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Comparing differences in Healthcare in Europe

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Outline

Comparison of Nursing Procedures in the Czech Republic, Iceland, and Portugal

This comparative overview highlights how nursing care is delivered in the Czech Republic, Iceland, and Portugal, based on observations and reports from international student exchanges. It covers key nursing procedures – patient hygiene, bed-making, injection techniques, catheterization, documentation – as well as nurse competencies in each country. Each country is addressed in turn, followed by a summary of major similarities and differences.

Czech Republic

In the Czech Republic, nursing care is often divided between registered nurses (RNs) (všeobecné sestry) and practical nurses (praktické sestry, similar to licensed practical nurses). Practical nurses are trained at secondary medical schools and provide basic nursing care under the supervision of an RN or physician, according to national regulation (Vyhláška č. 55/2011 Sb.) Their main responsibilities include fundamental bedside care tasks: monitoring vital signs, performing hygiene care for patients, preventing bedsores, assisting with rehabilitation exercises, administering basic treatments (e.g. heat/cold therapy), distributing meals, and assisting RNs or doctors during diagnostic and therapeutic procedures. RNs (typically with a bachelor's degree) carry out more complex interventions (IV injections, advanced wound care, etc.) and supervise the practical nurses.

Patient Hygiene in the Czech Republic

Bedside hygiene is considered a fundamental and highly important part of nursing care in the Czech Republic. It carries not only medical significance but also psychological and ethical value. The Czech standard emphasizes thoroughness, infection prevention, dignity of the patient, and a systematic approach that is taught during nursing education and strictly followed in healthcare practice.

Before the procedure, the nurse ensures that the patient is informed about the planned hygiene and consents to it. The nurse explains each step and ensures privacy by drawing a curtain or screen. All necessary supplies are prepared in advance: at least two basins with warm water (one for the upper body, one for the lower), soap or cleansing emulsion, disposable towels, washcloths, clean bed linens, disposable gloves, a hygiene blanket or sheet to cover the patient, clean nightwear, oral care tools, and a laundry bag for used linen.

The nurse wears disposable gloves throughout the entire procedure. At the beginning, any removable bedding – such as pillows or blankets – is taken off the bed to prevent contamination. The patient is covered with a blanket or sheet to maintain privacy. Washing proceeds in a strict top-to-bottom order: starting with the face (washed without soap), then the neck, chest, abdomen, arms, and hands. Each area is washed separately, gently, using clean water and washcloths. After each section is washed, it is immediately dried with a clean towel and covered again.

Then the water is changed — fresh water is prepared in a second basin for washing the lower half of the body. Washing continues with the groin area, thighs, knees, lower legs, and feet. The patient is then gently turned onto their side so that the nurse can wash the back and buttocks. Genital hygiene is performed before washing the buttocks and anus, and it is always followed by rinsing the genitals with clean water. Perineal and genital hygiene is always carried out with the utmost respect and preservation of the patient's privacy.

A key aspect of Czech practice is the consistent change of water and washcloths between different parts of the body to prevent cross-contamination. It is common to use color-coded basins and cloths for different body zones.

Special attention is also paid to bed linen hygiene during the entire process. As soon as a part of the bed becomes exposed (for example, when the patient is turned to the side), the nurse immediately rolls away the used linen and replaces it with clean sheets. This ensures that the freshly washed patient never lies back on soiled or damp bedding.

Once the washing is completed, the patient is dried and dressed in clean nightwear. Oral hygiene is also a standard part of morning care — the patient either brushes their teeth on their own or, if unable, the nurse performs oral care using swabs, mouthwash, or a suction catheter if necessary. The care may also include brushing or combing hair, shaving, and applying moisturizing cream or barrier paste to sensitive skin areas.

The entire procedure is performed with a focus on patient comfort — ensuring the patient is warm, not unnecessarily exposed, understands each step, and feels safe. Hygiene care is also an opportunity for brief conversation, during which the nurse may assess the patient's mental well-being, satisfaction, and any additional needs. While the task is time-consuming, nurses in Czech practice dedicate sufficient time to it, as it is seen as a cornerstone of high-quality and dignified care.

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Bed making in the Czech Republic

In the Czech Republic, hospital bed-making is considered a standard and essential part of nursing care, with a direct impact on patient comfort, pressure ulcer prevention, and overall hygiene. The Czech approach is highly systematic and precise and differs in several aspects from methods used in other countries.

When preparing a clean bed without a patient, a clean fitted or flat sheet is placed on the mattress. If a flat sheet is used, Czech nurses typically do not just tuck the ends under the mattress — instead, they tie each corner into a firm knot, known locally as a "hospital knot." Each corner of the sheet is folded into a point and securely tied to keep the sheet tightly stretched across the bed. This method ensures the sheet stays in place even when the patient moves and results in a smooth, wrinkle-free surface. It is

considered fast, effective, and contributes to skin protection and patient comfort. This technique is relatively unique to Czech practice, as many other countries prefer folding methods like "hospital corners" instead of knotting.

When making an occupied bed (with a patient in it), Czech nurses follow a carefully organized process. First, the pillow and duvet are removed and placed aside. The nurse informs the patient of each step and encourages cooperation if possible. Standing on one side of the bed, the nurse loosens the soiled bottom sheet and rolls it tightly toward the patient, as close to the body as possible. The patient is then asked — or gently helped — to roll toward the nurse onto the already cleared side of the bed. The nurse then places a clean sheet on the newly exposed half of the mattress, tucking it in or tying it in knots at the corners. The patient is then rolled back onto the clean side, and the remaining soiled linen is removed. The second half of the clean sheet is then spread out and secured.

With this technique, the patient is never left lying directly on the bare mattress and is always positioned either on the clean or old sheet. This method is not only hygienic but also safe and comfortable for the patient.

