Les 5 principales publications préhospitalières 2017/2018

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1 PPC-VS

ORIGINAL RESEARCH　　　　　　　　　　**Open Access**

CrossMark

Prehospital treatment with continuous positive airway pressure in patients with acute respiratory failure: a regional observational study

Vibe Maria Laden Nielsen[1,2]*, Jacob Madsen[1], Anette Aasen[1], Anne Pernille Toft-Petersen[1,2], Kenneth Lübcke[3], Bodil Steen Rasmussen[1,2] and Erika Frischknecht Christensen[1,2,3]

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Contexte

Dyspnée aiguë

     Œdème pulmonaire

     Infection

     BPCO exacerbée

     Asthme

Emergency Medical System Denmark

     basic level

     intermediate level

     advanced level

Objectif

«to evaluate effectiveness of CPAP as an addition to standard care»

Méthodologie

1. Étude de suivi sur 14 mois

Adultes
«Difficulty in breathing»

→ **Groupe PPC-VS**

Critères primaires
adverse events
Interruption du traitement PPC-VS

Critères secondaires SpO_2

Fréquence respiratoire

2. Étude «avant-après»
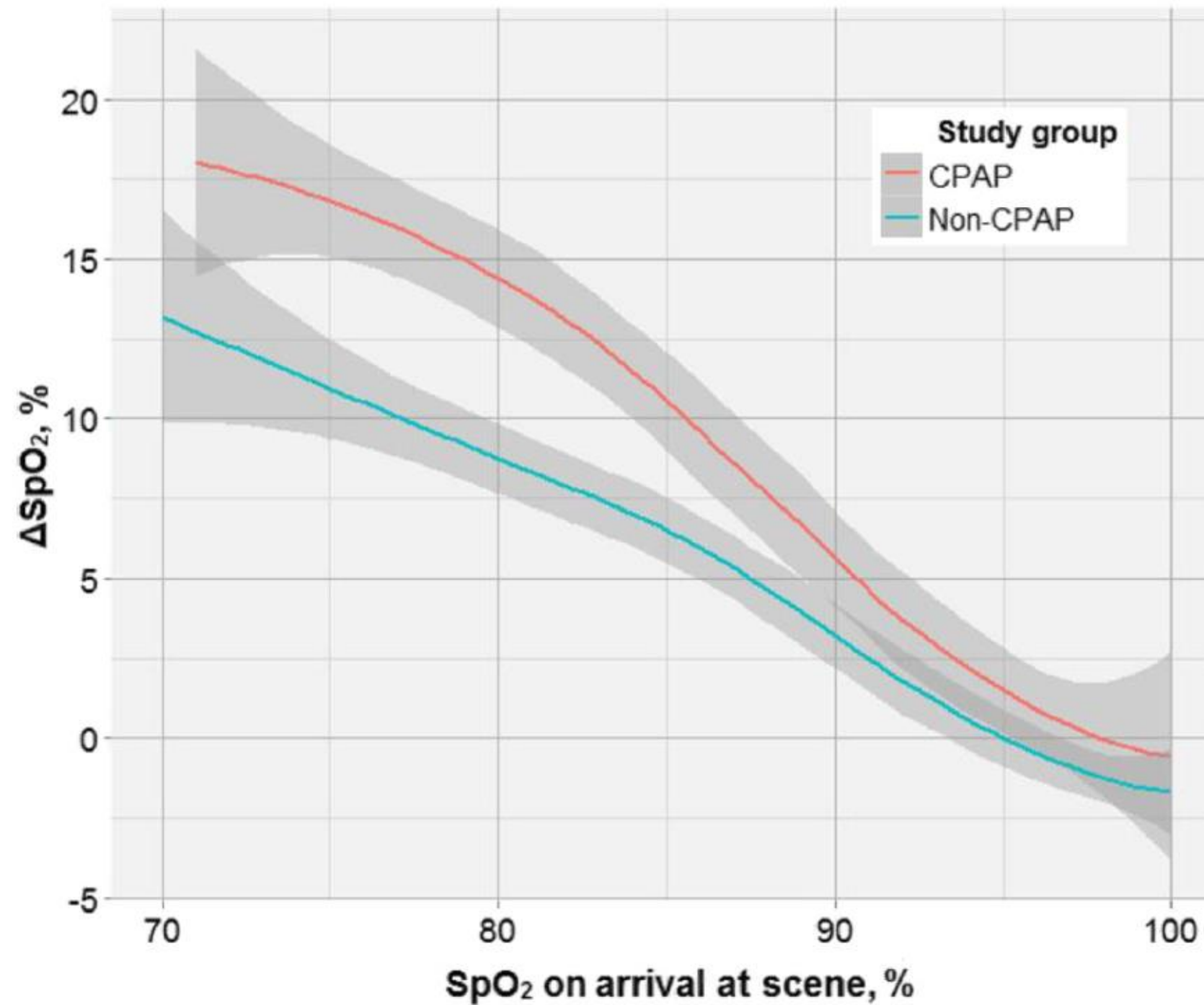
Comparaison avec le «Non-CPAP-Group» historique

