

réanimation 2022

PARIS 22-24 JUIN

Palais des Congrès de la Porte Maillot, Paris



Gestion des troubles cognitifs en réanimation

Utilisation des nouvelles technologies

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Lien d'intérêt: SyncVR - Relax & Distract app.
(plateforme XR pour les soins de santé)



Le **syndrome post soins intensifs (PICS)**
se définit comme un groupe de symptômes qui peuvent survenir chez les
patients ayant séjourné de façon prolongée en réanimation.

Le PICS peut affecter trois sphères de la vie quotidienne :

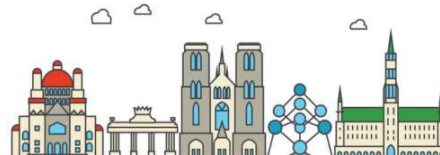
Aptitude physique



Capacité cognitive



Bien-être mental





Le delirium

« changement brutal de l'état mental, ou une modification de l'humeur, associé à une baisse des capacités de concentration, une désorganisation de la pensée, une confusion et une altération du niveau de conscience »



RESEARCH

Open Access

Association between delirium in the intensive care unit and subsequent neuropsychiatric disorders

Kyla N. Brown¹, Andrea Soo^{2,3}, Peter Faris^{1,2,4}, Scott B. Patten^{1,2,5,6}, Kirsten M. Fiest^{1,2,3,4,5,6†} and Henry T. Stelfox^{1,2,3,4†*}

n = 4033 patients
Delirium: 1792 patients (44%)
Suivi 1 an post réa

Table 2 Association between delirium during the intensive care unit and subsequent neuropsychiatric disorders

Outcome	Risk ratio (95% confidence interval) ^a	
	Crude	Adjusted ^b
Any neuropsychiatric disorder	1.36 (1.20–1.54)	1.14 (0.98–1.33)
Depressive	1.45 (1.20–1.74)	1.16 (0.92–1.45)
Anxiety	1.31 (1.08–1.60)	1.16 (0.92–1.47)
Trauma-and-stressor related	1.14 (0.79–1.63)	0.82 (0.53–1.28)
Neurocognitive	2.19 (1.57–3.09)	1.59 (1.08–2.35)

^aReference group is “never” had ICU delirium
^bAdjusted for age, sex, ICU admission reason (medical, surgical, neurological, trauma), APACHE II score, Charlson Comorbidity score, Glasgow Coma Scale, transfer delay, ≥ 24 h, invasive mechanical ventilation (yes/no), continuous renal replacement therapy (yes/no), and vasoactive medications (yes/no), ≥ 20 ICU beds, teaching hospital (yes/no), ICU length of stay (categorized as < 7 days vs. ≥ 7 days), and last SOFA score



Association stress & performance cognitive

- Le stress peut altérer la performance cognitive en augmentant l'attention portée aux pensées négatives.

RESEARCH ARTICLE

I'm going to fail! Acute cognitive performance anxiety increases threat-interference and impairs WM performance

Angelos Angelidis^{1,2*}, Ericka Solis^{1,3}, Franziska Lautenbach^{4,5}, Willem van der Does^{1,2,3}, Peter Putman^{1,2}

PLoS ONE 2019 14(2): e0210824.



Scott et al. BMC Psychiatry (2015) 15:148
DOI 10.1186/s12888-015-0497-7



STUDY PROTOCOL

Open Access



The Effects of Stress on Cognitive Aging, Physiology and Emotion (ESCAPE) Project

Spacie B. Scott¹, Jennifer E. Graham-Engeland², Christopher G. Engeland³, Joshua M. Smyth⁴, David M. Almeida⁵, Mindy J. Katz⁶, Richard B. Lipton⁷, Jacqueline A. Mogle⁸, Elizabeth Munoz⁹, Nilam Ram¹⁰ and Martin J. Skowronski^{11*}

Association stress & performance cognitive

- Le stress peut altérer la performance cognitive en augmentant l'attention portée aux pensées négatives.
- La dépression, les troubles anxieux et le stress post traumatique peuvent avoir un **impact négatif sur les fonctions exécutives préfrontales** en particulier sur la mémoire de travail, l'attention, l'inhibition de la réponse et la flexibilité cognitive.