As for patient covers, Czech hospitals typically use a duvet with a washable cotton cover. The cover is replaced regularly, and the end is folded in a way that keeps the duvet from slipping out. If necessary, an extra light blanket is added — for example, in colder weather or for frail patients. In contrast, hospitals in some countries may only use a light bedspread or even omit the top sheet or duvet cover altogether, which in Czech facilities would be seen as uncomfortable and unhygienic.

Once the bed has been fully made, the clean pillow (with a fresh pillowcase if needed) and the covered duvet are returned. The entire bed is arranged neatly, without wrinkles or folds, to ensure that the patient lies comfortably and is not irritated by uneven bedding.

After bed-making is completed, the nurse usually lowers the bed to a safe height and raises the side rails if needed. This is especially important for patients with limited mobility or those at risk of falling or confusion.

This thorough, methodical, and practical bed-making technique is an integral part of Czech nursing practice and contributes to maintaining a high standard of hygiene and overall quality of care.

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Injection Techniques in the Czech Republic

In the Czech Republic, administering injections is a common but strictly regulated nursing procedure, closely tied to the healthcare worker's level of qualification. Both in education and in clinical practice, strong emphasis is placed on following correct procedures, preventing complications, and taking full responsibility when administering medications.

1. Authorization According to Qualification

Who is allowed to give injections in Czechia depends on the nurse's credentials:

- General Nurse (Registered Nurse, RN) – is fully authorized to independently administer all common types of injections, including subcutaneous (SC), intramuscular (IM), intravenous (IV), as well as prepare and administer infusions. The RN may also monitor the patient's condition and response to the medication.
- Practical Nurse – may administer SC and basic IM injections, but only under delegation from and direct supervision of a registered nurse. Practical nurses are not authorized to give IV injections or start infusions.
- Physician – performs more specialized injections, such as cytostatic therapy, biological treatment, or other complex medications requiring advanced clinical judgment.

These roles are defined by Czech law and professional guidelines and are comparable to countries like Iceland or Germany, where advanced procedures are restricted to university-trained personnel.

2. Pre-Injection Protocol

Before giving any injection, the nurse must carefully check the "Five Rights" of medication administration:

- Right patient – verify identity by name, birth date, or wristband.
- Right medication – as per medical records and prescription.
- Right dose – check the concentration and calculate the correct amount.
- Right route – SC, IM, IV – according to the doctor's order.
- Right time – administer according to the treatment schedule.

The nurse then disinfects hands and prepares all equipment on a clean surface: syringe, appropriately sized and length needle, skin disinfectant, sterile swab, gloves, possibly a bandage or plaster, and a sharps container. Gloves are always worn during the procedure to protect both the patient and the nurse.

3. Injection Techniques

Subcutaneous (SC) Injections

These are typically given into fatty tissue areas such as the front of the thigh, abdomen (at least 5 cm from the navel), or the back of the upper arm. The needle is inserted at a 45° or 90° angle**,** depending on the size of the skin fold and the needle's length. The site is disinfected and allowed to dry. A skin fold is gently lifted, and the medication is injected slowly. After withdrawal, the site is pressed gently with a

sterile swab but not massaged**,** especially when administering anticoagulants like Fraxiparine or Clexane to prevent bruising.

Intramuscular (IM) Injections

They are usually administered into the gluteal muscle (gluteus medius), deltoid muscle, or thigh muscle. The needle is inserted at a 90° angle to the skin. Aspiration (pulling back the plunger to check for blood return) used to be a standard procedure but is often omitted according to current guidelines. The injection site is then pressed and may be covered with a plaster. A light massage is sometimes performed, especially with oil-based preparations, to aid absorption.

.Intravenous (IV) Injections and Infusions

These are reserved exclusively for RNs or physicians. They include starting a peripheral IV line, administering infusions or IV push medications, or taking blood samples. These procedures require sterile technique, precision, and constant patient monitoring. For certain high-risk medications (e.g., chemotherapy), only physicians are allowed to administer them.

4. Post-Injection Care

After administration:

- The needle and syringe are disposed of immediately into a sharps container.
- The nurse documents the procedure – including medication name, dose, time, and site.
- The patient is observed for any adverse reactions (e.g., allergic response, swelling, pain).
- The nurse ensures the patient is comfortable and may provide instructions for further care (e.g., rotating injection sites for insulin users).

5. Summary

The technical execution of injections in the Czech Republic is fully in line with international and European standards – including skin disinfection, proper needle angle, careful administration, and monitoring. The main difference lies in who is authorized to perform which type of injection. In Czechia, qualification and legal responsibility define which healthcare professional may administer specific injections. These strict protocols ensure patient safety, high standards of practice, and responsible handling of medications.

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Urinary Catheterization in the Czech Republic

In Czech healthcare, urinary catheterization is considered a specialized and high-responsibility procedure that must be performed under strict aseptic conditions by qualified medical personnel. This intervention plays a crucial role not only in monitoring urine output but also in managing urinary retention, pre- and post-operative care, immobility, or certain diagnostic procedures.

1. Competence and Responsibility

In the Czech Republic, urinary catheterization may only be performed by:

- Registered General Nurses (RNs) – are authorized to insert urinary catheters in female patients independently, provided they have received proper training and have sufficient experience. In some healthcare facilities, specially trained nurses may also catheterize male patients according to internal protocols.
- Physicians – usually perform catheterization in male patients, particularly in cases involving urological complications (e.g., enlarged prostate, urethral strictures, etc.).
- Practical Nurses (Nursing Assistants) – are not authorized to insert urinary catheters. Their role is supportive – they may assist by preparing equipment, positioning the patient, or monitoring the patient's comfort during the procedure, but they do not carry out the insertion.

In some long-term care settings, experienced RNs may be delegated to perform male catheterizations based on internal training and regulations, but only if they are clinically competent and have proven expertise in urological care.