Résultats

Table 4 Vital signs recorded upon arrival at scene and arrival at hospital

	CPAP	Non-CPAP	p-value
Status on arrival at scene			
SpO2, %	87 (77–94)	92 (85–97)	<0.01
	(N = 159)	(N = 723)	
Respiratory rate, breaths/min	32 (28–38)	28 (24–32)	<0.01
	(N = 163)	(N = 692)	
Systolic blood pressure[a], mmHg	157 (± 34)	155 (± 33)	0.51
	(N = 159)	(N = 704)	
Diastolic blood pressure[a], mmHg	92 (± 24)	93 (± 24)	0.93
	(N = 145)	(N = 704)	
Status on arrival at hospital			
SpO2, %	96 (94–99)	96 (91–98)	0.02
	(N = 168)	(N = 715)	
Respiratory rate, breaths/min	25 (21–30)	24 (21–30)	0.67
	(N = 163)	(N = 550)	
Systolic blood pressure[a], mmHg	140 (± 25)	142 (± 30)	0.25
	(N = 156)	(N = 679)	
Diastolic blood pressure[a], mmHg	85 (± 19)	86 (± 24)	0.59
	(N = 145)	(N = 676)	

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Résultats

Fig. 2 Changes in SpO_2 from arrival at scene to arrival at hospital as a function of initial SpO_2 value and according to study group. Grey areas represent 95 % confidence limits. Number of points: 30. CPAP group: $N = 136$. Non-CPAP group: $N = 663$

Quintessence

Conclusions:
In an emergency medical service […], adherence to CPAP treatment […] was high and treatment was effective in patients with acute respiratory failure.

Discussion:
The study design reflects the daily prehospital working environment […] **paramedics educated in treating symptoms of acute respiratory failure, rather than treating one specific diagnosis.**

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2 INTUBATION

Critical Care

Open Access

CrossMark

The success of pre-hospital tracheal intubation by different pre-hospital providers: a systematic literature review and meta-analysis

K. Crewdson[1,2*], D. J. Lockey[1,2,3], J. Røislien[4], H. M. Lossius[3,4] and M. Rehn[1,3,4]

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Contexte

Qui procède à une intubation préclinique – ce sujet reste controversé

Intubation préclinique complexe exigeant une grande expérience

Dernières données datant de 2009 (publiées en 2012)

Méthodologie

Table 1 Search criteria used to identify relevant studies

Keywords

MEDLINE "Emergency Medical Services" AND "intubation, intratracheal"

EMBASE "Emergency Care " AND "intubation/or respiratory tract intubation

Title/abstract

"prehospital" AND "intubation"

