if unsure):
Comments / notes

Death rate
Total Number of pediatric events: NR
Percentage of pediatric events (blank if unsure):
Comments / notes

Severe Permanent Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes: NR

Temporary Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes: NR

Additional Treatment rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes

NR

Cardiovascular events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Airway/Respiratory events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention &	
Existing guidelines for intra-hospital transport mentioned or included? &	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided No NR	

Your comments / notes: Prospective observational study on VAP looking at a variety of risk factors including transport. Inclusion criteria included age >18y but children were included. Logistic regression showed an independent effects of transport ↑ VAP rates (OR 3.184). Due to supine position, ~~colonization~~ seeding of ETT during manipulation, or just a marker for worsened disease burden.

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	~~Yes~~	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
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Outcome

Transport Complications Study BH 5/2018

Systematic Review

Your initials BH	Year of publication 1998
Study Record # 870	First Author (Last name, first intial) Stearley HE
Study date (time period covered) 1-7/96	Study duration 6 months
Study type Prospective: Randomized; Interventional (eg, handover tool); ~~Observational~~ Retrospective: Cross Sectional (all patients); Cohort; Case series; Single case report	Location of study Setting: Tertiary /Academic Center; Community Center Country/Countries: Setting: Pediatric Hospital; Pediatric unit in a hospital; Ped patients in a mixed unit; Unclear/Unknown
Population: Age: Neonates alone; Children (all under 18y); ~~Adults and children~~ Type: General ICU; Surgical ICU; Anesthesia (multiple ICUs)	How data were obtained: Trained Observers; ~~Audit of electronic data~~; Review of reported events (Data collection form) Number of pediatric subjects included: Unable to determine; Number: 18 Disease subtype (ie, trauma, postop): Hydrocephalus (6), Seizure disorder (12) for MRI
Adverse event rate 7%. Total Number of pediatric events: 2 Percentage of pediatric events (blank if unsure): 2 Comments / notes	Death rate Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): Comments / notes
Severe Permanent Harm rate (see below) unk Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes	Temporary Harm rate (see below) unk Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes
Additional Treatment rate (see below) unk Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes	

Cardiovascular events 31 Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): 0% Events collected, comments/notes: Adult data 24 (11%) vital sign changes - no tx 6 (3%) required tx 1 severe hypotension Pediatric: 0 adverse events	Airway/Respiratory events 0 Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): 0% Events collected, comments/notes:
Incidence of equipment-related events 0 (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): 0% Events collected, comments/notes:	Medication Events 0 Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): 0% Events collected, comments/notes:
Handoff / Communication event Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): 0 Events collected, comments/notes:	Other events: Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Adult 1 seizure
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention use of specialized trained, dedicated ICU transport Nurses	
Existing guidelines for intra-hospital transport mentioned or included? 4	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided 5 ~~Hunter~~	

Your comments / notes:

All pediatric patients received sedation for transport, all had CT/MRI, only 3/12 intubated prior to transport. Data on complications not rigorously reported.

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	**No**
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	**No**
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	**Can't tell**	No
4. Is the researcher's perspective clearly described and taken into account?	**Yes**	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	**Can't tell**	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	**No**
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	**No**
8. Are the results credible, and if so, are they relevant for practice?	Yes	**Can't tell**	No
9. Are the conclusions drawn justified by the results?	Yes	**Can't tell**	No
10. Are the findings of the study transferable to other settings?	Yes	**Can't tell**	No

For interventional studies only:

Patient Population
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Your comments / notes:

ICU patients - no difference in # vitals outside range in ICU patients during or after transport as compared to before transport.
and duration of vitals Δ's ("insults") correlated with # and duration of insults before and after the move.
↑ injury severity score correlates with ↑ insult number.
Transfer from ER - higher insult rate than transfer from ICU; higher post-transport insult rate

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
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N/A

Transport Complications Study BH 5/2018
Systematic Review

Your initials: RH	Year of publication: ~~1995~~ 1990
Study Record #: ~~265~~ 1093	First Author (Last name, first intial): ~~Fridlund S~~ Andlers
Study date (time period covered): 2/89 - 8/89	Study duration: 6 mo

Study type
Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study
Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: UK / Scotland