2. Preparation for the Procedure

Before beginning the procedure, the nurse:

- Informs the patient about the reason for catheterization, explains the steps involved, and obtains verbal consent.
- Ensures privacy by closing the door, drawing curtains, or using a screen.
- Prepares a complete sterile catheterization set, which includes: sterile gloves, a sterile field, antiseptic solution, sterile swabs, lubricant, a sterile urinary catheter (usually Foley type), a urine collection bag, and a syringe with sterile water for inflating the balloon.

Additional items may include absorbent underpads, a kidney dish or container for urine (for intermittent catheterization), a sterile forceps, and a disposable apron.

3. Catheterization Procedure

Female Patients

- The patient is placed in a gynecological position (lying on her back with knees bent and legs apart).
- The nurse dons sterile gloves, prepares a sterile field, and cleans the external genitalia with an antiseptic solution – usually povidone-iodine.
- The labia minora are gently parted, and the urethral opening is cleaned in a top-to-bottom direction.
- The lubricated catheter is gently inserted into the urethra until urine begins to flow.
- If a Foley catheter is used, the balloon is inflated with sterile water (usually 10 mL).
- The catheter is connected to a urine drainage bag, which is always placed below the level of the bladder to prevent backflow.

Male Patients

• The patient lies on his back with legs extended. Using sterile gloves, the penis is held at a 90° angle.
• The urethral opening is carefully disinfected around the entire glans.
• In male patients, lubricant is applied into the urinary tract before insertion (i.e., a pre-lubricated catheter alone is not sufficient).
• A well-lubricated catheter is gently inserted into the urethra. If resistance is felt, force must never be applied. Once urine begins to flow, the insertion is completed.
• The balloon is inflated, and the catheter is connected to a urine drainage bag.

In both male and female procedures, urine flow is checked, and the nurse observes the color, clarity, and amount of urine. All details are documented, including the type and size of the catheter, balloon volume, patient tolerance, and time of insertion.

4. Aseptic Technique

Czech nursing practice strictly follows aseptic principles. Typically, one pair of sterile gloves is used for the entire procedure – from cleaning the urethral area to inserting the catheter. A sterile field is maintained throughout the procedure, and all instruments are handled in a sterile manner.

It is worth noting that in some countries (e.g., Portugal), nurses use two separate pairs of gloves – one for cleaning and a second sterile pair for catheter insertion – to further reduce the risk of infection. In Czechia, it is common practice to use one sterile pair; in male patients, a sterile forceps is used for insertion instead of a second pair of gloves.5. Post-Procedure Care

After catheter insertion, the nurse:

- Checks that the drainage bag is below bladder level to prevent reflux.
- Monitors urine output, including color, clarity, and volume.
- Educates the patient on maintaining catheter hygiene, ensuring there is no tension on the tube, and signs of possible infection.
- In cases of long-term catheterization, the nurse records the catheter change interval (typically every week).

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Summary

Urinary catheterization in the Czech Republic is a highly professional procedure restricted to qualified RNs and physicians. The entire process is carried out with emphasis on asepsis, gentle technique, infection prevention, and accurate documentation. International comparisons show that Czech practice is standardized, safe, and comparable to systems in countries like Iceland or Portugal, with differences mostly in role division and technical details such as glove use. Practical nurses support the process but do not perform the insertion, ensuring that catheterization remains a task for fully competent medical personnel.

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Nursing Documentation and Nurse Competencies in the Czech Republic

In the Czech healthcare system, nursing documentation is an essential tool for monitoring and managing patient care. It is not just a formality—it carries legal, communicative, safety, and professional importance. Documentation allows for continuous assessment of a patient's condition, supports decision-making, and serves as evidence in case of complaints or legal issues.

What nurses document:

- Vital signs – body temperature, blood pressure, pulse, oxygen saturation, respiratory rate,
- Medication administration – including time, dose, route, and patient response,
- Performed procedures – hygiene care, repositioning, catheterization, blood draws, dressing changes, intake/output measurement,
- Patient assessment and observations – changes in consciousness, pain, treatment reactions, mood,
- Patient responses to nursing interventions, cooperation with staff or family,
- Pain and wound monitoring, and nutritional screening for at-risk patients.

Documentation is done throughout the shift or in the form of a summary nursing note at the end of the shift. Every entry must be dated, signed, and clearly attributed.

Paper vs. electronic documentation

The Czech Republic is undergoing a gradual transition to electronic health records (EHRs). While some hospitals use fully electronic systems (e.g., eNIS, Medea), others still rely on paper records or a hybrid system, especially in inpatient wards or long-term care settings.

Benefits of electronic documentation include:

- faster access to patient data,
- easier information sharing between departments,
- system alerts for errors (e.g., medication duplication, allergies),
- improved legibility.

However, full digitalization requires investment, staff training, and a shift in organizational culture

The Role of Practical Nurses in Documentation

Practical nurses (formerly known as assistant nurses) play a limited but important role in documentation. They record procedures within their scope:

- measuring vital signs,
- basic hygiene care,
- monitoring fluid intake/output,
- assisting with feeding,
- noting observations – such as pain, restlessness, sleep issues, or vomiting.

Their entries are often reviewed or countersigned by a registered nurse, who uses them for overall care planning.

Competencies and Education of Practical and Registered Nurse

Practical Nurse (LPN-equivalent):

- Education: completed four-year secondary nursing school, typically finishing around age 19, with a final exam (maturita).
- Typical duties include:
    - assistance with hygiene and dressing,
    - changing bed linens,
    - measuring vital signs,
    - repositioning and pressure ulcer prevention,
    - helping with meals and mobility,
    - participating in rehabilitation exercises,
    - observing and reporting changes in patient condition.