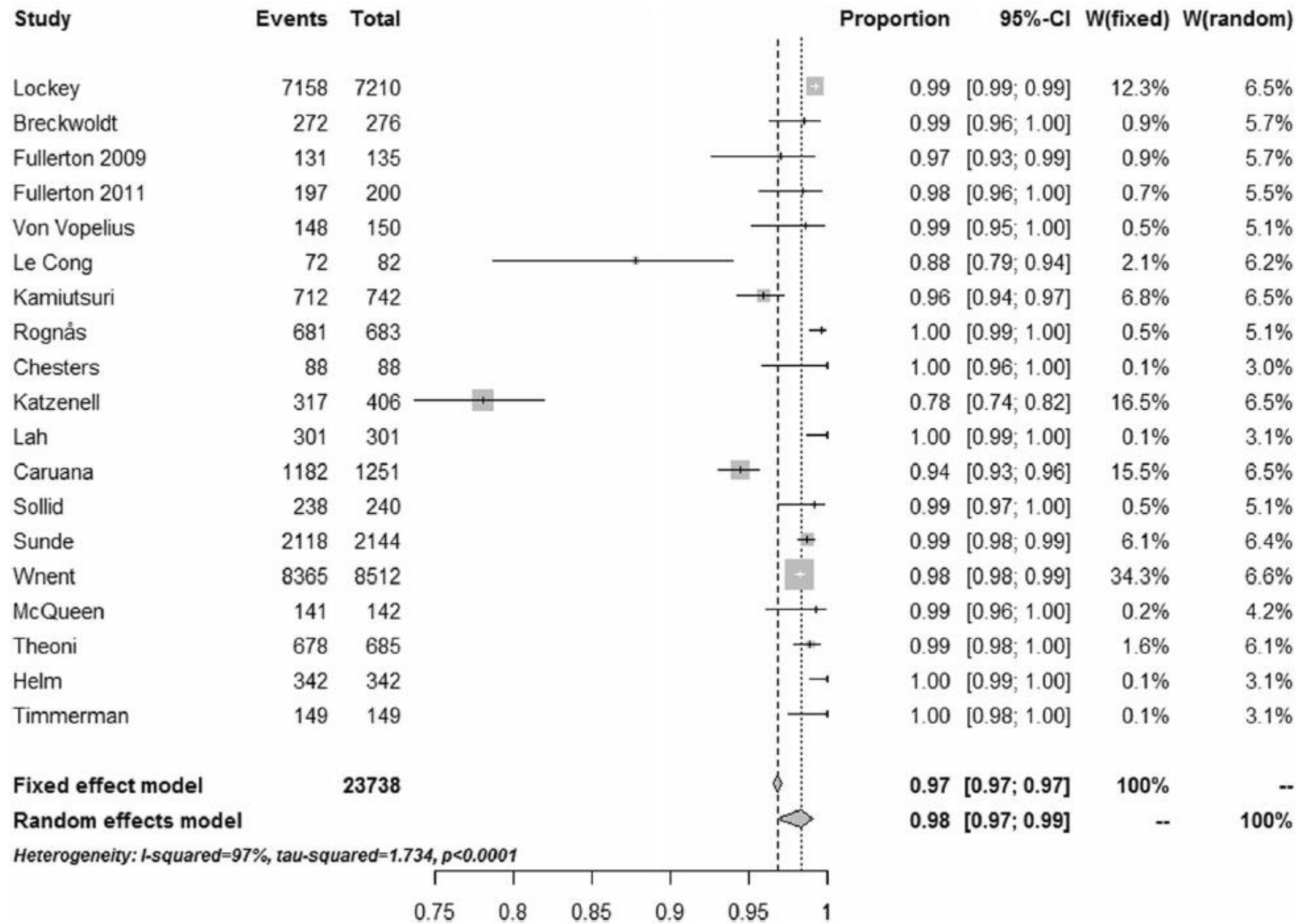"pre-hospital" AND "intubation"

"out-of-hospital" AND "intubation"