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1939



2022



RESEARCH

Open Access



Feasibility and safety of virtual-reality-based early neurocognitive stimulation in critically ill patients

Marc Turon^{1,2,3*}, Sol Fernandez-Gonzalo^{2,4}, Mercè Jodar^{3,4,5}, Gemma Gomà^{2,6}, Jaume Montanya¹,
David Hernando⁷, Raquel Ballón⁷, Candelaria de Haro⁶, Victor Gomez-Simon⁶, Josefina Lopez-Aguilar^{1,2},
Rudys Magrans^{1,2}, Melcior Martinez-Perez^{1,6}, Joan Carles Oliva² and Lluís Blanch^{1,2,6}

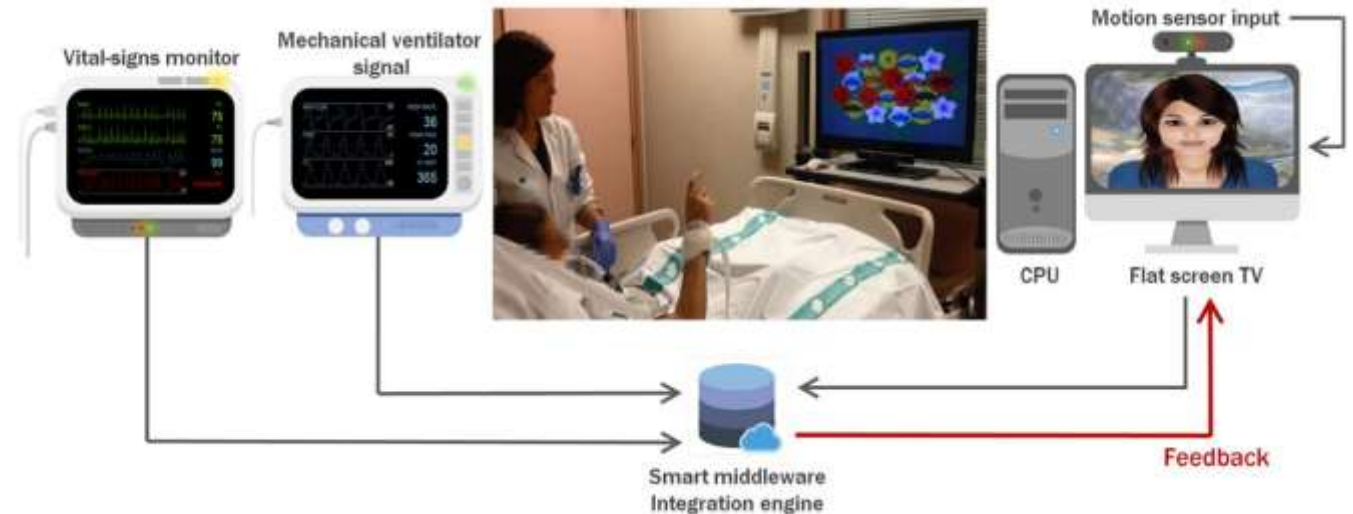


Figure S1. Schematic diagram of the Early Neurocognitive Rehabilitation in Intensive Care (ENRIC) platform (reproduced with permission [2]).

n = 20 patients

Session RV neurocognitive (20')

Stimulation de l'attention et de la mémoire de travail

PAS d'effet délétère



Article

Virtual Reality-Based Early Neurocognitive Stimulation in Critically Ill Patients: A Pilot Randomized Clinical Trial

Guillem Navarra-Ventura ^{1,2,3,*} , Gemma Gomà ^{1,3} , Candelaria de Haro ^{1,3} , Mercè Jodar ^{4,5,6} ,
Leonardo Sarlabous ^{1,3}, David Hernando ^{7,8,9} , Raquel Bailón ^{7,8,9}, Ana Ochagavía ^{1,3}, Lluís Blanch ^{1,3},
Josefina López-Aguilar ^{1,3,†} and Sol Fernández-Gonzalo ^{1,2,5,6,†} 

J. Pers. Med. 2021, 11, 1260

Our results suggest that non-immersive VR-based neurocognitive stimulation may help improve short-term working memory outcomes in survivors of critical illness. Moreover, this advantage could be maintained in the long term. An efficacy trial in a larger sample of participants is feasible and must be conducted.



