

PHILIPS

VitalMinds

Supporting delirium prevention with the patient in mind



The need for delirium prevention

How can your healthcare facility improve the recovery of intensive care patients? Delirium has become a high priority issue that affects up to 80 percent of ICU patients¹ and has dramatic short-term and long-term consequences for both patients and health systems. Reducing delirium cases in your ICU can have an impact on helping you enhance the value of your healthcare services, while keeping costs down.

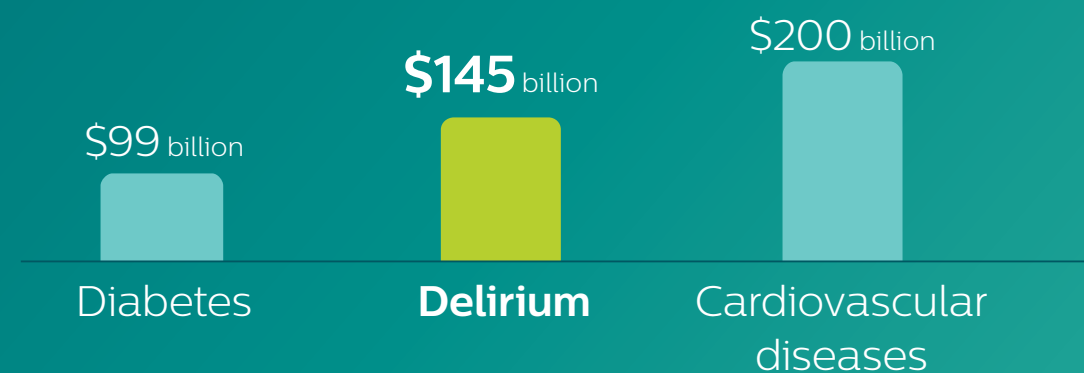
↑ 2x
Higher mortality
in intensive care units¹



↑ 5 to 10 days
Increase in hospital stay¹



Estimated annual healthcare costs in the US alone³



Many healthcare executives and medical teams struggle with how to manage ICU delirium within their own facility and patient population. Intensive care units are so busy, noisy and stressful that delirium is frequently overlooked. There are guidelines for addressing ICU delirium, but implementing them can be challenging.

Philips knows these stories because we are collaborating with healthcare professionals to break down the complexity around this issue and help them effectively reduce ICU delirium in their facilities. In these projects, we draw upon our clinical expertise, our innovation power and our learnings from consulting engagements across the health continuum to provide a tailored solution, based on your team's needs and ambitions for reducing and preventing delirium cases.

Philips VitalMinds provides an innovative approach to effectively support delirium prevention, designed with the patient in mind. It is a unique multi-component approach to ICU delirium management, which uses non-pharmacological methods based on guidelines for ICU delirium to promote the recovery and well-being of patients in critical care settings.

ICU delirium

a profound complication for patients and their families

“I just hope one day I will be normal again, and this is temporary. I was hospitalized for 9 days with respiratory problems. In the ER and ICU, I could not remember family members that were there. I also told the medical staff to call “Rick” (my husband who passed away 11 years ago).

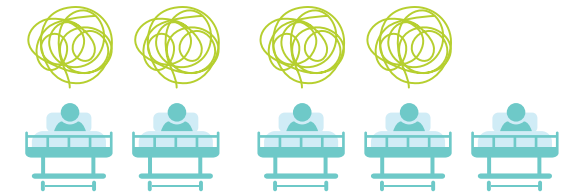
“Once hospitalized, one night, I believed that I was in Florida and people outside were trying to break in. I tried to get up and call 911, but my daughter stopped me.”⁴

This is just one story that illustrates the profound impact that ICU delirium can have on patients and their families. In terms of healthcare costs in the US, delirium has now surpassed diabetes, costing an estimated \$145 billion per year.³