"prehospital " AND "RSI" OR "rapid sequence induction"

"pre-hospital " AND "RSI" OR "rapid sequence induction"

1838 Titles / Abstracts

128 full text articles accessed

38 articles identifed and included

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Résultats

Fig. 3 Success rates from studies describing intubation by physicians. *CI* confidence interval [12, 17, 20, 22, 30, 35, 41, 42, 43, 45–49, 51–53, 56, 57]

Résultats

Tentatives d'intubation au total	19178
Intubations réussies dès la 1ère tentative	14913 (77,8 %)
1ère tentative d'intubation par un médecin	87,2 % (77,6 – 97,9)
1ère tentative d'intubation par un non-médecin	69,6 % (63,4 – 97,3)

The reporting of data for pre-hospital advanced airway management has improved significantly since the publication of previous meta-analyses in 2010 and 2012.

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Since there is considerable evidence that poorly performed intubation carries a significant morbidity and mortality, careful consideration should be given to the **level of training and experience** required to deliver this pre-hospital intervention safely.

3 OXYGÉNATION

Clinical paper

Effect of prehospital advanced airway management for pediatric out-of-hospital cardiac arrest☆,☆☆

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Naoko Ohashi-Fukuda [a,b], Tatsuma Fukuda [a,c,*], Kent Doi [a], Naoto Morimura [a]

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Contexte

Réanimations d'enfants souvent dues à une asphyxie

Au Japon, 1 % des réanimations concernent des enfants

Évidence rare pour l'advanced airway management préclinique

Selon les directives actuellement en vigueur (AHA, ERC), la ventilation artificielle par masque est plus importante que l'intubation/les dispositifs supraglottiques de prise en charge des voies respiratoires

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Méthodologie

Base de données prospective (All-Japan Utstein Registry)

Tous les patients sont transférés vers des services d'urgence
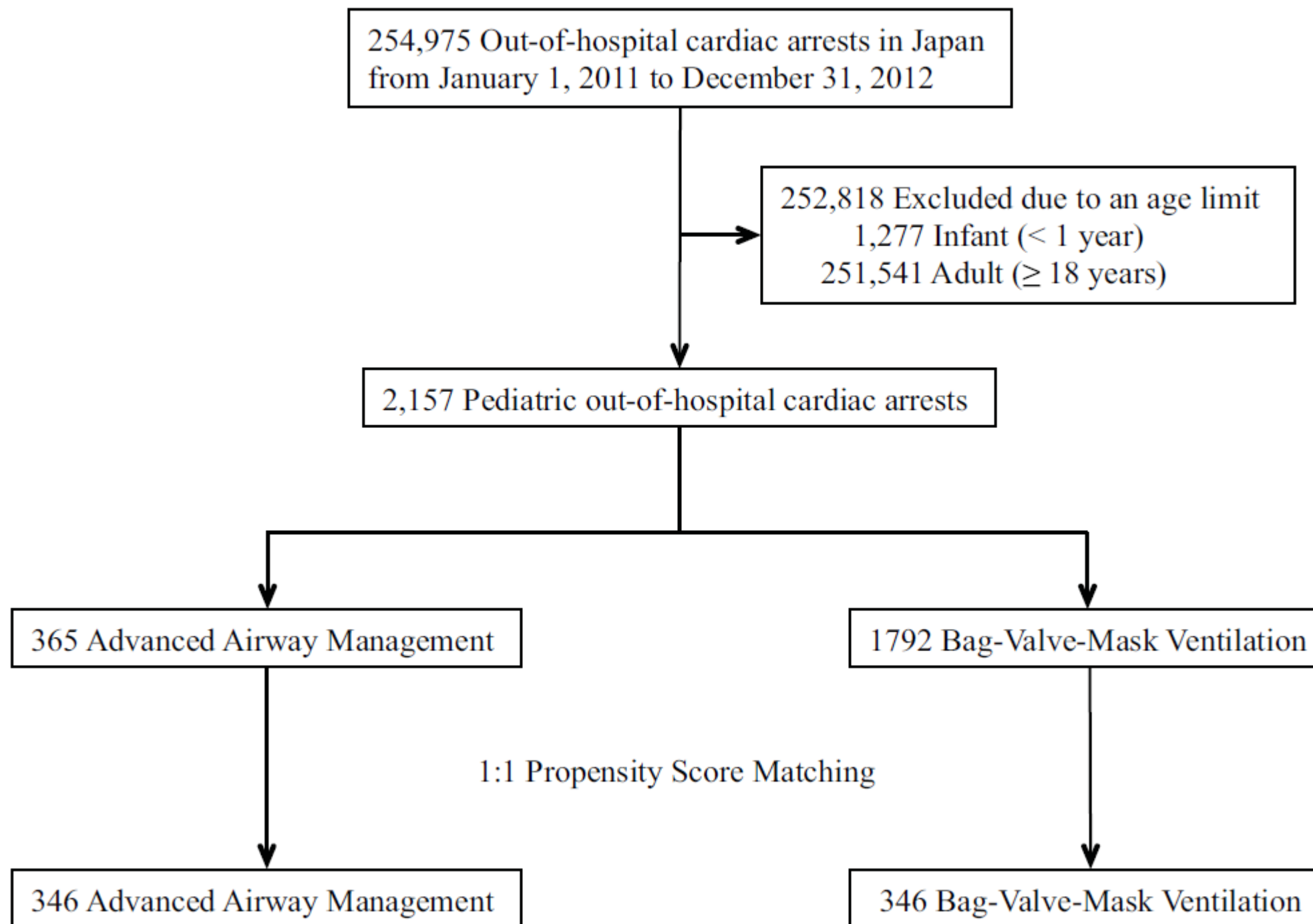
Résultats

