

Cryoablation of Renal Cell Carcinoma

CONSCIOUS SEDATION vs GENERAL ANAESTHESIA

**WEIGH UP
THE BENEFITS**



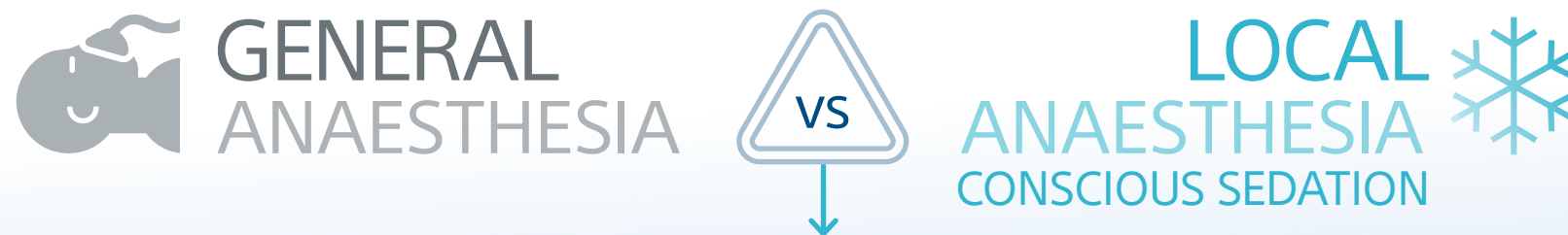
Conscious sedation allows you to treat more patients in less time

ENTER

Cryoablation of Renal Cell Carcinoma with Conscious Sedation

General anaesthesia (GA) and local anaesthesia with conscious sedation (LACS) for cryoablation of renal cell carcinoma are both viable anaesthetic approaches with **SIMILAR SAFETY AND EFFICACY PROFILES**.^{1,2}

However, LACS offers significant benefits in terms of **EFFICIENCY** and **RESOURCE ALLOCATION**, and may be performed as a day case.



 **LOWER RISK PROFILE**²



LOWER
use of
PACU³

TAKES LESS TIME⁴

1-2 hours¹
Conscious Sedation



vs.

2-3 hours^{1,4}
General Anaesthesia



Percutaneous renal cryoablation is a proven procedure, which may be performed as a day case under local anaesthesia⁵

Explore the benefits of cryoablation of renal cell carcinoma with LACS for these different stakeholders



FOR **Hospitals**
(PAYERS)



FOR **Urologists**



FOR **Patients**



PACU: Postanaesthesia care unit

The confidence to choose. The power to personalise. Change the fight against cancer.





FOR **Hospitals**
(PAYERS)

Increased
efficiencies



Reduced demand on:

- Resources
- Bed capacity



REMEMBER

CRYOABLATION
of RCC has
LOWER RATES
OF RECURRENCE
vs SURGERY¹

1

2

Cryoablation of Renal Cell Carcinoma

CONSCIOUS SEDATION

VS

GENERAL ANAESTHESIA



Significantly
REDUCED
procedure time:

68.78¹-102¹ MINS



133¹ MINS



SHORTER
hospital stay¹

1.08¹ DAYS



1.95¹ DAYS



Average €**640**/day

REDUCED
anaesthesia
medication⁶



HOSPITAL
ANALYSIS
SHOWED



Saving **\$1,816**/per patient





1

2

FOR **Hospitals**
(PAYERS)

Increased
efficiencies



Reduced demand on:

- Resources
- Bed capacity

Cryoablation of Renal Cell Carcinoma

CONSCIOUS SEDATION

VS

GENERAL ANAESTHESIA

LOWER ASSOCIATED RESOURCE CONSUMPTION³



REDUCED
time spent
in PACU
and ASU



LOWER

need for
anaesthetic
healthcare
professional



AVOIDED
sedation related
adverse events and
its associated costs⁷



FEWER
monitoring
requirements⁸

Significantly
**REDUCED
COSTS**



with use of
local anaesthesia
(in cutaneous procedures)⁷



HIGHER
patient
turnover



REDUCED
demand on
hospital staff



ASU: Ambulatory Surgery Unit
PACU: Postanaesthesia care unit

The confidence to choose. The power to personalise. Change the fight against cancer.