Information

- Les patients ont besoin d'information après un séjour en réa.

Blake et al. *Journal of Intensive Care* 2020;88
<https://doi.org/10.1186/s40590-019-0422-0>

Journal of Intensive Care

RESEARCH

Open Access



Patients suffering from psychological impairments following critical illness are in need of information

Johan H. Blake^{1,2*}, Michiel E. van Genderen^{1,2}, Anna Schut³, Martijn Verkeide⁴, Evert-Jan Wils², Diederik Gommers¹ and Jasper van Bommel¹

Research paper

The needs of patients with post-intensive care syndrome: A prospective, observational study

Edward Heydon, MBBS MA (Cantab)^{a,*}
Bradley Wibrow, MBBS FCICM FACEM MSc (Clin Trials) DDU^{a,b}
Angela Jacques, MBIostat^c
Ravikiran Sonawane, MBBS MD DNB FCICM^d
Matthew Anstey, MBBS FACEM FCICM MPH PGDipEcho^{a,b}



ORIGINAL

Determinants of self-reported unacceptable outcome of intensive care treatment 1 year after discharge

Monika C. Kerckhoffs^{1*}, Felicia F. L. Kosasi¹, Ivo W. Soliman¹, Johannes J. M. van Delden², Olaf L. Cremer¹, Dylan W. de Lange¹, Arjen J. C. Slooter¹, Jozef Kesecioglu¹ and Diederik van Dijk¹

Information

- Les patients ont besoin d'information après un séjour en réa.
- La plupart d'entre eux veulent mieux comprendre ce qui s'est passé lors de leur séjour en réa et combler un vide, un trou dans leur vie.

Vlake et al. *Journal of Intensive Care* 2020; 88
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Plaintes spécifiques

- Faux souvenirs
- Amnésie
- Incompréhension face à la prise en charge en réa





It is recommended to invite patients who are mechanically ventilated for more than 2 days at a **post-ICU clinic** between 6 and 12 weeks after hospital discharge and screen for physical, psychological and cognitive impairments (by using validated electronic patient-reported questionnaires).

Recommendations for intensive care follow-up clinics;
report from a survey
and conference of Dutch intensive cares

M. VAN DER SCHAAF¹, F. BAKHSI-RAIEZ^{2, 3}, M. VAN DER STEEN^{4, 5}
D. A. DONGELMANS^{3, 5, 6}, N. F. DE KEIZER^{2, 3}

Minerva Anesthesiol 2015;81:135-44

La clinique post soins intensifs

Information pour vous et votre famille
Service des Soins intensifs

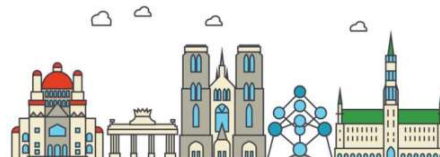


Table 1 - Objectives of post-intensive care unit outpatient clinics^(25,28,29,30)

Goals	For patients	For family members and caregivers	For the ICU team
Diagnosis	Recognition of chronic diseases prior to ICU admission	Recognition of psychological changes acquired during the patient's stay in the ICU	Identification of physical and psychological sequelae of post-ICU discharge patients
	Recognition of chronic diseases acquired during ICU admission	Recognition of psychological changes acquired after the patient's stay in the ICU	Recognition of actions taken during ICU hospitalization that may have led to physical or psychological sequelae in patients and relatives
Counseling	Promotion of medication reconciliation	Guidance on psychological conditions related to patient care	Assistance from the ICU team in the understanding of post-ICU discharge sequelae
	Guidance on the prognosis of diseases acquired during ICU admission	Elucidation of doubts regarding the patient's stay in the ICU	Promotion of team well-being (reduction of burnout) by the recognition of their work by patients and their families
	Promotion of visits to the ICU to recall positive and negative passages that occurred during ICU admission		Promotion of meetings with patients and/or family members presenting "positive feedback" of patients and their family members regarding their stay in the ICU
	Elucidation of doubts regarding ICU admission		
	Promotion of better management of financial resources related to chronic conditions of patients in the health network		
Treatment	Meeting the functional rehabilitation needs of patients		
	Meeting the psychological rehabilitation needs of patients		



ICU - intensive care unit.