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- Ped patients in a mixed unit
- Unclear/Unknown

Population:
Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

50 ~~88~~ patient transfers

Type:
- General ICU
- Surgical ICU
- Anesthesia

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included: Unable to determine / Number:

Disease subtype (ie, trauma, postop): ↑ ICP / Trauma

Adverse event rate 50%.
Total Number of pediatric events: UNK
Percentage of pediatric events (blank if unsure):
Comments / notes
Vitals out of range = event

Death rate ¢
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes

Severe Permanent Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
UNK / NR

Temporary Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
NR

Additional Treatment rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
NR

Cardiovascular events Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension 5+2 (14%) Hypotension 3+1 (8%)	Airway/Respiratory events Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypoxia 3+4 (14%)
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Medication Events Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: VMK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ~~↑ICP 8 (16%)~~ ↑ICP 6 (12%)
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention Adequate resuscitation and stabilization before transport ~~ETCO2~~ pCO2 if vent not s'ed movement/stimulus can increase metabolic rate and therefore	
Existing guidelines for intra-hospital transport mentioned or included? None	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided ~~Frantz~~ None	

Transport Complications Study BH 5/2018
Systematic Review

Your initials: 1134	Year of publication: 1988
Study Record #: 154	First Author (Last name, first intial): Indeck M
Study date (time period covered): Jan.	Study duration: 3 months
Study type Prospective: Randomized / Interventional (eg, handover tool) / Observational Retrospective: Cross Sectional (all patients) / Cohort / Case series / Single case report	Location of study Setting: Tertiary /Academic Center / Community Center Country/Countries: USA / MD Setting: Pediatric Hospital / Pediatric unit in a hospital / Ped patients in a mixed unit / Unclear/Unknown
Population: Age: Neonates alone / Children (all under 18y) / Adults and children Type: General ICU / Surgical ICU / Anesthesia	How data were obtained: Trained Observers / Audit of electronic data / Review of reported events Data collection from Number of pediatric subjects included: Unable to determine / Number: Disease subtype (ie, trauma, postop): 103 transports / 56 patients
Adverse event rate: 68 y. Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Comments / notes: Δ in vitals	Death rate Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: None
Severe Permanent Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR	Temporary Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR
Additional Treatment rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR	

Cardiovascular events Total Number of pediatric events: at least 40 (40%) Percentage of pediatric events (blank if unsure): unk. Events collected, comments/notes: BP Δ ≥20mmHg 46 (40%) HR Δ ≥20 bpm 24 (21%)	Airway/Respiratory events Total Number of pediatric events: At least 23 (20%) Percentage of pediatric events (blank if unsure): Unk Events collected, comments/notes: Resp. Rate Δ ≥ 5 = 23 (20%) O2 Sat Δ ≥ 5% 20 (15%) & Extubation.
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: 6 Percentage of pediatric events (blank if unsure): Events collected, comments/notes: IV discinnection/losses	Medication Events Total Number of pediatric events: NR Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Handoff / Communication event Total Number of pediatric events: NR Percentage of pediatric events (blank if unsure): Events collected, comments/notes:	Other events: Total Number of pediatric events: NR Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention None	
Existing guidelines for intra-hospital transport mentioned or included? None referenced	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided No refs.	

Your comments / notes:

Study of vital sign Δ's during ICU transport.

76% of transports (all diagnostic imaging) did not alter patient's management

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
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N/A

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 1998
Study Record #: 2446	First Author (Last name, first intial): Marx G
Study date (time period covered): NR	Study duration: NR

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: Germany

Setting:
- Pediatric Hospital
- Pediatric ~~unit in a hospital~~
- Ped patients in a mixed unit
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

Type:
- General ICU
- Surgical ICU
- Anesthesia

How data were obtained: Data collection from
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number:

Disease subtype (ie, trauma, postop): all ICU

Adverse event rate: unk	Death rate
Total Number of pediatric events: unk	Total Number of pediatric events: unk
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes: cannot distinguish intra- vs inter-	Comments / notes: ?
Severe Permanent Harm rate (see below)	Temporary Harm rate (see below)
Total Number of pediatric events: unk	Total Number of pediatric events: unk
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes: NR	Comments / notes: NR
Additional Treatment rate (see below)	
Total Number of pediatric events: unk.	
Percentage of pediatric events (blank if unsure):	
Comments / notes: NR	

