

Modern pressure sensor technology
for efficient patient care

Comfortable. Safe. Cost-effective.

Advances in good nursing care: modern technology for more efficient care

Mechanical and electronic assistance systems play an increasingly important role within the health sector - without these, all-round care of patients would be extremely limited.

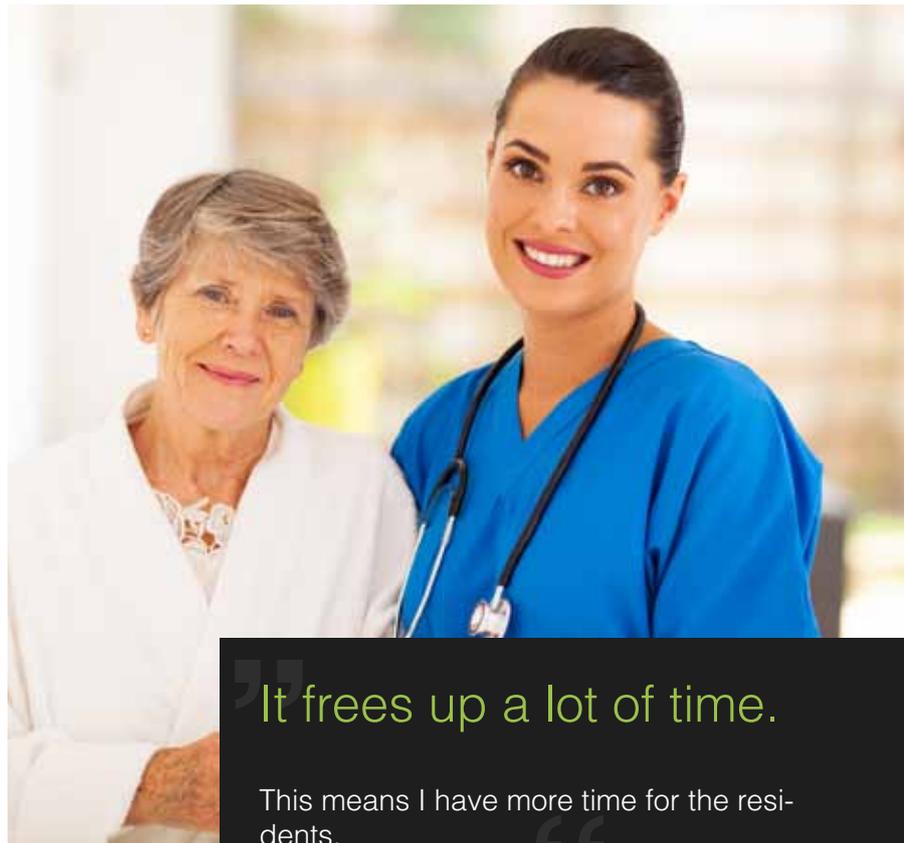
The care sector in particular benefits from high-tech solutions in two ways:

- They help to improve the patient's quality of life.
- They reduce the staff workload.

Affordable care - now and in the future

Technical systems which support patient monitoring, patient data exchange or occupancy control provide quick assistance in an emergency and increase the efficiency of nursing staff.

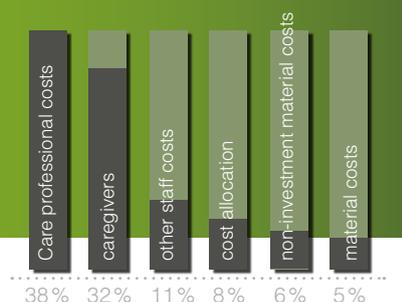
As „manpower“ is both the most valuable and also the most expensive resource within the care sector, these systems hold the key to a needs-based, affordable care.



“It frees up a lot of time. This means I have more time for the residents.”

Staff cost factor

Recent figures show that staff costs account for approximately 80% of total costs in the care sector. This is divided between nurses and management, care services and cleaning staff.





The IQmat – “embedded” intelligence

People with dementia need to be monitored for their own safety - this is both time consuming and costly. Electronic monitoring helps to save money and improves safety.

The problem: Personal monitoring is very labour- and cost-intensive. Although numerous technical monitoring aids, such as fall mats, are already in use, practice shows that these aids are unreliable because patients can bypass them.

In addition, fall mats are heavy and unwieldy and taking them out and putting them away represents a not inconsiderable physical burden for nursing staff.

Electronic monitoring using sensor technology

The solution: electronic monitoring using sensor technology.

The IQmat, a mattress developed by IQfy and Lück specifically for patients with dementia, contains an integrated pressure sensor that registers changes in the weight load.

If a patient leaves their bed, this is immediately detected by the sensor technology.