Information

- Les patients ont besoin d'information après un séjour en réa.
- La plupart d'entre eux veulent mieux comprendre ce qui s'est passé lors de leur séjour en réa et combler un vide, un trou dans leur vie.
- Les patients préfèrent les informations numériques.

Vlake et al. *Journal of Intensive Care* 2020; 88
<https://doi.org/10.1186/s40390-019-0422-0>

Journal of Intensive Care

RESEARCH

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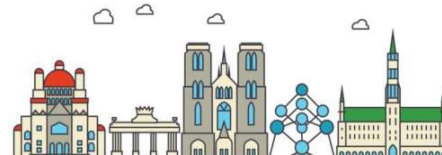
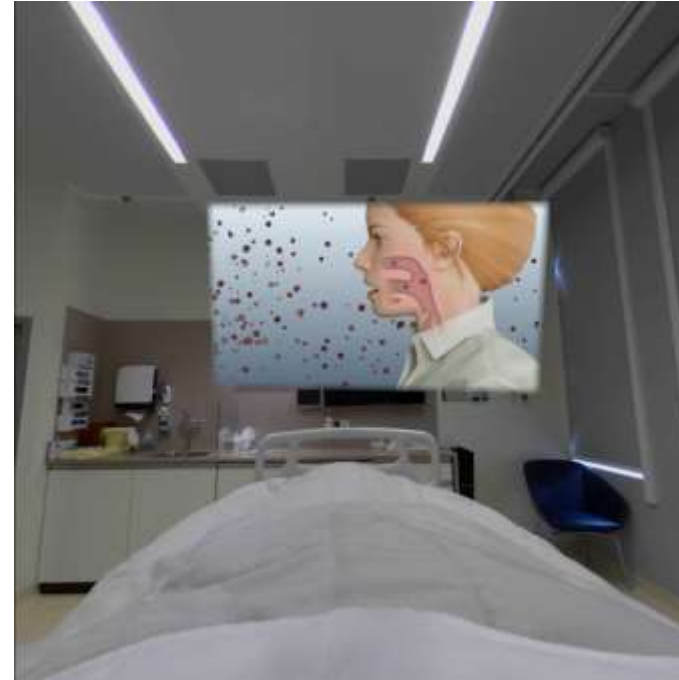


ORIGINAL

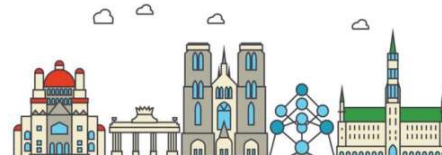
Determinants of self-reported unacceptable outcome of intensive care treatment 1 year after discharge

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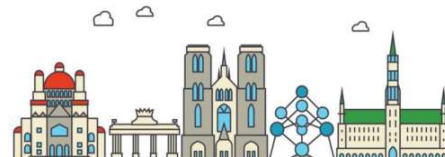
Réalité Virtuelle spécifique à la Réanimation (Réa-RV)



Réalité Virtuelle spécifique à la Réanimation (Réa-RV)



Réalité Virtuelle spécifique à la Réanimation (Réa-RV)



Virtual Reality to Improve Sequelae of the Postintensive Care Syndrome: A Multicenter, Randomized Controlled Feasibility Study