Table 2

Outcomes in the propensity score-matched cohort.

	No. (%) of favorable outcomes by group		OR (95%CI)	P value
	AAM n = 346	BVM n = 346		
Favorable neurological outcome (CPC 1 or 2)	12 (3.5)	16 (4.6)	0.74 (0.35–1.59)	0.43
Favorable neurological outcome (CPC 1)	9 (2.6)	14 (4.1)	0.63 (0.27–1.48)	0.28
One-month survival	51 (14.7)	37 (10.7)	1.44 (0.92–2.27)	0.10
Pre-hospital ROSC	32 (9.3)	32 (9.3)	1.00 (0.60–1.67)	1.00

The data are expressed as the number (%) of patients, unless otherwise indicated.
Abbreviations: AAM, advanced airway management; BVM, bag-valve-mask; OR, odds ratio; CI, confidence interval; CPC, Glasgow-Pittsburgh cerebral performance category; ROSC, return of spontaneous circulation.

Table 3

Multivariable logistic regression analysis in the overall unmatched cohort.

	No. (%) of favorable outcomes by group		Crude OR (95%CI)	Adjusted OR (95%CI)
	AAM n = 365	BVM n = 1792		
Favorable neurological outcome (CPC 1 or 2)	12 (3.3)	201 (11.2)	0.23 (0.11–0.42)	0.55 (0.24–1.14)
Favorable neurological outcome (CPC 1)	9 (2.5)	181 (10.1)	0.27 (0.14–0.47)	0.52 (0.21–1.18)
One-month survival	51 (14.0)	335 (18.7)	0.71 (0.51–0.96)	1.37 (0.93–1.99)
Pre-hospital ROSC	34 (9.3)	271 (15.1)	0.58 (0.39–0.83)	0.88 (0.54–1.38)

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Quintessence

In pediatric OHCA, prehospital AAM was not associated with an increased chance of neurologically favorable survival compared with BVM-only ventilation.