FOR **Urologists**

High treatment
success rate




Increase range and
number of patients
can be treated

CS: Conscious sedation
GA: General anaesthesia
LACS: Local anaesthesia with conscious sedation

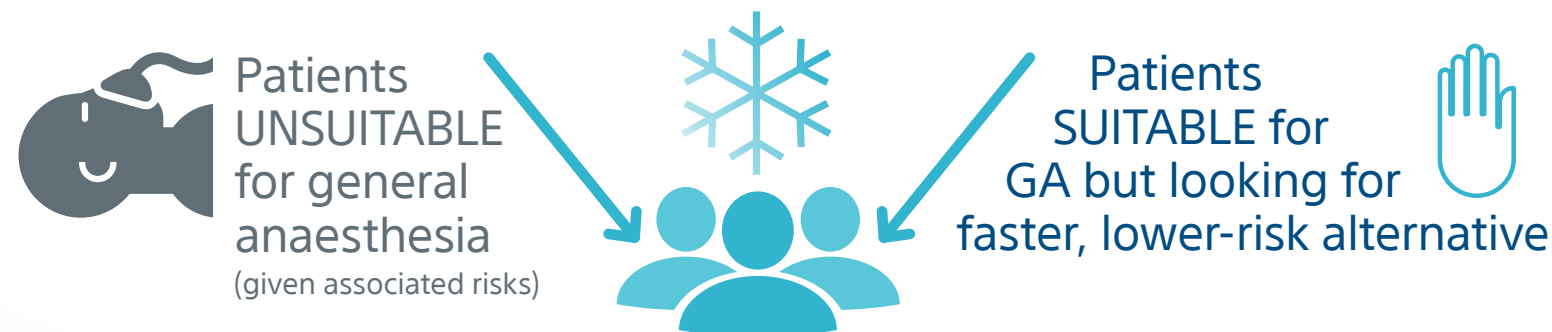
Cryoablation of Renal Cell Carcinoma

CONSCIOUS SEDATION VS GENERAL ANAESTHESIA

 **LOW**
treatment and
procedural failure rates²

 **CRYOABLATION**
under LACS is an effective
& safe procedural approach²

INCREASE
THE RANGE OF PATIENTS THAT CAN BE TREATED



**SAFER &
FASTER** 
procedures

The confidence to choose. The power to personalise. Change the fight against cancer.