Johan H. Vlase, BSc^{1,2}

Jasper Van Bommel, MD, PhD¹

Evert-Jan Wils, MD, PhD³

Tim I. M. Korevaar, MD, PhD^{2,4}

O. Joseph Bienvenu, MD, PhD⁵

Eva Klijn, MD, PhD¹

Diederik Gommers, MD, PhD¹

Michel E. van Genderen, MD,
PhD^{1,2}

Survivants sepsis
N = 50

Controle

RV
7 jours

Intervention

Réa-RV
7 days

Questionnaires

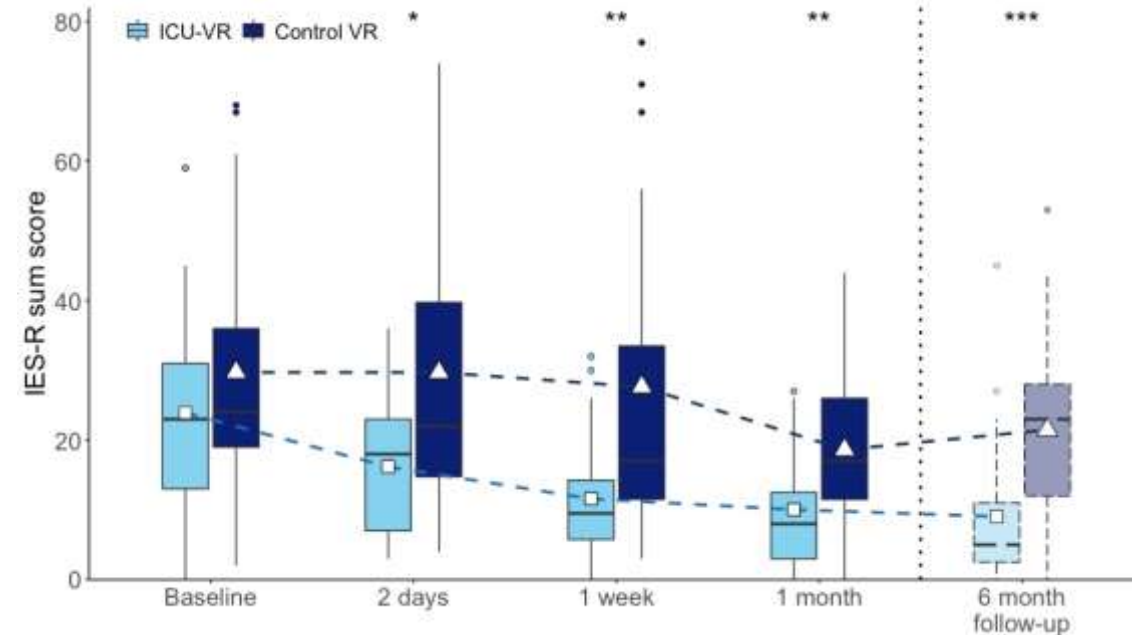
Follow-up
1 week
1 month
6 months



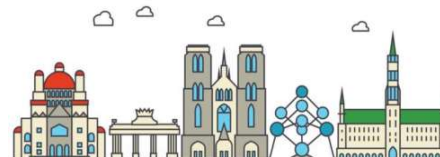
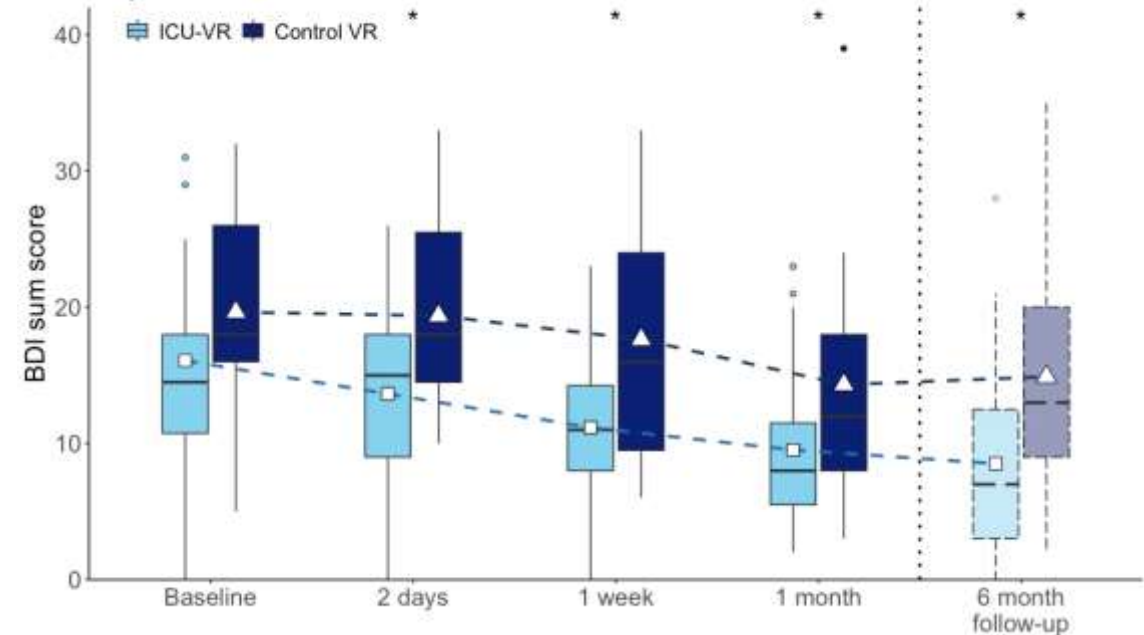
Virtual Reality to Improve Sequelae of the Postintensive Care Syndrome: A Multicenter, Randomized Controlled Feasibility Study