Cardiovascular events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Airway/Respiratory events Total Number of pediatric events: Unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ↓PF ratio in ~~??%~~ of patients ~~11-28~~ 55%
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Patient factors associated with events PF ratio <250 ~~(??? incidence of worsening during and after transport)~~ Needing > 50% FiO2	Provider factors associated with events

Author recommendations for harm prevention

~~Duct~~
Clamping ETT during disconnection to maintain peep.
Reduce unnecessary transport - prev. literature 68% had physiologic Δ's, but only 24-39% had Δ in management due to imaging

Existing guidelines for intra-hospital transport mentioned or included?

None

References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided

#8? Hurst J J Trauma 33
#25? Stern JW Crit Care Med 23

(Predictors dr Δ's in study were sensitive but not specific)

Your comments / notes:

98 patients age 16+, both intra- and inter-hospital transport. looked at Δ in PaO_2/FiO_2 ratio, created predictive model.

Patients with pre-transport FiO_2 <0.5 were on 60% during transport.
>0.5 were on 100% during transport.

55% of patients had ↓ in PF ratio. only 10% of them recovered in 24 hrs)

other study (Waydhas : 84% had ↓ PF ratio; 43% lasting > 1 hr post transport)

ventilator type mode no difference; duration had no impact. likely disconnect (vs FiO_2)

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	**Yes**	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	**Can't tell**	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	**Can't tell**	No
4. Is the researcher's perspective clearly described and taken into account?	**Yes**	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	**No**
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	**Can't tell**	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	**Can't tell**	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	**Can't tell**	No
9. Are the conclusions drawn justified by the results?	Yes	**Can't tell**	No
10. Are the findings of the study transferable to other settings?	**Yes**	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials ~~Waddel G~~ ISH	Year of publication 1975
Study Record # 1338	First Author (Last name, first intial) Waddel G
Study date (time period covered) NR	Study duration 5 month

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: UK / Scotland

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- Ped patients in a mixed unit
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

Type:
- General ICU
- Surgical ICU
- Anesthesia

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number:

Disease subtype (ie, trauma, postop): UNK.

Adverse event rate 7/55 patients; 7/86 transports	Death rate 3~~3~~/55 patients; 3/86 transports
Total Number of pediatric events: 1	Total Number of pediatric events: 1
Percentage of pediatric events (blank if unsure): 1/7	Percentage of pediatric events (blank if unsure): 1/7
Comments / notes	Comments / notes: 11 year old with pelvic fracture, had rebleeding after transport from OR to ICU; died.

Severe Permanent Harm rate (see below)	Temporary Harm rate (see below)
Total Number of pediatric events:	Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes: UNK	Comments / notes: UNK

Additional Treatment rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes: UNK

1 of 86 transports

Cardiovascular events Total Number of pediatric events: 6 events of 86 transports Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension 2 Atrial fibrillation 1 Hypertension 1 Hemorrhage 1 Cardiac arrest 1 Study 2 i 3 tachycardia of 60 patients 2 HYPERTENSION	Airway/Respiratory events Total Number of pediatric events: 4 Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Airway obstruction
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Drain pulled inadvertently 1/70	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: MR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: MR	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Vomiting 2/70
Patient factors associated with events major chest injuries most vulnerable	Provider factors associated with events MR
Author recommendations for harm prevention 0.	
Existing guidelines for intra-hospital transport mentioned or included? None	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided None	

in ICU patients

Your comments / notes:
2 separate studies, 1 of recording all serious adverse events ~~over~~ 5 months; the second looking at Δ in vital signs in post op patients.

Bias assessment questions		Circle One	
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 2007
Study Record #: 539	First Author (Last name, first intial): Lahner D
Study date (time period covered): not recorded	Study duration: 8 mo

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational ✓

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries:

Setting:
- Pediatric Hospital
- Pediatric unit ~~in a hospital~~
- Ped patients in a mixed unit
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

Type:
- General ICU
- Surgical ICU
- Anesthesia ICU

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Unknown.