4 ENTRAÎNEMENT

A Continuous Quality Improvement Airway Program Results in Sustained Increases in Intubation Success

David J. Olvera, NRP, FP-C, CMTE, David F. E. Stuhlmiller, MD, Allen Wolfe, RN, Charles F. Swearingen, BS, NREMT-P, FP-C, Troy Pennington, DO, Daniel P. Davis, MD

Contexte

Taux de complication
48 % pour les intubations précliniques

Stratégies pour une RSI (Rapid Sequence Induction) réussie

Acquérir et maintenir les compétences requises

Helicopter Advanced Resuscitation Training (HeART)

    160 bases
    Simulations
    Performance
    Prise de décision
    Capacités techniques

Méthodologie

Période d'observation de 25 mois (2015-2017)

Taux de réussite des RSI par le programme HeART

Intégration de la laryngoscopie directe/vidéolaryngoscopie
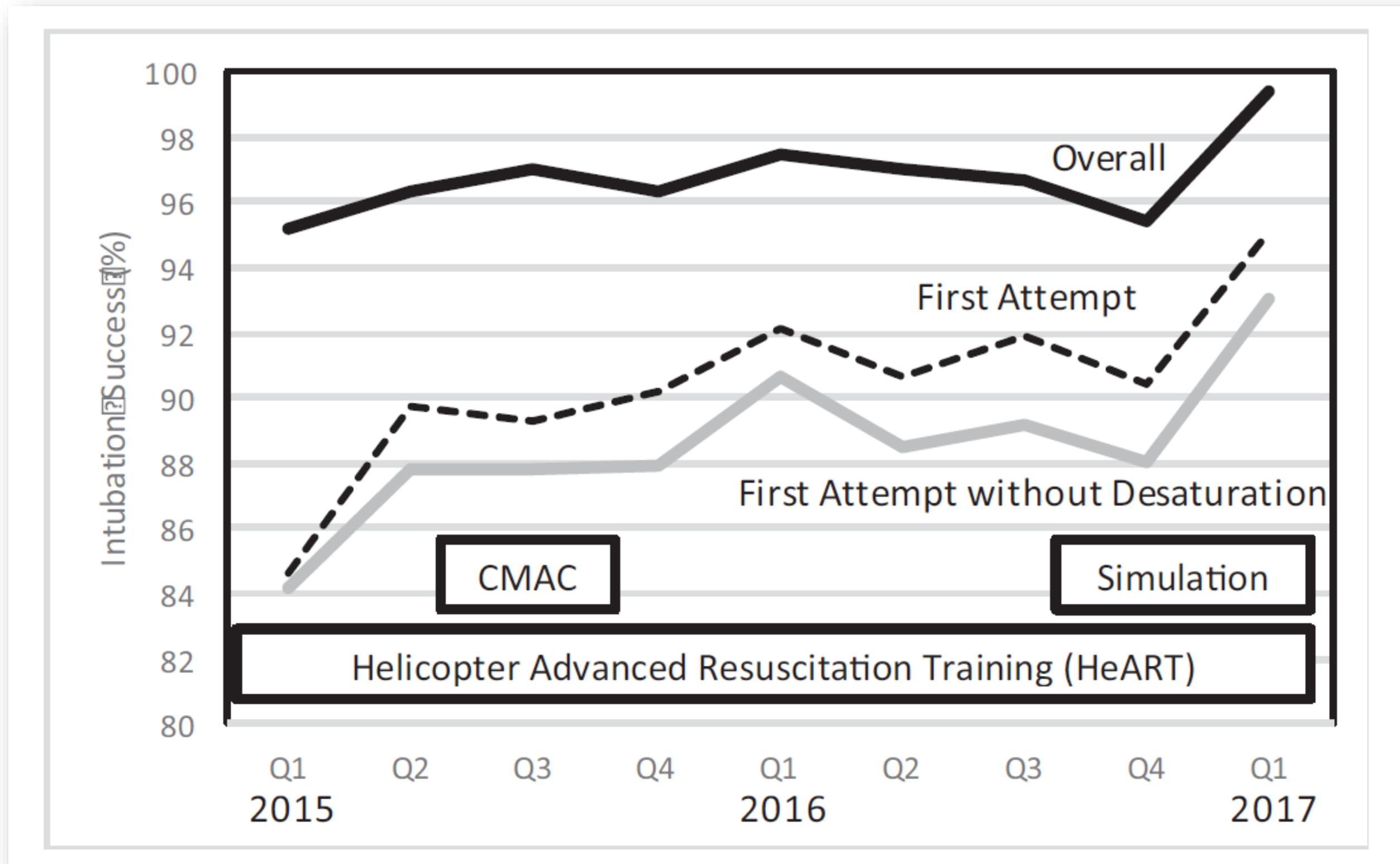
HeART – Curriculum