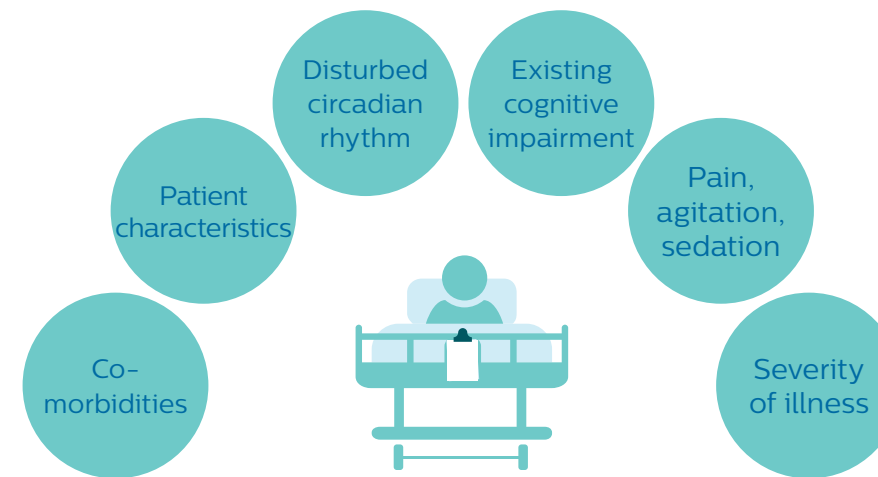


Delirium facts

Up to 80% of ICU patients are affected by delirium¹



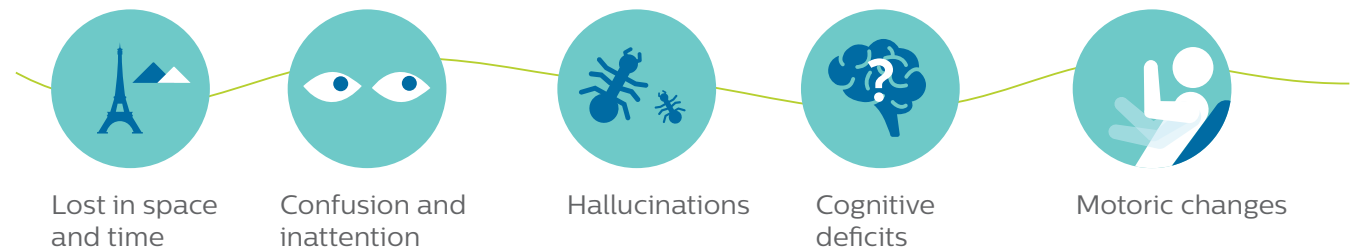
Risk factors for delirium in the ICU



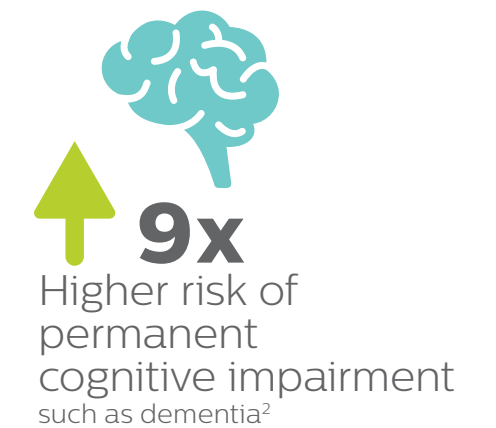
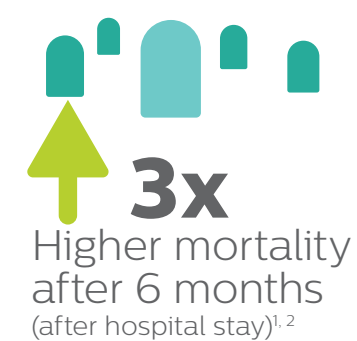
Delirium is an acute disturbance of **consciousness** and **cognition**.

It is, in fact, an **organ failure** of the brain.

Symptoms of delirium



Consequences of delirium



Disparity between knowledge and practice

Ryan Greysen, Assistant Professor of Medicine, University of California, San Francisco says that delirium suffers from a “pernicious know-do gap” a disparity between knowledge and practice. Many proven interventions, he said, do not seem sufficiently medical. “There’s no gene therapy, no new drug,” said Greysen. “I think we need to put this in the realm of hospital protocol, which conveys the message that preventing and treating delirium is just as important as giving people their meds on time.”⁵

Difficulty in identifying delirium and measuring contributing factors

It takes skill to spot the various signs and symptoms of delirium. Moreover, most ICU departments do not have the tools to measure how well their ICU environment scores on lighting conditions, noise levels and other factors that can affect delirium. So how can you know what needs to be improved?

Guidelines are difficult to implement

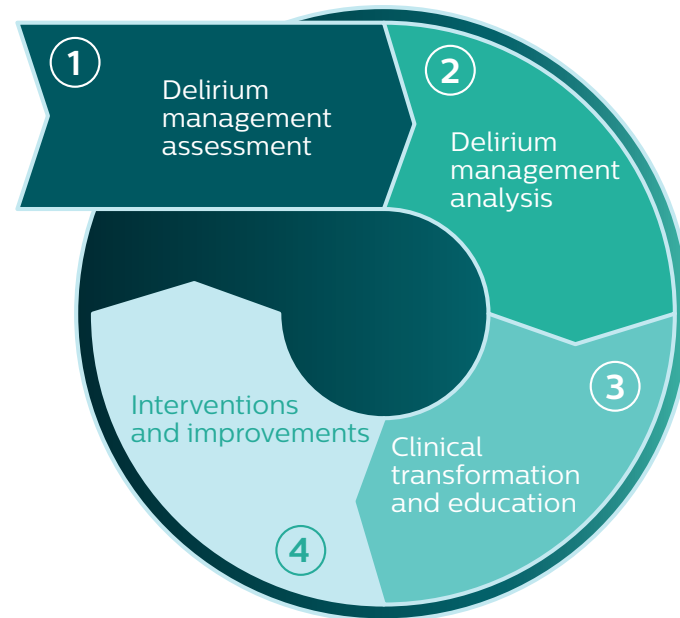
ICU guidelines, like the DAS guideline (Delirium–Analgesia–Sedation) in Germany and the PAD guideline (Pain–Agitation–Delirium) in the USA, describe the many things that ICU healthcare professionals can and should do to improve the care and recovery for ICU patients, and in particular, prevent delirium cases. However, implementing these guidelines can be a complex process. There are limited best practices and knowledge about what can be achieved by addressing the many risk factors. Applying the guidelines requires healthcare professionals to change how they work around critically ill patients, for example, by not switching on bright lights at night or making noises that disturb patients’ sleep.