FOR **Patients**

Effective procedure
with low
complication rate



Short hospital stay
with fast return to
normal activities

Cryoablation of Renal Cell Carcinoma

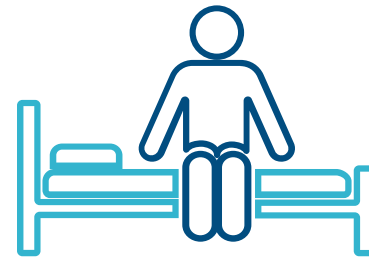
CONSCIOUS SEDATION

VS

GENERAL ANAESTHESIA

SHORTER

hospital stay¹



QUICKER

recovery from
anaesthesia¹



INCREASED

incidence of
excellent patient
satisfaction³



Vital signs
don't change
significantly⁹



DECREASED

adverse events
related to
sedation⁷

Cryoablation of RCC vs Surgery



LOWER

rates of recurrence¹



LOW

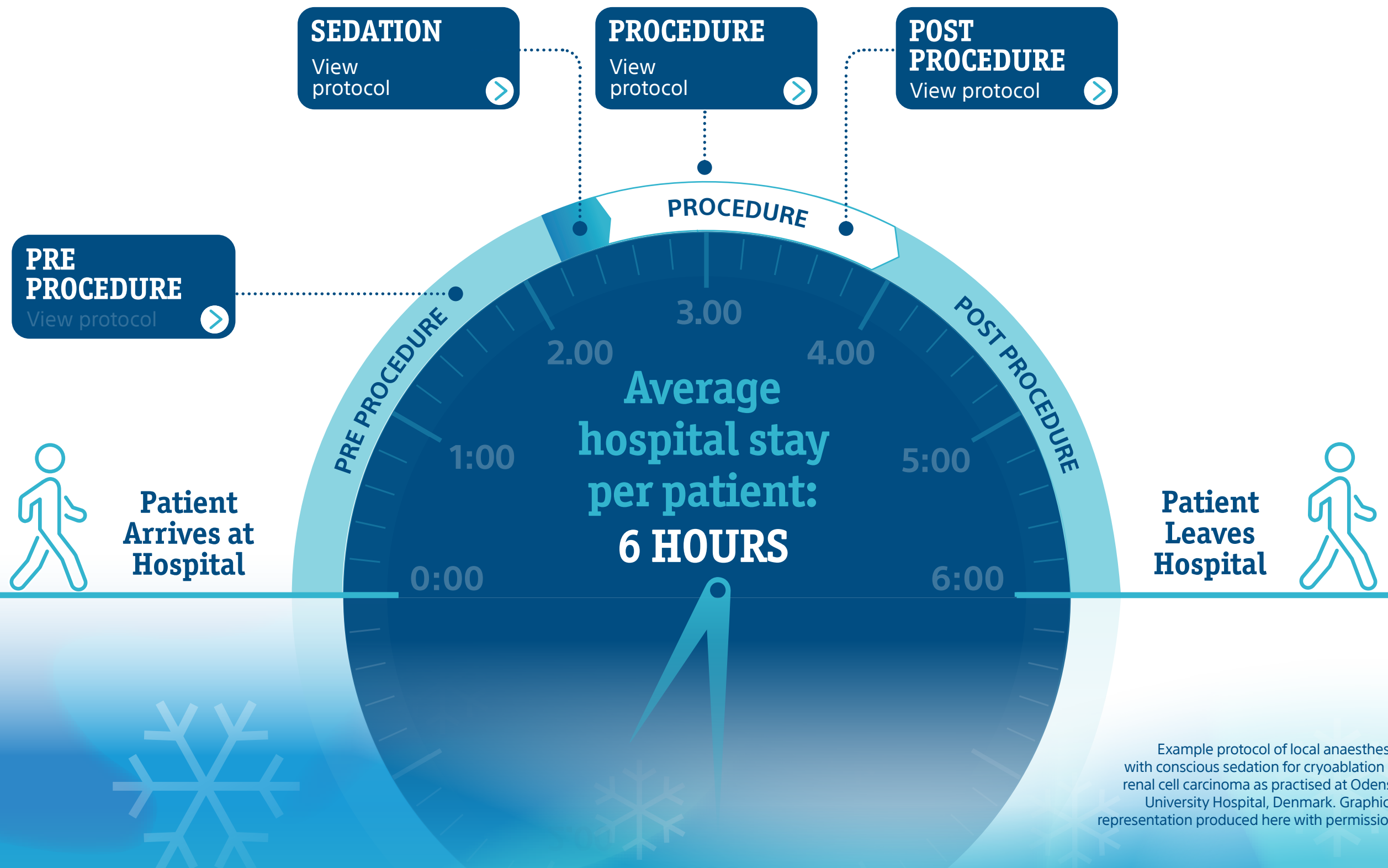
complication rate²



LOW

pain scores¹⁰

Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol



Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol



Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol

SEDATION

View protocol

PROCEDURE

View protocol

POST PROCEDURE

View protocol

PRE PROCEDURE

View protocol



Patient
Arrives at
Hospital

SEDATION: DEXMEDETOMIDINE + REMIFENTANIL

DEXMEDETOMIDINE

REMIFENTANIL

i ABOUT DEXMEDETOMIDINE (DEXDORE)

- Selective α -2 receptor agonist which is more specific than clonidine
- Sympatholytic effect, reducing noradrenaline release from the sympathetic nerve endings
- Pre-dominant effects are:
 - Sedation
 - Anxiolysis
 - Hypotension
 - Lower heart rate
- Breathing is unaffected, regardless of dose (practical advantage)
- Dexmedetomidine sedates the patient at the same level as propofol and midazolam and reduces the need for analgesics

DEXMEDETOMIDINE ADMINISTRATION

- Dexmedetomidine is always given as an infusion via a syringe pump
- Initial infusion rate 0.7 μ g/kg/hour
- Expect effect after 20 minutes, after which infusion rate can be increased to 0.8 μ g/kg/hr
- It can be diluted with sodium chloride 9mg/ml, Ringer acetate or glucose 5g/dl
- A concentration of 4 μ g/ml is used in this protocol
- 2ml dexmedetomidine concentrate (100 μ g/ml) is mixed with sodium chloride to a total volume of 50ml
- The finished infusion solution should be used as soon as possible, but may be stored for up to 24 hours at room temperature

Example protocol of local anaesthesia with conscious sedation for cryoablation of renal cell carcinoma as practised at Odense University Hospital, Denmark. Graphical representation produced here with permission.

Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol

SEDATION

View protocol

PROCEDURE

View protocol

POST PROCEDURE

View protocol

PRE PROCEDURE

View protocol



Patient
Arrives at
Hospital

SEDATION: DEXMEDETOMIDINE + REMIFENTANIL

DEXMEDETOMIDINE

REMIFENTANIL

i ABOUT REMIFENTANIL (ULTIVA)

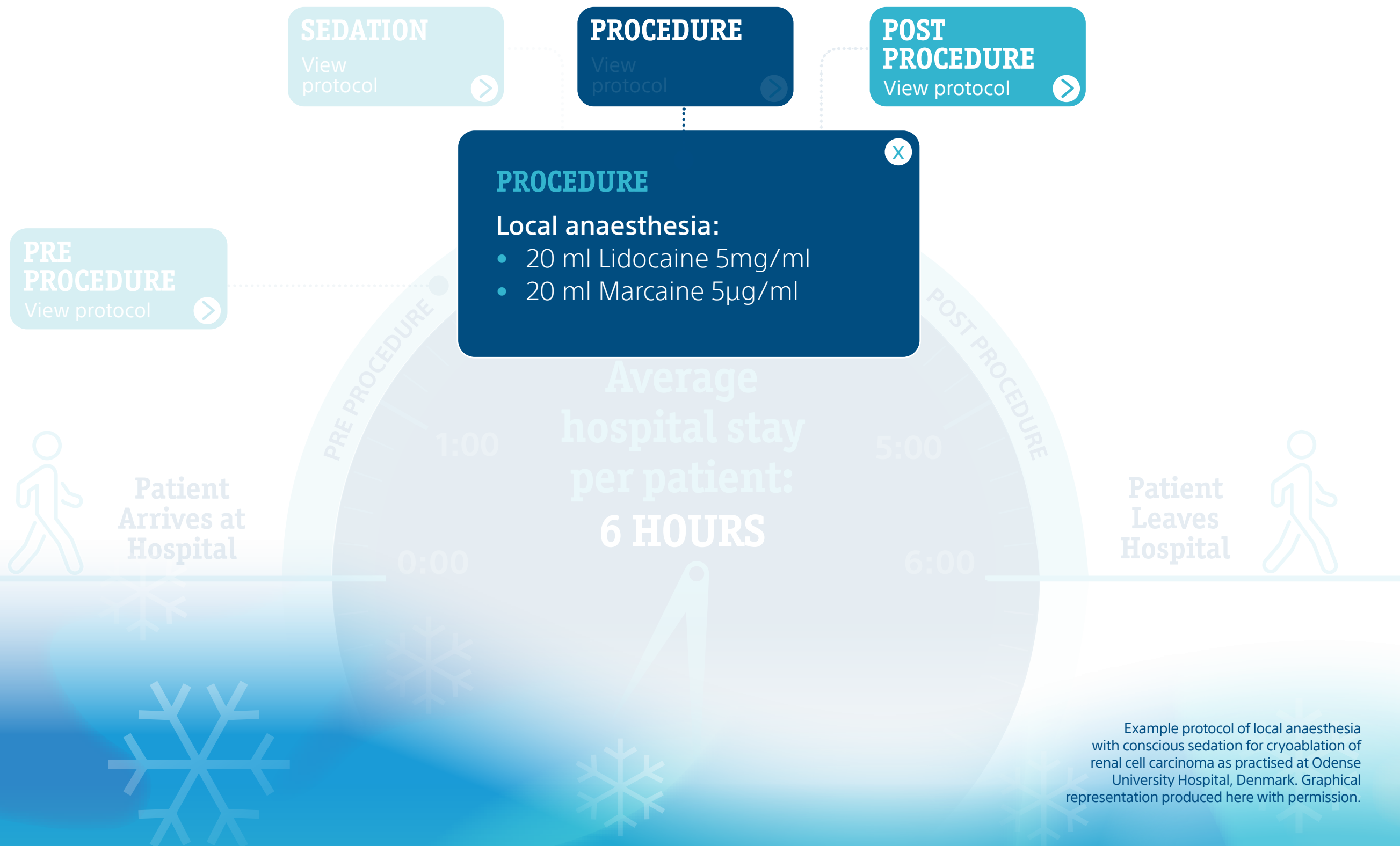
- Remifentanyl is a powerful analgesic, which is used as an anaesthetic
- It has a narrow therapeutic window and minimum effective analgesic concentration (MEAC) – this is especially pronounced when co-administering dexmedetomidine
- Both dexmedetomidine and remifentanyl are associated with bradycardia