Number of pediatric subjects included:
- Unable to determine
- Number: 29

Disease subtype (ie, trauma, postop): Mixed

Adverse event rate
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
26% physiological deterioration
10.4% equipment misuse
4.2% critical incidents
→ 60% retained
Kids
ATP

Death rate
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
0

Severe Permanent Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
0

Temporary Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
0

Additional Treatment rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes

portable vents used in adult-sized kids
manual ventilation for under 15 y

Cardiovascular events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: 13 ↓BP (caused by 10 arrhythmias) 1 HTN crisis 1 asystole 5 rescuscitations incl. 1 CPR	Airway/Respiratory events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: 1 extubation 1 Bronchospasm
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: 1 vent failure 1 chest tube loss	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes:	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: 2 ↑ICP
Patient factors associated with events ↑ APACHE II Score Catechols Mech vent, esp. >5 cmH_2O PEEP Emergency transport (vs elective)	Provider factors associated with events ↓ differences between individual providers ↓ effect of # of escorts
Author recommendations for harm prevention Equipment ✓ and pre transport stabilization ~~2 person team for~~ additional team member for kids (mechanically ventilated)	
Existing guidelines for intra-hospital transport mentioned or included?	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided PMID 15008318 ? ✓ Bercault N Crit Care Med 33 2471-8 ✓	

Your comments / notes:

16/19 critical events due to physiologics Δ's. 3/19 due to equipment

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials: RH	Year of publication: 2007
Study Record #: 555	First Author (Last name, first intial): PAPSON J
Study date (time period covered): 3/03 - 6/04	Study duration: 15 mo
Study type Prospective: Randomized Interventional (eg, handover tool) Observational Retrospective: Cross Sectional (all patients) Cohort Case series Single case report	**Location of study** Setting: Tertiary /Academic Center Community Center Country/Countries: Australia Setting: Pediatric Hospital Pediatric unit in a hospital Ped patients in a mixed unit Unclear/Unknown ER
Population: Age: Neonates alone Children (all under 18y) Adults and children Type: General ICU Surgical ICU Anesthesia ER	How data were obtained: Trained Observers Audit of electronic data Review of reported events data collection form Number of pediatric subjects included: Unable to determine Number: Disease subtype (ie, trauma, postop): ER - mostly trauma intubated
Adverse event rate Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes "Unexpected events"	Death rate Total Number of pediatric events: 4 Percentage of pediatric events (blank if unsure): Comments / notes 4
Severe Permanent Harm rate (see below) Total Number of pediatric events: unk. Percentage of pediatric events (blank if unsure): Comments / notes	Temporary Harm rate (see below) Total Number of pediatric events: unk. Percentage of pediatric events (blank if unsure): Comments / notes
Additional Treatment rate (see below) Total Number of pediatric events: unk. Percentage of pediatric events (blank if unsure): Comments / notes	Unexpected events: 230 pts - 69.9% had event. 604 events 478 (79.1%) required intervention

MI 1
Cardiac arrest 3
Pneumothorax 1

ETT displacement 3
Intubation 4
Ventilation failure 2
Aspiration 1

Cardiovascular events Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension 33 (5.5%) — Severe 6 Hypertension 8 (1.3%) "other" 49 (8.1%)	Airway/Respiratory events Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Coughing on ETT 18 (3.0%) SpO_2 <90% 14 (2.3%) ETT disconnect 6 Ventilator air leak 18 (3.0%) Ventilator failure 11 (1.8%)
central line out 2 Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): missing equip 2 cases; Trapped in elevator 1 case Events collected, comments/notes: Infusion Interruption 8 (1.3%) Displaced O_2 Sat probe 50 (8.3%) Disconnected O_2 Sat Probe 14 (2.3%) IV Displaced 8 (1.3%)	Medication Events Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Sedation wore off 20 (3.3%) Paralysis wore off 16 (2.7%)
Handoff / Communication event Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: "rejected at destination" 3 (0.5%) low Monitor Battery 17 (2.8%)	Other events: Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ↑ ICP 4 Critical delay 2
Patient factors associated with events 70% of Serious events were due to patient instability	Provider factors associated with events 30% due to providers — Extubation Central line displacement Ventilation failure Higher ~~than~~ event rate with trainees vs ~~attending~~ attending