Hard to treat and prevent delirium

There is currently no approved medication for delirium prevention and treatment. The DAS and PAD guidelines recommend non-pharmacological measures, such as promoting sleep, reducing noise and providing a calming environment. However, most hospitals lack the background to implement these non-pharmacological measures, since they require workflow changes and improvements to the patient environment.

The **Philips VitalMinds** approach to delirium management

The delirium management approach of VitalMinds is based on the guidelines for ICU delirium. To help hospitals make effective improvements, VitalMinds is developing a structured process for continuously assessing and improving delirium management based on multiple components. Our approach supports hospitals in four key areas:



1 Delirium management assessment:
Supports hospitals in defining their current baseline and developing a strategy for delirium management

2 Delirium management analysis:
Assesses the delirium-related factors that need to be addressed to improve delirium management based on measured data

3 Clinical transformation and education:
Consultancy and training to educate staff so they can effectively implement delirium management improvements

4 Interventions and improvements:
Non-pharmacological solutions that promote a reduction in the incidence and severity of delirium

VitalMinds is working on all four areas. Two solution components are already available: Philips VitalMinds Ambience Analysis and VitalSky.



VitalMinds provides a multi-component, non-pharmacological approach to improve delirium management

Evidence shows that a multi-component approach that includes non-pharmacological methods can lead to substantial prevention of delirium in intensive care⁶, thus resulting in reduced length of stay, improved long-term health and related cost savings.

Key benefits

VitalMinds delirium management program can help you to:

- **Reduce costs and increase value**
 - Reduce length of stay and related costs per patient^{1,3}
 - Increase throughput in the OR and ICU
 - Increase reimbursement
 - Improve your hospital's brand image
- **Improve patient outcome**
 - Reduce mortality rates^{1,2}
 - Reduce long-term cognitive impairment²
 - Reduce post intensive care syndrome²
- **Enhance patient and staff experiences**
 - Improve the experience and well-being of critically ill patients and their family
 - Support staff in effectively implementing ICU guidelines

Philips VitalMinds solution available components

Ambience Analysis



The Ambience Analysis quick scan service provides measurements of light and sound conditions in the ICU patient environment in a consistent and defined way over a period of one month. We then make recommendations based on the data to support your hospital in improving patient health and recovery by:

- Increasing awareness about the impact of light and sound for patient well-being and recovery
- Creating insights into the actual light and sound conditions of your ICU department
- Identifying and defining short and long-term improvements
- Defining the baseline for your hospital business case for the required investments

VitalSky

VitalSky is an intelligent light therapy solution for ICU patients that aims to:

- Help reduce the incidence and severity of delirium
- Support sleep and the circadian rhythm of patients
- Create a calming and pleasant environment
- Promote time orientation
- Support cognitive stimulation

In addition, VitalSky provides superb quality workplace lighting for ICU staff. Dedicated lighting settings support ICU staff in carrying out the required night care without disturbing patients' sleep.

VitalSky is available in two main versions:



VitalSky Advanced



VitalSky Basic

The way forward

It's reassuring to know that there are many steps your healthcare facility can take to improve delirium management for critically ill patients. Our VitalMinds mission is to support you on your journey.

Please consult Philips to further discuss how VitalMinds can support your hospital in improving the recovery and well-being of patients with an effective delirium management program.



References

1. Ouimet S et al, Incidence, risk factors and consequences of ICU delirium. *Intensive Care Med.* 2007;33:66 -73. DOI 10.1007/s00134-006-0399-8.
2. Ely EW et al, Delirium as a predictor of mortality in mechanically ventilated patients in the intensive care unit. *JAMA.* 2004 Apr 14;291(14):1753-62.
3. Leslie DL et al, One-Year Health Care Costs Associated with Delirium in the Elderly. *Arch Intern Med.* 2008 Jan 14;168(1):27-32. DOI 10.1001/archinternmed.2007.
4. Patient Testimonials. ICU Delirium and Cognitive Impairment Study Group. Vanderbilt University Medical Center. Copyright © 2013. Accessed June 15, 2018. <http://www.icudelirium.org/testimonials.html#>.
5. Boodman S, The Overlooked Danger of Delirium in Hospitals. *The Atlantic* June 7, 2015. <https://www.theatlantic.com/health/archive/2015/06/the-overlooked-danger-of-delirium-in-hospitals/394829/>.
6. Patel J et al, The effect of a multicomponent multidisciplinary bundle of interventions on sleep and delirium in medical and surgical intensive care patients. *Anaesthesia* 2014, 69, 540 -549. DOI 10.1111/anae.12638.