REMIFENTANIL ADMINISTRATION

- Initiated at a rate of $3\mu\text{g/kg/hr}$
- Can be increased to $6\mu\text{g/kg/hr}$ and adjusted up or down every five minutes by $1.5\mu\text{g/kg/hr}$ depending on patient's analgesia level and respiratory rate

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Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol



Example protocol of local anaesthesia with conscious sedation for cryoablation of renal cell carcinoma as practised at Odense University Hospital, Denmark. Graphical representation produced here with permission.

Cryoablation of Renal Cell Carcinoma with Conscious Sedation: Example Protocol

SEDATION

View protocol



PROCEDURE

View protocol



POST PROCEDURE

View protocol



PRE PROCEDURE

View protocol



POST PROCEDURE

Once the procedure is complete:

- Stop the dexmedetomidine and remifentanyl infusions
- After a few minutes, the patient will be awake and able to move themselves from the CT table to the bed
- Transfer to PACU for monitoring (approx 1 hour)
- Transfer to urology department (2-3 hours)
- No need for fasting
- Leaves hospital 3-4 hours after procedure



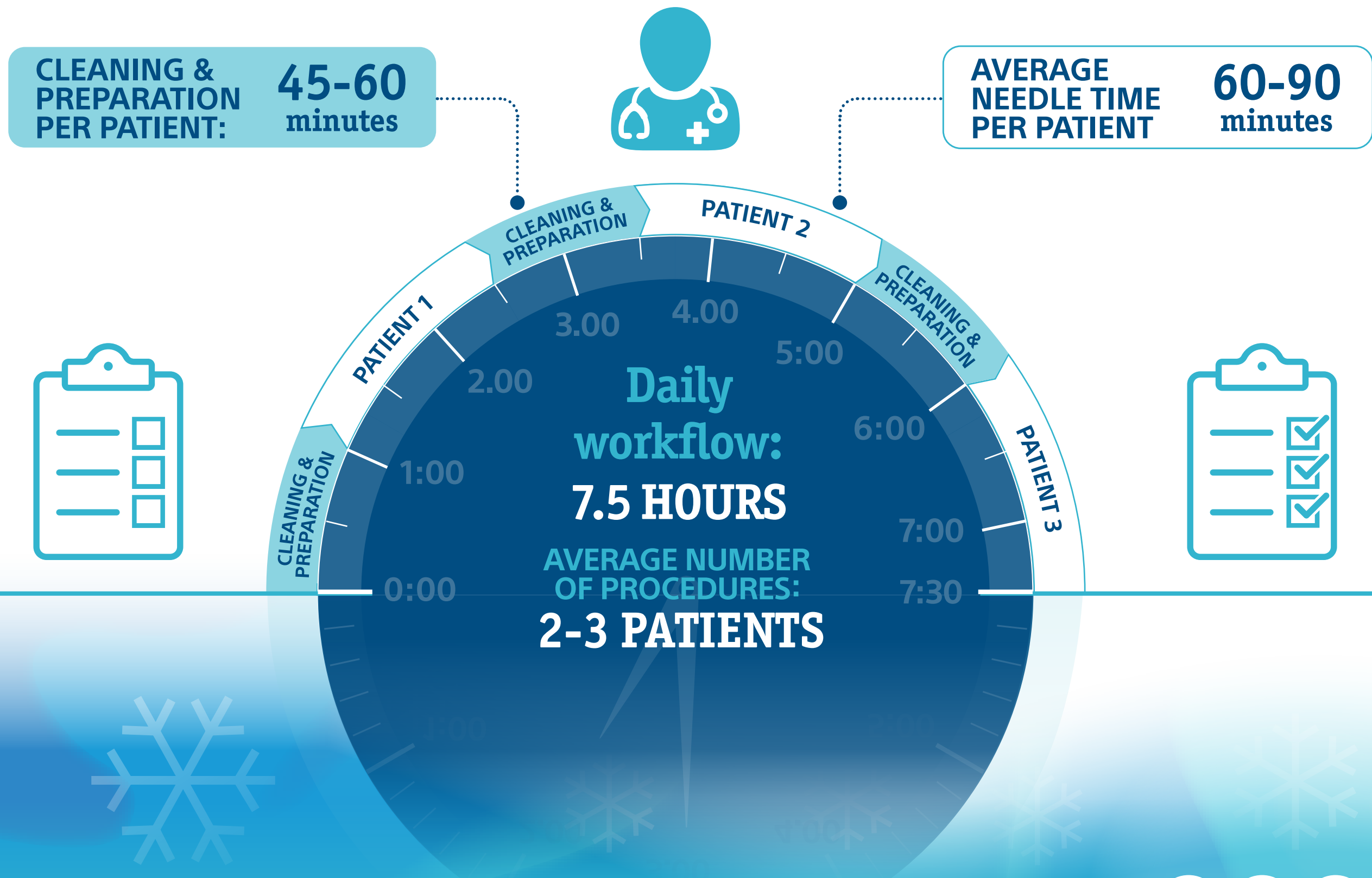
Patient
Arrives at
Hospital

Patient
Leaves
Hospital



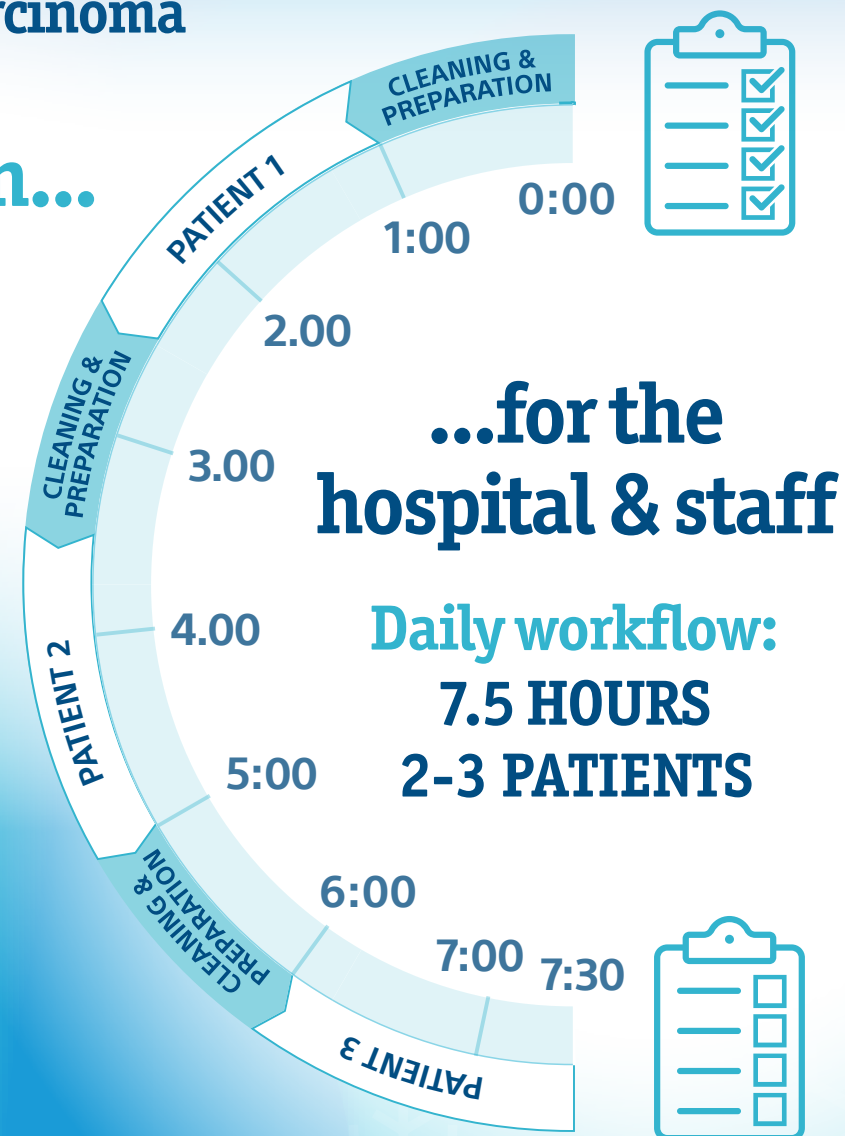
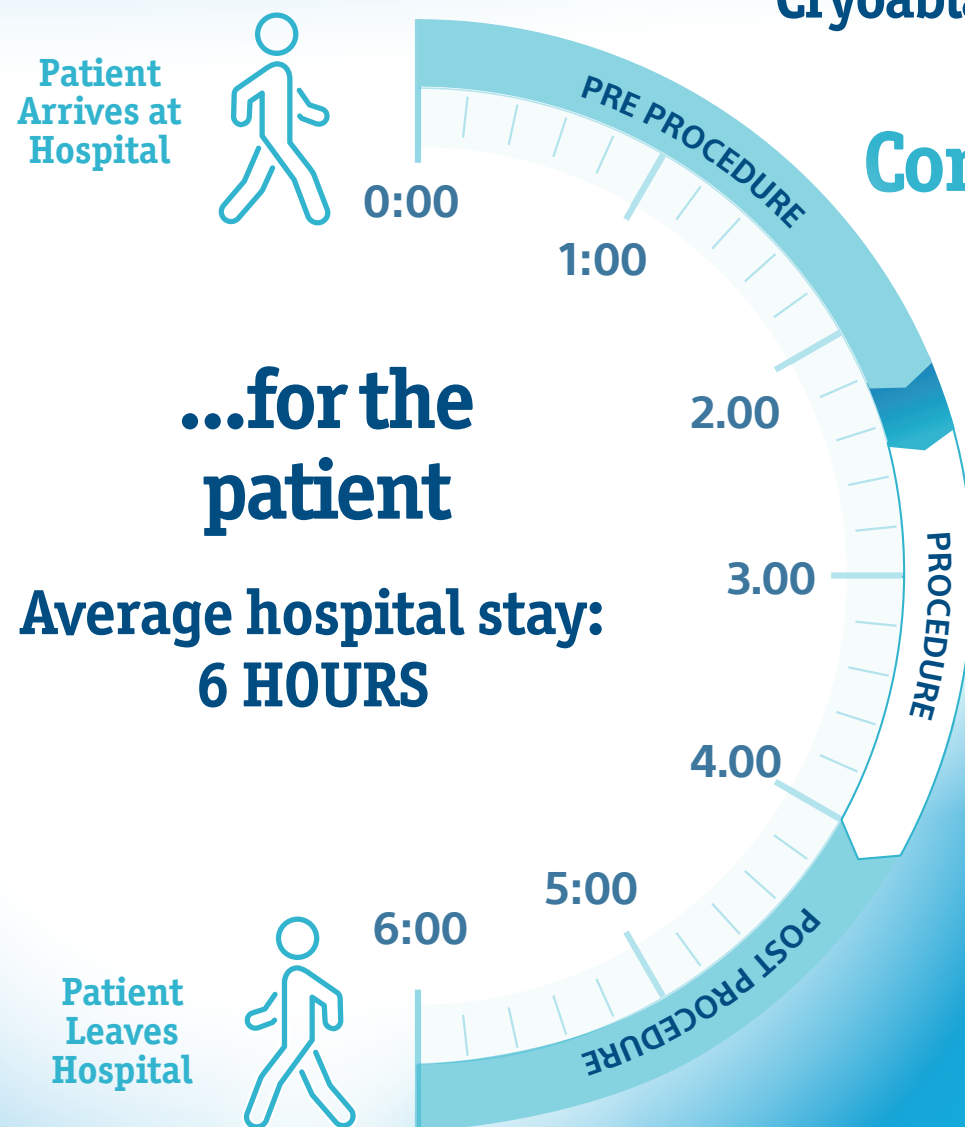
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Cryoablation of Renal Cell Carcinoma with
Conscious Sedation: Workflow Benefits



Cryoablation of Renal Cell Carcinoma

The Benefits of Conscious Sedation...



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