Author recommendations for harm prevention
Consider credentialing for transport
~~Multicenter studies needed~~
Review existing ~~guidelines~~ guidelines

Existing guidelines for intra-hospital transport mentioned or included? 10, 14, 17, 18
Emerg. Med 2003 15:202-4
Hurst JM J Trauma 1992 33:582-5
Warren J Crit Care Med 2004 32:256-62
Dunn MJ Emerg Med 2007 24:40-4

References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided

¢ new

Your comments / notes:

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018

1230 Systematic Review

Your initials: BH	Year of publication: 2004
Study Record #: 678	First Author (Last name, first intial): Beckmann U
Study date (time period covered): 1993-1999	Study duration: 6y

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting: multi Center
- Tertiary /Academic Center
- Community Center

Country/Countries: Australia

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- Ped patients in a mixed unit
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

Type:
- General ICU
- Surgical ICU
- Anesthesia

unclear

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number:

Disease subtype (ie, trauma, postop): All ICUs

Adverse event rate unk. (Total # events 17)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes

Death rate 4 reports (2%)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes

Severe Permanent Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
"physical/psychological injury" 3% more

Temporary Harm rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
Major physiologic derangement 26 (15%)

Additional Treatment rate (see below)
Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):
Comments / notes
Prolonged hosp. stay 7 (4%)

Cardiovascular events
Total Number of pediatric events: ?
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:
Cardiac arrest 6 (3%)
Hypotension 5 (3%)

Airway/Respiratory events
Total Number of pediatric events: ?
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:
Hypoxia/Hypovent, b/w 21 (11%) Extubation 3
Malposition ETT 10
Inadequate securing airway 6
Unplanned reintubation 4

Elevator 18
Bed 4
Battery 4
No monitor avail 2
Faulty monitor 2
IV out 9
poorly secured IV 7
Disconnected 2
Inadeq. monitor 11

Incidence of equipment-related events 75 (39%) ?
(incl. monitoring gaps or other monitoring events)
Total Number of pediatric events: Unc.
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:
Equip. failure 34 Poor maintenance 19
Inadeq. Equip 22 Unavail. Equip 17
Poor design 2 Inadeq. Training on Equip 19

Medication Events 14
Total Number of pediatric events: ?
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:
Delay 14
Interruption of infusion 4
Emerg. drugs unavail 2

Handoff / Communication event
Total Number of pediatric events: ?
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:
Communication problem 18
& notification of consul 5

Other events:
Total Number of pediatric events: ?
Percentage of pediatric events (blank if unsure):
Events collected, comments/notes:

Patient factors associated with events

Provider factors associated with events
54% had human-factors.
Knowledge-based error 130 (22%)
Rule-based error 149 (18%)
skill-based error 70 (8%)
Technical error 43 (6%)

Author recommendations for harm prevention
Pull table 3 (% of cases - reported that harm prevented)
Rechecking equipment (35%)
Rechecking patient (34%)
Prior experience 29%
~~Used Protocol~~ Use of Correct Protocol 23% Skilled assistance 16%

Existing guidelines for intra-hospital transport mentioned or included?
Yes - ref 17, 18, 19, 46 - adult/australian.

References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided
15 Pristas LR, Rausch T 1997 Critical Care Nurse Q 20: 72-80
20 Beyer AJD et al 1992 Crit Care Med 20: 961-966
26 De Cosmo G et al 1993 Eur J Anaes.

1) All transports should have staff skilled in critical care and airway management and undergo specific training for patient transport.

Your comments / notes: Unclear if pediatric patients included.

Dr. Beckman emailed - no response

Equip included: Elevators, Battery/Power Supply, Infusion pumps, Intubation equip, O2 Supply, Monitors.

Most events multifactorial - 900 root causes in 176 events. ↗ Checklist!