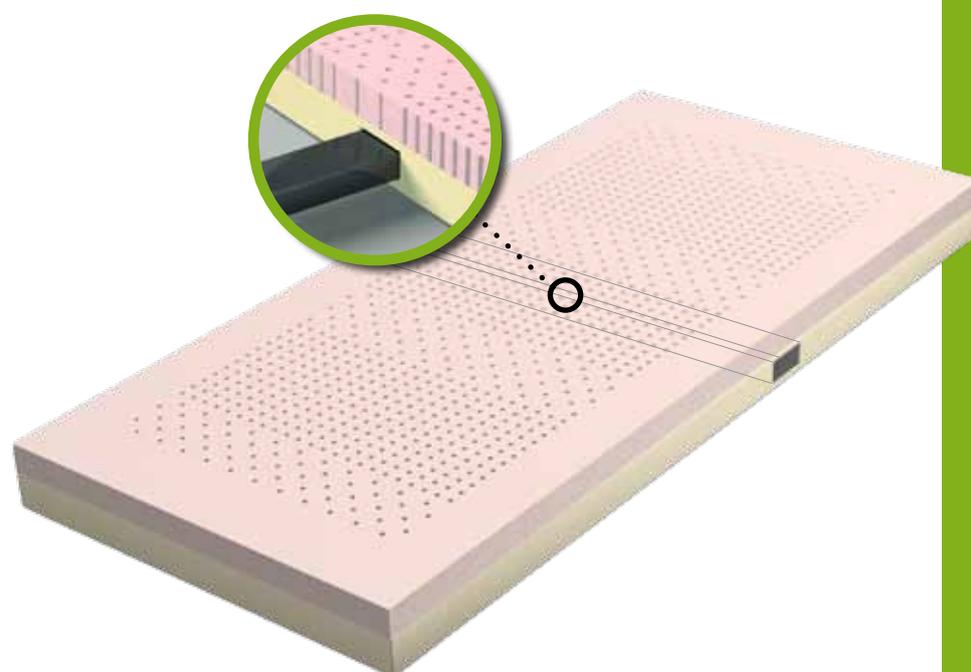
Depending on requirements, electronic signal transmission can be used to trigger various functions.

One mattress for all purposes - thanks to the retrofittable core technology

The IQmat consists of two components: the mattress and the integrated sensor technology. The mattress is a high quality RHOMBO-MEDICAL® product - it is also available without the sensor technology and retrofitting can be carried out at any time.

This means conversion to IQmats does not necessarily require a significant initial investment.

When the patient gets out of bed, it not only alerts the nurse call system but also the telephone service.



7-ZONE FOAM CORE

Due to its optimum pressure distribution (pressure ulcer prevention), the IQmat is also suitable for the treatment of grade 1 pressure ulcers.

WATERPROOF, BREATHABLE MATERIAL

Sweat is absorbed by the mattress and later released into the air as vapour. Other body fluids are not able to penetrate the mattress.

WATERPROOF ZIP

A waterproof cover means no bodily fluids (other than sweat) can penetrate the mattress through the zip fastener.

MAINTENANCE-FREE PRESSURE SENSOR. NO BATTERIES REQUIRED

The sensor is neither visible nor palpable. The system is powered by kinetic energy with electricity - thus eliminating the need to replace batteries or for maintenance.

Signal transmission with no installation costs: radio-control!

In contrast to conventional building automation systems, the IQmat system uses radio signal transmission.

Benefits:

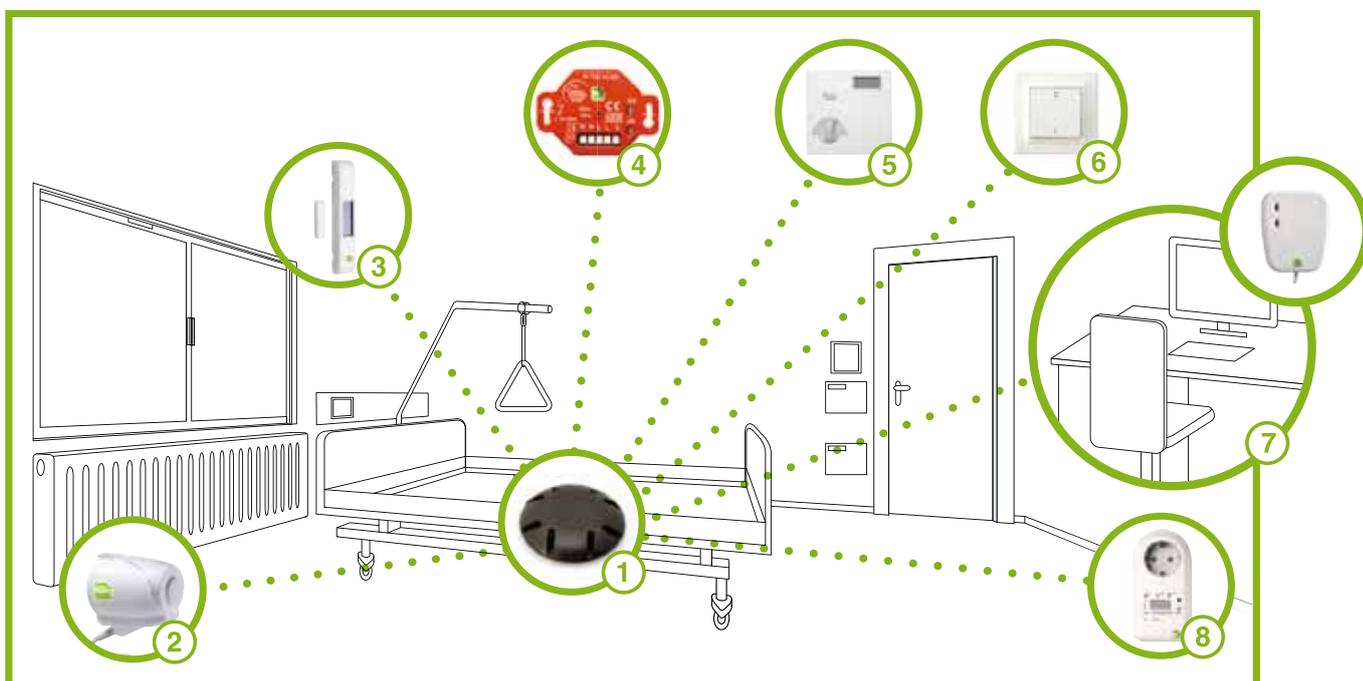
There is no need to lay cables in order to use IQmat and no expensive installation work is required.

Any concerns about electro smog are completely unfounded: a standard light switch issues a 100 times more radiation than the IQmat wireless sensor.

From the mattress to the light, heating and the nurses' station

The busy signal of the IQmat can be fed into the home automation system and used in a variety of ways – for example, automatic light control, which is then used when the patient leaves the bed. And of course, the signal can be connected directly to the nurses' emergency call system.

The light can be controlled according to the time of day by increasing the blue component in the light in the morning and the red component in the evening.



1. PRESSURE SENSOR

Detects weight changes and registers a bed exit.

2. HEAT CONTROL

Regulates heating in an occupied bed.

3. WINDOW TRANSMITTER WITH MAGNETIC CONTACT

Regulates heating when the windows are open.

4. SIGNAL RECEIVER

Receives sensor signal and controls lighting, for example.

5. LIVING ROOM TEMPERATURE SENSOR

Used for individual control of the living room temperature.

6. LIGHT SWITCH

Is actuated by the signal controller and switches the light on or off during manual operation.

7. CENTRAL OVERVIEW ON PC

Provides a complete space/occupancy overview and links the signal to the emergency call system.

8. WIRELESS ADAPTER

Enables control of other devices, dependent on the sensor signal.



At a glance:

The innovative **IQmat** offers lots of benefits:



Reliable patient monitoring

A patient lying on a radio-networked **IQmat** cannot get out of bed unnoticed; the monitoring using sensor technology is totally reliable.

In addition, the **IQmat** signal transmission enables convenient remote monitoring and obviates the need for monitoring rounds.



Reduces care staff workload

The care staff does no longer have to take heavy fall mats out and put them away.



Up to 30% energy savings

Because energy consumption in patient rooms - light, power points etc. - can be controlled according to bed occupancy using sensor technology. This means significant savings on energy costs over the year.



Low installation costs

No cable installation is necessary - which means installing the **IQmat** does not involve dirt and building noise. Conversion to **IQmats** can be done easily and without interrupting day-to-day operations. Connection to existing emergency call systems (e.g. from Winkel, Ackermann, Zettler) is generally possible.