Practical nurses are allowed to administer subcutaneous (s.c.) and intramuscular (i.m.) injections, but they are not permitted to perform intravenous therapy or catheterization independently—these procedures are reserved for registered nurses and physicians.Registered

Nurse (RN):

- Education: usually holds a bachelor's degree in nursing or a diploma from a higher professional school.
- Scope: independently performs a full range of nursing activities.
- Typical duties include:
    - administration of all types of medication (oral, SC, IM, IV),
    - infusion therapy and patient monitoring,
    - catheter insertion,
    - developing individualized care plans,
    - leading documentation, shift management, and patient/family education,
    - collaborating with doctors, social workers, and other team members.

RNs may delegate tasks to practical nurses, monitor their completion, and retain accountability. Critical procedures and care coordination are solely the RN's responsibility.

Exchange Programs and International Comparisons

Czech nursing students participating in Erasmus+ exchanges often observe differences in education and working conditions abroad:

- In Iceland, nurses are better compensated and have more time per patient, enabling more individualized care.
- The structure of clinical practice and education differs—in Iceland and Portugal, there is no equivalent of the Czech "higher vocational school," and students choose to become either practical nurses or directly pursue a bachelor's RN degree.
- Some countries have fully digital documentation systems (e.g., Portugal), while in Czechia, digitalization is still in progress.

These experiences reveal that although nurse training and competencies vary, all systems aim to produce well-prepared professionals capable of delivering high-quality care within their defined scope.

Conclusion

In the Czech Republic, nursing documentation and clearly defined nurse competencies form the foundation of safe and professional care. Cooperation between registered and practical nurses is based on trust, respect, and shared responsibility. The nursing team operates as a cohesive unit, where each member contributes their skills to ensure comprehensive, high-quality care for every patient.

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Iceland

Iceland's nursing system relies on two main levels of nursing staff: licensed practical nurses (LPNs) and registered nurses (RNs). LPNs in Iceland are trained via a 3-year secondary school program plus practical training (total ~206 credits), after which they are licensed to provide nursing care, somewhat analogous to Czech practical nurses. RNs hold a bachelor's degree in nursing (a 4-year university education) and have a broader scope of practice. Icelandic law and healthcare policy give nurses a wide-ranging authority in patient care. Nurses in Iceland (particularly RNs) are empowered to carry out many tasks independently or in collaboration with physicians – including comprehensive nursing care, medication administration, performing certain diagnostic tests, and providing health education to patients. This means an RN in Iceland can initiate a lot of nursing interventions on their own responsibility. LPNs and RNs work closely together on hospital units, forming the backbone of patient care teams. In hospitals, LPNs typically assist and collaborate with RNs, while in nursing homes or home care, LPNs may work more independently (often taking charge of routine care tasks). Both groups are respected and needed in the workforce – in fact, Iceland has a shortage of LPNs in eldercare settings.

Patient Hygiene in Iceland

Patient hygiene in bed, as practiced in Iceland, is regarded as an essential and complex nursing activity that goes beyond simple body cleansing. The goal is to ensure the patient's dignity, comfort, and safety throughout the process. The overall approach in Iceland is very similar to that in the Czech Republic. Nurses begin by thoroughly preparing all necessary supplies in advance – clean linens, a basin with warm water, soap, washcloths or disposable wipes, towels, gloves, and any additional materials – so that they can focus entirely on the patient without interruptions once hygiene begins.

During Erasmus+ exchange programs, Czech students observed several procedural differences. In Iceland, for example, it is standard for nurses or students to wear personal protective equipment during hygiene care, such as disposable aprons or even full-body cloth gowns. These gowns had long sleeves, tied at the back, and extended to the ankles, providing complete coverage of the uniform and reducing the risk of contamination. In contrast, Czech nurses typically use a simple disposable plastic apron for routine hygiene care, and full-body gowns are used only in specific cases, such as when there is a risk of infection.

Another noticeable difference was in glove usage. Icelandic nurses use gloves based on individual risk assessment. Gloves are worn when cleaning intimate areas or when exposure to bodily fluids is expected, but they might be omitted for "clean" body areas. One Icelandic nurse explained that they use "as many gloves as needed" and discard them between clean and dirty tasks. In Czech practice, by contrast, it is standard to wear gloves throughout the entire bed bath regardless of the body area being cleaned.

There are also small differences in the hygiene technique itself. Czech students noted that in Iceland, nurses often begin hygiene care by washing the patient's hands and arms, whereas Czech nurses usually start with the face and upper body. However, Icelandic nurses stated that the method of washing the patient is fundamentally the same—ensuring a top-down, thorough cleaning while maintaining the patient's dignity. In both countries, the patient remains mostly covered during the procedure, with only the area being washed exposed.

A more significant difference was noted in the use of water and wash basins. In many Czech hospitals, it is routine to use separate basins or at least fresh water for different body areas—typically one basin (often light-colored) for the upper, cleaner parts of the body and another (often dark-colored) for the lower, more contaminated parts. Water is usually changed at least once during the process. In Iceland, however, students observed that a single basin with one batch of water was used for the entire bath. While Icelandic hospitals may change water if it becomes visibly dirty or cold, in the observed demonstration, one basin was sufficient. This was surprising for Czech observers, who are trained to refresh water at least once.

Another difference involved the timing of linen changes. In Iceland, the patient remained on the same bedsheets until the hygiene care was fully completed, after which the linens were changed in a separate step. In the Czech Republic, nurses typically change the bottom sheet as part of the hygiene process itself—immediately after washing the patient's back, while the patient is on their side—so that the freshly bathed patient is transferred directly onto clean linen. The Icelandic method separates bathing and linen change into two stages, while the Czech method integrates them. Both approaches have their advantages and often depend on staff availability and routine.