91% of events - extent of event was limited by recheeks or protocols

Bias assessment questions		Circle One	
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population

Intervention

Comparator

Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 2006
Study Record #: 557	First Author (Last name, first intial): Gillman L
Study date (time period covered): 3/04-10/04	Study duration: 6 mos
Study type Prospective: Randomized; Interventional (eg, handover tool); Observational Retrospective: Cross Sectional (all patients); Cohort; Case series; Single case report ½ Prospective, ½ Retrospective	Location of study Setting: Tertiary /Academic Center; ~~Community Center~~ Country/Countries: Australia Setting: Pediatric Hospital; Pediatric unit in a hospital; Ped patients in a mixed unit; Unclear/Unknown
Population: Age: Neonates alone; Children (all under 18y); ~~Adults and children~~ Type: General ICU; Surgical ICU; Anesthesia (ER)	How data were obtained: Trained Observers; Audit of electronic data; ~~Review of reported events~~ Data Collection form Number of pediatric subjects included: Unable to determine; Number: Disease subtype (ie, trauma, postop): ER to ICU
Adverse event rate: 22.2% Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Comments / notes	Death rate Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: & NR
Severe Permanent Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR	Temporary Harm rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR
Additional Treatment rate (see below) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Comments / notes: NR	

"Cardiorespiratory" 6%.

Cardiovascular events Total Number of pediatric events: 7 Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Tachycardia 7 New vasopressor/inotrope 2 Hypotension 4 (1.4%) Arrhythmia 3 - VF, Asystole, AF (1%) Hypertension 3 (1%)	Airway/Respiratory events Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Desaturation 1 (0.3%) Vent. off by accident 1 (0.3%)
Incidence of equipment-related events 26 (9%) (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Loss of battery charge 13 Malfunction 8 ~~Ventilator off by accident 1~~ O_2 hose leak 1 O_2 gauge failure 1 loss of IV 1	Medication Events Total Number of pediatric events: ϕ Percentage of pediatric events (blank if unsure): Events collected, comments/notes:
Handoff / Communication event Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Delay 54 of preoperative group (38%) Wrong ID 1 (0.3%) → defined as 20 min or more	Other events: Total Number of pediatric events: ? Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypothermia 20 (7%) ~~Hypothermia 53 (18%)~~ ~~Delay 54 (38%)~~ ~~Wrong ID 1~~
Patient factors associated with events ϕ	Provider factors associated with events ϕ
Author recommendations for harm prevention ϕ	
Existing guidelines for intra-hospital transport mentioned or included? ϕ Yes - all prev. collected.	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided ϕ None	

Your comments / notes: experienced a fall in temperature 18% of Patients ~~lost 1°C or more.~~ Likely almost all adult data

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	**No**
2. Is the research method (study design) appropriate for answering the research question?	Yes	**Can't tell**	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	**Yes**	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	**Yes**	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	**No**
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	**No**
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	**No**
8. Are the results credible, and if so, are they relevant for practice?	Yes	**Can't tell**	No
9. Are the conclusions drawn justified by the results?	Yes	**Can't tell**	No
10. Are the findings of the study transferable to other settings?	Yes	**Can't tell**	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

MG 524

Your initials	BH	Year of publication	2001
Study Record #	776	First Author (Last name, first intial)	Lovell MA
Study date (time period covered)	5/97-1/98	Study duration	8 mo

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- ~~Observational~~

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: Australia

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- ~~Ped patients in a mixed unit~~
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- ~~Adults and children~~

Type:
- General ICU
- Surgical ICU
- Anesthesia

How data were obtained:
- Trained Observers
- Audit of electronic data
- ~~Review of reported events~~ Data collection tool

Number of pediatric subjects included:
- ~~Unable to determine~~
- Number: out of 76 transports 97

Disease subtype (ie, trauma, postop): Not defined

Adverse event rate: 62 %.	Death rate
Total Number of pediatric events: unk.	Total Number of pediatric events: 0
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes	Comments / notes
Severe Permanent Harm rate (see below)	Temporary Harm rate (see below)
Total Number of pediatric events:	Total Number of pediatric events:
Percentage of pediatric events (blank if unsure):	Percentage of pediatric events (blank if unsure):
Comments / notes	Comments / notes
Additional Treatment rate (see below)	
Total Number of pediatric events:	
Percentage of pediatric events (blank if unsure):	
Comments / notes	