Maintenance-free operation

As no batteries are used, the **IQmat** sensor system is virtually Maintenance-free

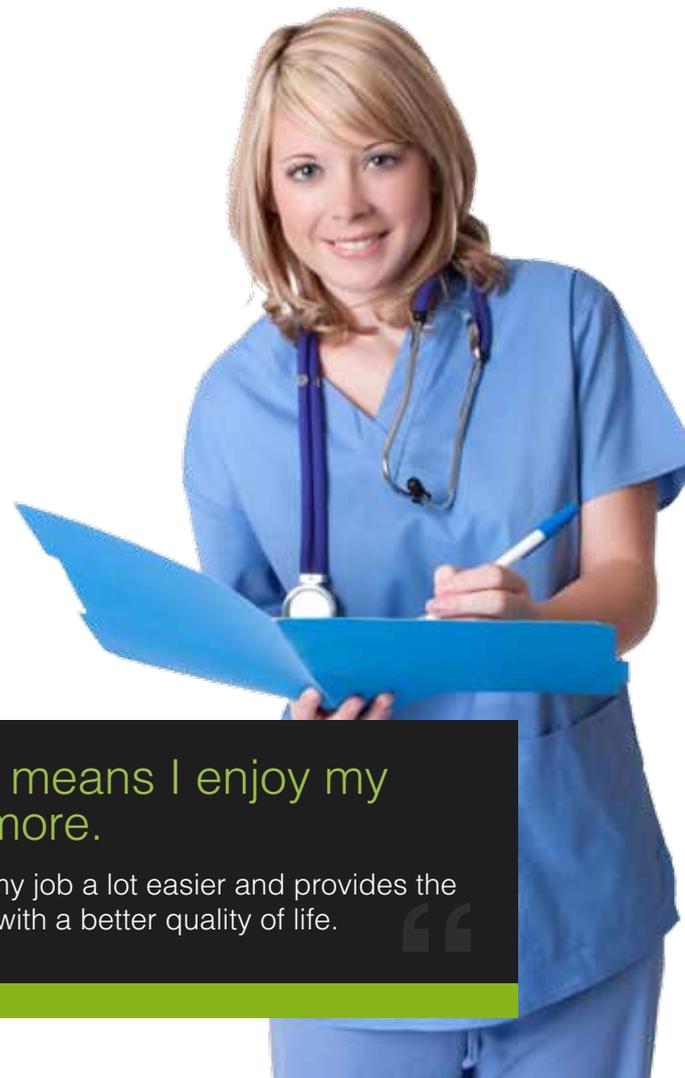


Certified safety

In 2011, **IQmat** technology was tested for its effect on health by Ecolog Institut.

The result: it meets the most stringent requirements and was awarded the „Blue Angel“ environmental friendliness seal.

Due to the low installation height of only 14 cm, the **IQmat** also complies with the dimensional specifications of the BfArM (Federal Institute for Drugs and Medical Devices) for beds with side rails.



IQmat means I enjoy my work more.

It makes my job a lot easier and provides the residents with a better quality of life.

Autonomy for patients - alongside safety

When caring for dependent people, it's always a question of balancing security and independent living.

The **IQmat** not only offers care home residents freedom but can significantly reduce the risk of injuries caused by falls!

Everyone, whether they need care or not, has a right to autonomy. When caring for the elderly, preserving a patient's autonomy presents a major challenge.

A court ruling is required to install the system

In 2005 in a landmark ruling, the German Federal Court decided that the dignity and independence of the residents of nursing homes was of particular importance (BGH Az. III ZR 399/04).

In a further judgement of 2012 the Federal Court added that - care home residents who have dementia should not

have their freedom of movement restricted with side rails or belts without a court order - not even if the authorized caregiver agrees to this measure.

New technologies such as automatic bed occupancy detection using sensor technology assist nursing staff significantly with patient supervision.

Thus far their introduction represents an important step towards care without measures that restrict freedom.

The **IQmat** provides residents with a better quality of life, comfort and freedom - for a life that's as autonomous as it can be.





The IQfy GmbH – intelligent designs fully developed ideas

This young company has been successfully developing electronic solutions for the presence-dependent control of electronic components.

IQfy GmbH was founded in 2011 and emerged out of the „Funkstuhltechnik“ company founded by Dipl.-Ing. Klaus Kleine.

The reason behind the foundation of the company was an extensive pool of ideas, based on 20 years' experience in the development and programming of electronic control units for the building services industry.

German Innovation Award

Among many other awards, **IQfy GmbH** was selected one of the 100 most innovative companies in North Rhine Westphalia at “Germany at its best” and in 2012 received the German Innovation Award from the Federal Ministry of Economics and Technology.



THE BLUE ANGEL – A SPECIAL AWARD

The Blue Angel identifies products and services which are environmentally friendly. The seal allows consumers to easily identify environmentally-friendly alternatives and integrate them into their daily lives. The Blue Angel is intended to promote more conscious buying behaviour on the one hand and on the other, industrial restructuring leading to sustainable product development.

Innovation  made in Germany

 Bundesministerium für Wirtschaft und Technologie

GERMANY AT ITS BEST  NORDRHEIN-WESTFALEN



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(2012, distinguished as a World Market Leader by the **Southern Westphalia IHK** Chamber of Commerce)



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