One of the strong points of Icelandic care is the consistent use of positioning and movement aids. After completing the bath, when repositioning or turning the patient, Icelandic nurses frequently use extra pillows and sliding sheets to increase comfort and minimize strain. Czech students observed that Icelandic nurses had access to a generous number of pillows and used them readily to prop patients into comfortable positions or to relieve pressure points. They also witnessed the use of a slippery underpad—made from synthetic material—placed beneath the standard cotton bed pad, which reduces friction and greatly eases patient movement. This simple tool allows staff to reposition even heavy or immobile patients with much less effort. While such glide sheets also exist in the Czech Republic, they appeared to be more routinely used in Iceland.

Overall, the Icelandic approach to hygiene care is very patient-centered and aligns closely in spirit with Czech practice. The differences lie mainly in technical details—such as glove use, water replacement, or timing of linen changes—but the core principles remain the same: ensuring respectful, safe, and high-quality hygiene care tailored to the patient's needs.

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Bed-Making in Iceland

In terms of approach and philosophy, Icelandic bed-making practices place a strong emphasis on practicality, safety, and hygienic precision. The goal is to create a clean, functional, and comfortable environment for the patient while also minimizing physical strain on healthcare staff.

Emphasis on Ergonomics and Safety

Icelandic nurses and caregivers routinely raise the bed to a comfortable working height in order to prevent back pain and musculoskeletal overuse. This is a standard part of their procedure and is taken very seriously—especially in hospitals that prioritize the prevention of workplace injuries. Raising the bed is recommended not only during bed-making but for any activity performed at the patient's bedside. During exchange programs, Czech students noted that Icelandic staff strictly adhered to proper body mechanics, used leg-driven movement, and made frequent use of supportive aids like repositioning mats or sliding sheets.

Procedure for Changing Linens on an Unoccupied Bed

Bed-making does not begin by simply removing the sheet. Icelandic staff follow a clearly defined hygienic sequence. Used linens are rolled inward to contain contamination and immediately placed in a soiled laundry bag—without shaking—to prevent the spread of dust, allergens, and microbes. The mattress surface is checked and disinfected or wiped with a damp cloth if needed. This ensures that the patient will lie on a completely clean surface.

A clean sheet is then placed on the mattress and tightly secured using "hospital corners"—a folding method that creates crisp, flat corners by diagonally folding and tucking the sheet under the mattress. This technique minimizes wrinkles that could contribute to pressure points or skin irritation in bedridden patients. Icelandic nurses pay close attention to detail, ensuring the sheet is smooth, taut, and fully secured. This precision is considered a sign of professionalism and respect toward the patient.

In Icelandic hospitals, the duvet is typically a single, washable piece with a firm outer surface—resembling a blanket and cover in one. A separate duvet cover is not always used because the whole blanket is designed to be laundered as a single item. This saves time and simplifies logistics by eliminating the need to handle extra bed linens. This practice differs from that in the Czech Republic, where a duvet with a removable cover remains standard. Pillows are usually smaller and always provided with clean pillowcases, which are changed between patients.

Bed-Making with a Patient in Bed

Changing linens with a patient in bed is performed with maximum sensitivity to the patient's comfort, privacy, and cooperation. Icelandic nurses first explain the procedure clearly and reassure the patient that it will be carried out gently and safely. If the patient can move, they are asked to assist. If not, the staff use the "logroll" technique—gently turning the patient to one side, often with the help of a second person or assistive device.

During this process, the patient's pillow and blanket often remain in place for most of the linen change. Unlike in the Czech Republic, where these items are usually removed right away, Icelandic nurses

prioritize keeping the patient warm and comfortable, removing these items only when absolutely necessary or not at all if they are clean.

The covering method is also lighter—a thin blanket or breathable bedspread is used instead of a heavy duvet with an additional sheet. This lighter cover keeps the patient warm during the linen change and remains on afterward.

Training and Standards

Iceland places strong emphasis on staff education and standardization. Bed-making is a formal part of training, both for students and newly hired staff. Internal protocols and written guidelines ensure that procedures are performed consistently across hospital wards. This reduces errors and guarantees that every patient receives the same high-quality care.

The training also highlights pressure ulcer prevention—nurses are taught to regularly inspect risk areas, use preventive positioning techniques, and utilize support aids (such as wedges, pillows, or positioning pads) whenever possible.

In summary, Iceland's hospital bed-making system is functional, ergonomic, and patient-centered. It prioritizes hygiene, safety, skin protection, and work efficiency. Staff make full use of modern tools, teamwork, and consistent procedures, while maintaining the patient's comfort and privacy as central values in care delivery.

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Injection Techniques in Iceland

In Iceland, injection techniques follow strict protocols and clearly defined professional competencies. In the hospital setting, these procedures are generally the responsibility of registered nurses (RNs) or physicians, while licensed practical nurses (LPNs) are rarely involved in actual injection administration unless working in long-term care facilities and holding additional certification.

The process for administering a subcutaneous injection, such as insulin or low-molecular-weight heparin, includes preparing the medication, verifying the patient's identity (often using the patient's name and social security number), performing hand hygiene, applying gloves when necessary, disinfecting the injection site, pinching or stretching the skin depending on the situation, inserting the

needle at a 45- or 90-degree angle as appropriate, injecting the substance, and swiftly removing the needle. Afterwards, the nurse applies a cotton pad or adhesive plaster and disposes of the needle safely in a sharps container. Throughout the procedure, the patient is monitored for any immediate reactions, and the injection is recorded in the medical chart.

For intramuscular injections, which are exclusively performed by RNs or physicians, the technique is similar but the needle is inserted perpendicularly into the muscle—typically into the deltoid, ventrogluteal, or vastus lateralis sites. Strict hygiene protocols are followed, including identity verification, site disinfection, choosing the correct needle length and gauge, checking for contraindications, and informing the patient about the procedure. Icelandic nurses may aspirate according to current guidelines, and after administration, they observe the patient for any side effects.