Cardiovascular events Total Number of pediatric events: Unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Hypotension 6 (6%) other arrhythm 1 (1%) Hypertension 10 (10%) ECG changes 1 (1%) Tachycardia 7 (7%) Bleeding 2 (2%) Bradycardia 3 (3%)	Airway/Respiratory events Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Desaturation 5 (5%) Disconnection 4 (4%) ↑ Airway Pressure 3 (3%) Inadequate Seal 1 (1%) ETT plugging 2 (2%) Leak Excess Coughing 1 (1%)
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Inadequate IV access 1 (1%) IV disconnect 4 (4%) Empty O2 [illegible] 1 (1%) Monitor Malfunction 2 (2%) Battery failure 7 (7%) Intolerance 4 (4%)	Medication Events Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Medication runs out 1 (1%) Pump failure 1 (1%)
Handoff / Communication event Total Number of pediatric events: Unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: Delays 5 (5%)	Other events: Total Number of pediatric events: unk Percentage of pediatric events (blank if unsure): Events collected, comments/notes: ~~Delays 5 (5%)~~ ↑ ICP 1 (1%) ~~Excess Movement~~
Patient factors associated with events Trauma Inotropes	Provider factors associated with events "Communication difficulties"
Author recommendations for harm prevention use of self-inflating bag instead of Mapleson circuit. labelling IV lines Creation of transport protocol.	
Existing guidelines for intra-hospital transport mentioned or included? ANZCA guidelines - ref #4	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided All [illegible] cited	

lack of Suction

lack of power outlets

Your comments / notes:

2/3rds Urgent.

More issues in patients on inotropes and in Trauma patients

11 of 15 (73%)

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	(Can't tell)	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	(Can't tell)	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	(Can't tell)	No
4. Is the researcher's perspective clearly described and taken into account?	(Yes)	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	(Can't tell)	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	(Yes)	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	(No)
8. Are the results credible, and if so, are they relevant for practice?	(Yes)	Can't tell	No
9. Are the conclusions drawn justified by the results?	(Yes)	Can't tell	No
10. Are the findings of the study transferable to other settings?	(Yes)	Can't tell	No

For interventional studies only:

Patient Population

Intervention

Comparator

Outcome

Transport Complications Study BH 5/2018

Systematic Review

Your initials: BH	Year of publication: 1957
Study Record #: C	First Author (Last name, first intial): McKlejohn
Study date (time period covered): ?	Study duration: ?

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- Observational

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- Tertiary /Academic Center
- Community Center

Country/Countries: UK

Setting:
- Pediatric Hospital
- Pediatric unit in a hospital
- Ped patients in a mixed unit
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- Adults and children

Type:
- General ICU
- Surgical ICU
- Anesthesia

How data were obtained:
- Trained Observers
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number:

Disease subtype (ie, trauma, postop): Immediate Postop transfer

Adverse event rate

Total Number of pediatric events: UNK

Percentage of pediatric events (blank if unsure):

Comments / notes: 61.4-1.

Death rate

Total Number of pediatric events: Unclear

Percentage of pediatric events (blank if unsure):

Comments / notes: Q

Severe Permanent Harm rate (see below)

Total Number of pediatric events:

Percentage of pediatric events (blank if unsure):

Comments / notes: Q

Temporary Harm rate (see below)

Total Number of pediatric events:

Percentage of pediatric events (blank if unsure):

Comments / notes: Q

Additional Treatment rate (see below)

Total Number of pediatric events:

Percentage of pediatric events (blank if unsure):

Comments / notes: Q

Cardiovascular events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Airway/Respiratory events Total Number of pediatric events: UNK Percentage of pediatric events (blank if unsure): Events collected, comments/notes: 61.4% hypoxemia (≤90%) ≤85%) 21.9 Severe hypoxemia (≤
Incidence of equipment-related events (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: Percentage of pediatric events (blank if unsure): NR Events collected, comments/notes:	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Patient factors associated with events &	Provider factors associated with events &
Author recommendations for harm prevention Supplemental oxygen after anesthesia	
Existing guidelines for intra-hospital transport mentioned or included? &	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided & NR	

Your comments / notes:

Observational study on patients post-anesthesia and degree of desaturation during transport (90-240 sec duration). Included few children. Intraoperative ventilation strategy and area of incision recorded; ↳ difference.