Critical Care Explorations 2021

Post-traumatic stress disorder



Depression



Intensive Care Unit–Specific Virtual Reality (ICU-VR) for COVID-19 ICU Survivors



Multicenter,
open-label
randomized
controlled trial



Adult patients
with **COVID-19** in
the ICU



6-month follow-up
after ICU discharge



89 patients invited to an
ICU post–COVID-19 follow-up clinic
3 months after hospital discharge



ICU-VR group (n=45)
14-min VR video
explaining COVID-19
treatment in ICU

Control group (n=44)
No ICU-VR



Pre- and postintervention questionnaires



ICU-VR improved ICU
aftercare satisfaction
(9 vs 7) and rating (9 vs 8)
compared to control
group (median scores;
scale: 1-10)



No significant difference in
psychological distress or
quality of life noted



81% patients found that
ICU-VR improved perceived
quality of ICU aftercare



All patients would
recommend ICU-VR
to other ICU survivors



Summary:

ICU-VR is a feasible, acceptable, and innovative method to improve satisfaction with and rating of ICU aftercare and adds to its perceived quality, but it did not improve psychological recovery.

JOURNAL OF MEDICAL INTERNET RESEARCH

Vlaake et al

Original Paper

Intensive Care Unit–Specific Virtual Reality for Critically Ill Patients With COVID-19: Multicenter Randomized Controlled Trial

Johannes H Vlaake^{1,2}, BSc; Jasper van Bommel¹, MD, PhD; Evert-Jan Wilts¹, MD, PhD; Joe Bienenman¹, MD, PhD; Merel E Hellmouts¹, MD, PhD; Tim IM Koevaar¹, MD, PhD; Anna FC Schuur¹, MD, PhD; Joost AM Labou¹, MD, PhD; Lois LH Schreuder¹, MD; Marien P van Bavel¹, BSc; Disderik Gommers¹, MD, PhD; Michiel E van Genderen¹, MD, PhD



The HORIZON-IC Study



The HORIZON-IC Study

Outcome primaire

- Déterminer l'efficacité de la Réa-RV sur l'**ESPT**

Outcome secondaire

- Evaluer l'effet de la Réa-RV sur la **qualité de vie** des survivants et
- Déterminer si la séance de Réa-RV est plus efficace si elle est proposée **précocement** (dans les deux semaines) ou **plus tardivement** (trois mois) **après la sortie de réa**



- ✓ 50% à 70% des survivants développent un syndrome post-réa (PICS).



Take home messages





- ✓ 50% à 70% des survivants développent un syndrome post-réa (PICS).
- ✓ Les troubles cognitifs rapportés sont particulièrement fréquents et persistent dans le temps.

Take home messages





Take home messages

- ✓ 50% à 70% des survivants développent un syndrome post-réa (PICS).
- ✓ Les troubles cognitifs rapportés sont particulièrement fréquents et persistent dans le temps.
- ✓ Un patient sur 3 présente des troubles psychologiques qui peuvent perdurer (faux souvenirs ou souvenirs difficiles de l'hospitalisation en réa).





“I can’t go back
to yesterday



because,
I was a different
person then.”

Merci pour votre attention



Take home messages

- ✓ 50% à 70% des survivants développent un syndrome post-réa (PICS)
- ✓ Les troubles cognitifs rapportés sont particulièrement fréquents et persistent dans le temps, allant de plus de 64% à la sortie de l'hôpital, de 32% à 57% à 6 mois et plus de 30% à 12 mois.
- ✓ Un patient sur 3 présente des troubles psychologiques qui peuvent persister dans le temps (souvenirs difficiles de l'hospitalisation en réa).
- ✓ La Réa-RV pourrait combler le vide de leur existence (trou réa).