Intravenous injections and infusion therapies are also strictly limited to RNs and physicians. The procedure includes inserting a cannula, connecting the IV line, and administering fluids or medications with sterile equipment. The use of gloves, disinfection wipes, and sometimes protective gear like goggles or aprons is standard. Every IV procedure starts with hand hygiene and site disinfection. After securing the IV line, the nurse administers the infusion at the prescribed rate and carefully monitors the patient. The entire procedure is also documented.

Regarding competencies, the role of LPNs in Iceland is limited. They may assist with preparing equipment, educating patients, or supporting RNs during procedures, but they are generally not permitted to give injections. One exception is in non-acute care settings like nursing homes, where an LPN may administer subcutaneous injections if properly certified. This distinction was also noted during exchange programs, where Czech students observed that their Icelandic counterparts were not allowed to give injections on hospital wards.

Overall, the injection techniques used in Iceland align with international standards. Each procedure is carried out with a strong focus on patient safety, hygiene, and proper documentation. The key difference compared to the Czech Republic lies in the strict assignment of injection-related tasks to highly qualified RNs and physicians, reflecting a higher level of responsibility and regulatory control.

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Urinary Catheterization in Iceland

In Iceland, the insertion of a urinary catheter is a clearly defined procedure that may only be performed by registered nurses or physicians. Practical nurses do not carry out this procedure. It is performed only when there is a clear medical indication, always with the aim of minimizing the risk of infection. If the situation is more complex, such as in the presence of anatomical variations or resistance during insertion, the nurse will call a physician.

Before the procedure, the nurse verifies the indication, explains the process to the patient, and prepares all necessary equipment. Icelandic hospitals typically use complete catheterization kits containing sterile gloves, drapes, antiseptic swabs, lubricant, a catheter of the appropriate size, and a syringe for balloon inflation. The work area is prepared aseptically, the nurse puts on sterile gloves, and maintains sterility throughout the entire procedure, usually without changing gloves between cleaning and insertion – sterility is preserved by using sterile swabs or instruments.

The insertion itself is carried out by thoroughly cleaning the urethra with an antiseptic, lubricating the catheter, and gently advancing it into the bladder. Once urine flow appears, the catheter balloon is inflated with sterile solution, the catheter is secured, and connected to a closed drainage system. The nurse ensures that the catheter drains properly and that the closed system is maintained to reduce the risk of infection.

After the procedure, the nurse records all essential details in the medical documentation – the reason for insertion, the catheter size and type, the technique used, and the patient's condition.

Ongoing care for a patient with a urinary catheter in Iceland focuses on ensuring proper catheter function, preventing complications, and removing it as soon as it is no longer needed. Immediately after insertion, the nurse monitors urine output, color, volume, and any possible admixtures to confirm correct placement and system patency. The catheter is always secured to prevent accidental displacement or traction that could damage the urethra. In male patients, attention is paid to proper positioning of the penis and tubing to prevent kinking.

During hospitalization, not only the urine output is monitored, but also the condition of the urethra and surrounding skin. Daily genital hygiene is performed using a mild cleanser and clean water. In Iceland, it is common to use sterile swabs or disposable wipes for cleaning, always moving from the urethral opening outward to prevent the introduction of infection.

The drainage bag is kept below the level of the bladder to prevent backflow of urine. Tubing is not disconnected, and the bag is emptied in a way that avoids contact with the floor or contamination. For long-term bedridden patients, the bag is changed as needed or when signs of damage or contamination are present.

The nurse regularly evaluates whether the catheter is still necessary. Once the indication no longer exists, removal is planned – the shorter the duration of catheterization, the lower the risk of infection. After removal, the patient is monitored to ensure they can urinate spontaneously and without difficulty.

An important part of follow-up care is also patient and family education. If the patient is discharged home with a catheter, the nurse explains how to care for it, how to perform hygiene, when to empty

the drainage bag, and what signs of infection to watch for, such as fever, changes in urine color or odor, or pain in the lower abdomen.

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Nursing Documentation and Nurse Competencies in Iceland

Nursing documentation in Iceland is very robust and is usually done electronically in hospital settings. Both LPNs and RNs are trained to chart significant patient information in detail, and there is a common saying: *"If it is not written, it didn't happen."* This underscores the importance of record-keeping. Icelandic nurses document a wide array of data: vital signs, pain assessments, activities of daily living (ADLs) like how much the patient ate or their mobility status, the patient's mental orientation and mood, visits or communications with family, nutrition and hydration status, and outputs such as bowel movements and urination. All of these are recorded either in the nursing notes or on flow sheets in the electronic health record. Iceland has a national health record system, so documentation is typically done on a computer or tablet on the ward, making it accessible to the multidisciplinary team.

LPNs in Iceland do document a lot of the care they personally provide – for example, if an LPN performed a bed bath and changed linens, they would note that in the chart, including the time, and any observations (such as skin condition or if the patient tolerated it well). RNs will document their assessments and any procedures they did (like an IV medication or catheter insertion). Icelandic nurses are aware that thorough documentation is not only for continuity of care but also a legal record of what was done. In home care and nursing homes, LPNs also document, though it might be somewhat less extensive than in hospitals. The focus remains on capturing essential information so that anyone reading the chart gets an accurate picture of the patient's status. Privacy is also respected; Iceland has data protection laws for health information, and only authorized personnel can access patient records. In summary, the documentation culture in Iceland is one of diligence and detail, very much in line with modern nursing standards (and similar to Portugal's, which is entirely digital

Nurse Competencies: In Iceland, licensed practical nurses (LPNs) and registered nurses (RNs) have distinct but complementary roles. LPNs (often simply called practical nurses) are well-educated at the secondary school level and must pass national exams to be licensed. They are trained in fundamental nursing skills and can perform a wide range of supportive duties: basic patient care (hygiene, feeding, mobilization), administering oral medications and some injections (depending on policy), taking and charting vital signs, simple wound care, and so on. They also often act as the "eyes and ears" for the RN,

noticing changes in patients and reporting them. However, LPNs in Iceland do not carry out certain invasive or assessment-intensive tasks – for instance, they do not initiate care plans alone, perform complex wound dressings, give IV medications, or do initial patient assessments (those are RN tasks). Essentially, the RN has a higher level of responsibility and a broader scope that includes patient education, advanced interventions, and coordination of care. As the Icelandic team described, RNs are the largest group of healthcare staff in hospitals, and LPNs are also a significant workforce; together they form the backbone of the Icelandic health system.