Bias assessment questions	Circle One		
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome

Transport Complications Study BH 5/2018
Systematic Review

Your initials: BH	Year of publication: 1989
Study Record #: E	First Author (Last name, first intial): Weg JG
Study date (time period covered): unk.	Study duration: unk

Study type

Prospective:
- Randomized
- Interventional (eg, handover tool)
- (Observational)

Retrospective:
- Cross Sectional (all patients)
- Cohort
- Case series
- Single case report

Location of study

Setting:
- (Tertiary /Academic Center)
- Community Center

Country/Countries: USA

Setting:
- Pediatric Hospital
- ~~Pediatric unit in a hospital~~
- (Ped patients in a mixed unit)
- Unclear/Unknown

Population:

Age:
- Neonates alone
- Children (all under 18y)
- (Adults and children)

Type:
- (General ICU)
- Surgical ICU
- Anesthesia

How data were obtained:
- (Trained Observers)
- Audit of electronic data
- Review of reported events

Number of pediatric subjects included:
- Unable to determine
- Number: 1

Disease subtype (ie, trauma, postop): ICU

Adverse event rate Total Number of pediatric events: 2 (2%) Percentage of pediatric events (blank if unsure): NO Comments / notes only 1 child, had adverse event.	Death rate Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): Comments / notes
Severe Permanent Harm rate (see below) Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): Comments / notes	Temporary Harm rate (see below) Total Number of pediatric events: 0 Percentage of pediatric events (blank if unsure): Comments / notes
Additional Treatment rate (see below) Total Number of pediatric events: 2 Percentage of pediatric events (blank if unsure): Comments / notes NR	

Cardiovascular events Total Number of pediatric events: Q Q Percentage of pediatric events (blank if unsure): Events collected, comments/notes: daily Hypotension (SBP <90) and arrhythmia	Airway/Respiratory events 2/20 Total Number of pediatric events: 2 Percentage of pediatric events (blank if unsure): 100 Events collected, comments/notes: Hypotania 1/20 (Y, Pediatric) by PO2 ABG Hypercarbia 1/20 (Y, Pediatric) Hypoxemia Y20 (Y, Pediatric) BSO peak airway pressure 60
Incidence of equipment-related events 2/20 (incl. monitoring gaps or other monitoring events) Total Number of pediatric events: 2/2 Percentage of pediatric events (blank if unsure): 100 Events collected, comments/notes: O2 disconnected 1/20 (Y, ped) Chest tube clamping 1/20 (Y, Ped)	Medication Events Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Handoff / Communication event Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR	Other events: Total Number of pediatric events: Percentage of pediatric events (blank if unsure): Events collected, comments/notes: NR
Patient factors associated with events NR	Provider factors associated with events NR
Author recommendations for harm prevention Regular training for manual ventilation using test lungs and/or spirometer.	
Existing guidelines for intra-hospital transport mentioned or included? Yes SCCM 1988	
References to pull: Please include reference # from manuscript and pubmed ID or DOI if provided Y'll - no new pulls.	

Your comments / notes:

20 adult (youngest 17y) intubated ICU patients looked at ABG, BP, HR and arrhythmia before and after transport. 1 had ↑ PCO_2 ↓ PO_2 due to O2 disconnection and clamped chest tube. 1 had hyperventilation (chest pediatric)

Bias assessment questions		Circle One	
1. Did the study address a clearly focused question / issue?	Yes	Can't tell	No
2. Is the research method (study design) appropriate for answering the research question?	Yes	Can't tell	No
3. Are both the setting and the subjects representative with regard to the population to which the findings will be referred?	Yes	Can't tell	No
4. Is the researcher's perspective clearly described and taken into account?	Yes	Can't tell	No
5. Are the methods for collecting data clearly described?	Yes	Can't tell	No
6. Are the methods for analyzing the data likely to be valid and reliable? Are quality control measures used?	Yes	Can't tell	No
7. Was the analysis repeated by more than one researcher to ensure reliability?	Yes	Can't tell	No
8. Are the results credible, and if so, are they relevant for practice?	Yes	Can't tell	No
9. Are the conclusions drawn justified by the results?	Yes	Can't tell	No
10. Are the findings of the study transferable to other settings?	Yes	Can't tell	No

For interventional studies only:

Patient Population
Intervention
Comparator
Outcome