

Your window
to the heart.



NICaS[®] 

Non-invasive hemodynamic
& fluid management

www.imedsphere.com



Heart Failure.



6.5^M

Adults in the U.S.
are diagnosed
with heart failure

Heart failure was
a contributing
cause of

1 in 8
Deaths

Heart failure costs
the U.S. an estimated

30.7 ^{BS}
annually

Challenges.



Viewing trends in hemodynamic status throughout the patient's treatment period in the community setting or in the hospital



Determining the different causes of acute or chronic hemodynamic instability



Over or under prescribing diuretics for the HF patient

Solution.

NICaS Hemodynamic NAVIGATOR System provides each patient with a personal hemodynamic profile (information otherwise available only in high level hospital care). By utilizing this information, healthcare providers are able to better treat their patients, resulting in a substantial reduction in readmission rates, thus lowering the economic, as well as clinical, burden of HF.



Trends in a hemodynamic profile are viewed on a specially designed screen that is easy to understand



Decisions on which medication to administer are facilitated



Our clients report a 90% decrease in readmission

Hypertension .



130_M

There are 130 million hypertension patients in the U.S.

Physician office visits in 2014



157_M

High blood pressure costs the U.S. an estimated

131_{BS} annually

Challenges .



1 in 4 adults (24%) with hypertension have their condition under control



Current statistically based protocols are partially successful in controlling hypertension (54%)



Very difficult to determine the underlying cause of HTN without a complete hemodynamic profile of the patient

Solution .

NICaS enables the treating physicians to isolate the exact cause of hypertension, based on each patient's objective hemodynamic parameters. These parameters allow the physician a "deeper" understanding of the total dynamics responsible for each patient's hypertension. With NICaS, physicians can be more effective in prescribing the proper medication for hypertension.



Recent studies and customer experience show an improvement in hypertension control to above 90%.



Personalized treatment according to individual hemodynamic profiles — no more guessing which medication to prescribe

NICaS[®]

Preeclampsia .



10% 

Of all pregnancies are impacted by **hypertension**

14% 

Of all maternal deaths worldwide are due to **hypertensive disorders**

 46%

Of women with gestational hypertension will progress to preeclampsia.

Challenges .



Preeclampsia and eclampsia significantly increase the risks of maternal and perinatal adverse outcomes. These may include placental abruption, preterm birth, and low birthweight.



Preeclampsia management focuses primarily on maternal hypertension therapy. This can reduce the risk of severe hypertensive episodes and safely prolong gestation



There is no accepted standard of the management of preeclampsia

Solution .

NICaS is designed to assist physicians to determine the exact cause of hypertension for preeclampsia management.

NICaS is based on patients' objective hemodynamic parameters allowing physicians to reach a deeper understanding of the dynamics concerning each patient's hypertension and to improve preeclampsia management.

With NICaS physicians can now more effectively prescribe the right medication for the right cause of hypertension.



No more guessing what medication to administer. Personalized treatment according to individual hemodynamic profile



NICaS eliminates hypertension as a risk factor that can cause complications during pregnancy

Dialysis.



 **80%**

By 2025, 80% of end-stage kidney disease patients are expected to receive **home dialysis or kidney transplants**

88% 

Of patients receive treatment at **dialysis centers**

 **84** **BS**

Medicare's annual spending on **CKD patients**

Challenges.



Determining the patient's dry weight level: How much fluid do you need to remove during the dialysis session?



Understanding the cause of intradialytic hypotension or hypertension events



Determining what medication to prescribe in order to keep blood pressure stable during and after the treatment

Solution.

NICaS is designed to assist physicians to determine the patient's body composition and the cause of intradialytic hypertension. Furthermore, the hypotension diagnosis is based on patients' objective hemodynamic parameters. These parameters provide physicians with a deeper understanding of the total dynamics that affect each patient's individual hemodynamic status.

With NICaS, physicians can more effectively determine the proper dry weight and the dialysis session plan.



Accurate dry weight – no guessing



Easy to determine which medication to prescribe



Significant decrease in intradialytic hypotension/hypertension events

ICU/ICCU.

4,300^s

The average cost per day of a bed in the ICU

Approximate total annual U.S. ICU cost

108^{B\$}

4.1[%]
Of national health expenditures

Challenges.



Assess fluid status and fluid responsiveness



Monitor and treat hypotensive/hypertensive patients



Evaluate drug response and online drug titration

Solution.

NICaS can assist physicians in determining the patient's body composition. With NICaS, physicians can also determine the cause of hypertension or hypotension, based on each patient's objective hemodynamic parameters. These parameters provide the physician with a deeper understanding of the total dynamics that cause patients' individual hemodynamic status and fluctuations.

NICaS helps physicians to be more effective in determining the proper dry weight, fluid volume status and prescriptions. With NICaS, they can prescribe the proper medication that best addresses the specific cause of each condition.

What's more, NICaS helps reduce the length of hospital stay and patient mortality.



Personalized treatment according to individual hemodynamic profiles —stop guessing what medication to administer



View trends of the hemodynamic profile on a specially designed screen that is easy to operate and understand

Pharma Clinical Trials.



NICaS provides a real-time, continuously accurate^{1,2,3} and highly reproducible⁴ hemodynamic status including: stroke volume, cardiac output, total peripheral resistance, cardiac power index and total body water

NICaS can help you:

- Assess inclusion criteria
- Obtain real-time dose titration information
- Monitor cardiac safety in both cardiovascular and non-cardiovascular trials
- Evaluate drug efficacy and safety
- Support single or multi site clinical trials
- Document desired and adverse effects of candidate compounds
- Reduce total trial time by facilitating patient recruitment
- Decrease time-to-market of successful compounds

NICaS unique technology:

- Allows easy application with only two sensors
- Secures the data transfer to the core lab
- Accurately assesses the smallest hemodynamic changes

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2. Cotter G, Schachner A, Sasson L, Dekel H, Moshkovitz Y. Impedance cardiography revisited. *Physiol Meas*. 2006;27(9):817-827. doi:10.1088/0967-3334/27/9/005
3. Cotter G, Moshkovitz Y, Kaluski E, et al. Accurate, noninvasive continuous monitoring of cardiac output by whole-body electrical bioimpedance. *Chest*. 2004;125(4):1431-1440. doi:10.1378/chest.125.4.1431
4. Tita C, Gilbert EM, Van Bakel AB, et al. A Phase 2a dose-escalation study of the safety, tolerability, pharmacokinetics and haemodynamic effects of BMS-986231 in hospitalized patients with heart failure with reduced ejection fraction. *Eur J Heart Fail*. 2017;19(10):1321-1332. doi:10.1002/ejhf.897



Non-invasive hemodynamic
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NICaS Sensors Connect to patients' wrist
and contralateral ankle



NICaS System Medical Tablet Configuration

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Hemodynamic NAVIGATOR™

Treat your Cardiovascular patients
as per their specific hemodynamic profiles.
Don't guess your patient's volume, peripheral
resistance and perfusion.

NICaS Hemodynamic NAVIGATOR System provides each
patient with a personal hemodynamic profile-information
otherwise available only in high level hospital care.