Education pathways in Iceland reflect these roles: after compulsory schooling, a student can choose the LPN track at a vocational high school (3 years academic + practical work). An LPN graduate may start working or can later pursue further education. In fact, there are opportunities for LPNs to take additional courses (e.g., a professional diploma program) or even to use their credits to enter an accelerated university program to become an RN. For those who aim directly to be an RN, they must attend the University (such as the University of Iceland or University of Akureyri) for a 4-year Bachelor of Science in Nursing. There is no separate "diploma" nurse tier in Iceland (unlike the Czech vyšší odborná škola system); it's either LPN or RN. This was noted by Czech students: *Iceland does not have higher vocational nursing schools; after high school one can go straight to study a bachelor's in nursing*.

In the workplace, Icelandic LPNs often work quite independently in certain settings. For example, in home care, an LPN might be the sole caregiver on visits, handling tasks independently (since they are trusted at that level). In nursing homes, an LPN might act as a team leader for aide staff, because many caregivers there might be unlicensed aides – the LPN becomes the knowledgeable nurse on duty. In hospitals, LPNs work under the direction of RNs, but they still carry out most routine nursing tasks for their assigned patients and then report to the RN. The working conditions for nurses in Iceland are considered fairly good: hospitals are generally well equipped with modern devices to help care for very sick or heavy patients (though, as they humbly note, "things can always be better"). The work hours are around 36 hours per week for full-time, with shift work (nurses rotate mornings, evenings, nights). They also have generous leave policies (around 30 days of paid vacation after one year of employment). Nursing uniforms are required in hospitals, whereas in some nursing homes home-care staff might wear their own clothes. These contextual details reflect that Iceland values nursing staff and invests in their training and work environment, which in turn influences the quality of patient care.

During the Erasmus exchanges, Icelandic nursing students shared that they earn approximately 80% of a qualified nurse's salary during their practical training periods in hospital. This is part of their vocational training model, where students work and study concurrently and are compensated, which is different from the Czech system where student practice is generally unpaid and supervised by instructors. Also, Icelandic students carry procedure checklists or cards as prompts during clinical practice– a helpful tool to remind them of steps for various nursing procedures. These exchanges of information helped all sides appreciate each other's nursing competency frameworks. In summary, Iceland's nursing competencies are characterized by a high level of professional training for both LPNs and RNs, clear delineation of duties (with RNs handling advanced care), and a collaborative approach to patient care.

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Portugal

Portugal's nursing system also consists of registered nurses (RNs) and nursing support staff often referred to as healthcare assistants or practical nurses. The role equivalent to a Czech practical nurse or an Icelandic LPN in Portugal could be considered a nursing assistant (though the terminology and exact training differ). According to Czech observers, the competencies of practical nurses in Portugal are similar to those in Czech Republic, but with *a greater emphasis on autonomy* in performing their duties. In practice, this means a trained assistant nurse in Portugal can carry out patient care tasks with less direct oversight, taking initiative in routine care. Their tasks include patient hygiene, measuring vital signs, cleaning and disinfecting medical equipment, transporting biological specimens to the lab, mobilizing and transporting patients within the hospital, restocking supplies, and handling documentation and paperwork. They also communicate with patients and families as part of their role in supporting the care team. Essentially, Portuguese practical nurses cover the same basic care activities as in Czechia, and are expected to do so reliably so that RNs can focus on more complex tasks.

To become a nurse in Portugal, students have a couple of pathways. There are secondary-level health sciences programs which provide foundational healthcare training (analogous to a vocational health high school). These programs might prepare students for work as auxiliary nurses or care assistants, giving them basic nursing skills (similar to Czech "ošetřovatel" or practical nurse level training). For those aiming to be Registered Nurses, Portugal offers university nursing degrees – a Licentiate/Bachelor's in Nursing typically taking 4 years. After obtaining an RN license, many Portuguese nurses further pursue Master's degrees or specialized post-graduate training (1-2 years) in areas like community health, management, or specific clinical specialties. This is somewhat akin to specialization courses in Czechia. Notably, Portuguese nursing education is structured such that even during the undergraduate program, students progressively engage in clinical practice from the first year onward. By the fourth (final) year, student nurses are often providing full scope nursing care under supervision, essentially acting in a capacity very close to a graduate nurse Portuguese nursing students also typically have internships (practical training) that are sometimes paid, similar to Iceland. In fact, it was mentioned that Portuguese students, like Icelandic ones, receive some form of compensation or stipend during their clinical placements, which was interesting for the Czech side to learn.

Patient Hygiene in Portugal

In Portugal, providing a bed bath or hygiene care to a bedridden patient is usually a two-person job. This team approach is ingrained in their routine: often one registered nurse and one nursing assistant work together at the bedside. A concrete example observed during a student exchange was that *when bathing a bedridden patient, the Portuguese nurse does the washing while the healthcare assistant handles the drying*. This division of labor ensures efficiency and thoroughness – the nurse can focus on carefully cleaning each part of the patient, while the assistant immediately follows with a towel to dry and reposition the patient as needed. Portuguese staff believe this not only saves time but also reduces discomfort for the patient (they aren't left wet or exposed).