Analyse des données:

      RSI – Intubations
      Primary Outcome: Taux de réussite dès la 1ère tentative
      Secondary Outcome: Taux de réussite global, désaturations

Résultats

Quintessence

Des programmes de formation bien pensés peuvent améliorer efficacement les taux d'intubation

Source: https://www.drk-bildungszentrum.de/ueber-uns/simulationszentrum.html

5 EVIDENCED BASED MEDICINE

IMPLEMENTING PREHOSPITAL EVIDENCE-BASED GUIDELINES: A SYSTEMATIC LITERATURE REVIEW

Jennifer N. Fishe, MD, Remle P. Crowe, MS, NREMT, Rebecca E. Cash, MPH, NRP, Nikiah G. Nudell, MS, NRP, Christian Martin-Gill, MD, MPH, Christopher T. Richards, MD, MS, for the Prehospital Guidelines Consortium

Contexte

Directives existantes

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Méthodologie

Analyse bibliographique systématique

Les articles ont été classés selon les critères GRADE

TABLE 1. Systematic review inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
1. Discusses prehospital EBG	1. Not a prehospital guideline
2. Methods describe or compare one of the following:	2. Not an EBG
a. EBG implementation	3. Methods do not sufficiently discuss implementation[*]
b. EMS training methods in relation to guideline implementation and/or adherence	4. EBG development article/study that does not discuss implementation
c. Analysis of guideline implementation in discussion of EBG adherence/success	5. Textbook, magazine article, abstract, or conference presentation
3. Full article available in English	6. No English-language translation available

EBG = evidence-based guideline; EMS = emergency medical services.
*Insufficient detail of methods, e.g., "The guideline was implemented."

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TABLE 2.   Summary of current prehospital literature on EBG implementation

Incomplete EBG implementation associated with divergent patient outcomes
- CDC field triage guidelines
- AHA guidelines
- ACLS guidelines

Implementation times are substantial
- Delays related to EMS education
- Implementation time may comprise significant portion of guideline cycle

EMS systems' heterogeneity impacts implementation
- Urban vs. Rural
- Paid vs. Volunteer
- Different provider scopes of practice
- ALS vs. BLS

Numerous identified implementation barriers
- Coordination amongst agencies/stakeholders
- Hospital competition
- Financial/workforce constraints
- New equipment purchasing
- Wireless/cellular transmission (especially in rural areas)
- Community/cultural expectations

ACLS = *advanced care life support*; AHA = *American Heart Association*; ALS = *advanced life support*; BLS = *basic life support*; CDC = *Centers for Disease Control and Prevention*; EMS = *emergency medical services*.

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L'application dans la pratique des directives précliniques fondées sur des preuves scientifiques est difficile.

Le manque de données précliniques disponibles renforce le problème.

Take home

- Traiter les diagnostics au lieu des symptômes

- Intubation préclinique à réserver aux personnes entraînées

- L'oxygénation est plus importante que l'intubation

- La gestion des voies respiratoires exige de l'entraînement

- L'évidence a besoin d'études – rejoignez-nous! ☺