The sequence and method also have their nuances. It was noted that two people are needed to carry out hygiene care at the bedside in Portugal because of how they coordinate the task. Typically, they will start by washing the side of the patient that is farther away from them (for example, if standing on the right side of the bed, they wash the patient's left side first). Meanwhile, the second caregiver may be on the opposite side of the bed, ready to assist. They might logroll the patient toward the assistant, so that the nurse can wash the patient's back or far side, and the assistant then helps by cleaning or drying

that area. Then they swap roles for the other side. This coordinated method ensures the patient is supported from one side while being cleaned from the other, enhancing safety.

After the patient's body has been fully washed, dried, and any cream or lotion applied if needed, the Portuguese team will remove their protective gear (aprons, gloves) and then dress the patient in clean clothes or a fresh gown. They make it a point to put a clean gown on the patient as a last step, to avoid getting the clean gown wet or dirty while washing. One interesting detail shared by a Portuguese nurse (named Dolores) was that *when dressing a bedridden patient in a gown, they put the gown on starting from the front* (i.e. sleeves on the arms from the front side) so as not to soil the patient's back. In other words, because the patient has been lying on their back after being cleaned, the back is in a clean state; by dressing from the front, they avoid dragging the gown around on the bed or rubbing it against the patient's back, which could have remnants of wetness or soap. The gown is then tied at the back as usual. This was a small procedural tip that Portuguese staff do to maintain cleanliness and patient comfort.

Portuguese nurses also generally follow standard hygiene procedure order (cleanest areas to dirtiest, top to bottom), similar to Czech and Icelandic standards, so there's broad similarity. One difference to highlight is glove usage: in practice, Portuguese nurses also wear gloves for the intimate parts of the bath and whenever needed, but they might not use them for every single part (this is more similar to Iceland's approach than the Czech constant-glove approach). The focus is on maintaining a balance between standard precautions and patient comfort (gloves can sometimes feel impersonal to patients when used for low-risk contact). Overall, the collaborative approach in Portugal – nurse and assistant together – stands out as a way to ensure the bedridden patient's hygiene is done efficiently and safely. This was an aspect noted by exchange students as something they might consider implementing more in their home country, since working in pairs can be beneficial for both patient and caregiver.

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Bed-Making in Portugal

In Portugal, hospital bed-making practices differ in some aspects from those in other European countries, both in the materials used and in the technique itself. The bed is usually made with only one cotton sheet placed directly on the mattress. Often, there is a waterproof mattress protector between the sheet and the mattress, especially for patients at risk of soiling, but additional layers such as a drawsheet or a smaller slip cover across the middle of the bed are not used unless they are necessary, for example, due to incontinence.

When securing the sheet, the traditional method is to tuck it firmly under the mattress in the shape of a pocket, corresponding to classic hospital corners. This ensures that the sheet stays tight and the bed surface remains smooth and neat. In Portugal, it is not common to tie the corners of the sheet into knots, a technique used for example in the Czech Republic. During international nurse exchange programs, it became clear that the Czech method was new to Portuguese nurses, and some considered trying it out.

The top layer of bedding in Portugal usually consists of a bedspread or a light blanket. This approach is more practical in a warmer climate and also makes maintenance easier, as bedspreads are easier to wash and quicker to change. In most cases, there is no additional top sheet under the bedspread, which differs from colder countries where multi-layer bedding is common. If the patient feels cold, extra layers can be added, but the basic standard is a lighter cover.

When making an occupied bed, the process in Portugal is similar to that in many other countries. Ideally, two staff members work together, turning the patient to one side using the logroll method, changing the linen on the freed part of the bed, and then repeating the process on the other side. An important step is removing the pillow before turning the patient to ensure the safety of the neck and make the work easier.

As part of international exchange programs, Czech and Portuguese healthcare workers demonstrated their respective methods to each other. The Czech team showed the sheet-knotting technique, which Portuguese nurses found efficient in terms of both time-saving and quality. Conversely, the Czech nurses appreciated the Portuguese pocket-fold method, which produces a tightly made bed and is easier for staff who are not trained in knot-tying.

Overall, Portuguese bed-making is characterized by simplicity and practicality, focusing on a smooth, tight bed surface, the use of light covers, and adherence to hygiene procedures such as hand washing and using protective equipment when handling soiled linen. The differences between countries proved to be a valuable source of discussion and knowledge exchange, as each system has its own practical advantages.

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Injection Techniques in Portugal

In Portugal, the administration of injections is considered a professional nursing procedure that falls within the competence of registered nurses. These nurses must have a university degree in nursing, during which they complete both theoretical and practical training in injection and infusion administration. The training includes mastering all the steps needed to ensure the safety of both the patient and the healthcare worker, while minimizing the risk of complications. Nursing assistants or healthcare aides are not authorized to administer injections independently, although they may assist by preparing equipment, handing over materials, or providing psychological support to the patient.

The procedure for administering injections in Portugal follows international recommendations and standards common in other European countries. Before the procedure, the nurse verifies the patient's identity, checks the doctor's order, and ensures that the correct medication and dosage are prepared. The purpose and process of the procedure are explained to the patient to reduce anxiety and encourage cooperation. The nurse then washes their hands, puts on protective gloves, and disinfects the injection site.

For subcutaneous injections, such as insulin administration, the abdomen or thigh is often chosen. The nurse gently pinches the skin, inserts the needle or insulin pen at a 90-degree angle (or 45 degrees for thinner patients), slowly injects the medication, withdraws the needle, and immediately disposes of it in a sharps container.

For intramuscular injections, a site with sufficient muscle mass is selected, such as the upper outer quadrant of the gluteal muscle, the thigh muscle, or the deltoid muscle in the upper arm. After disinfection, the nurse inserts the needle quickly and firmly at a 90-degree angle, sometimes aspirates according to the current protocol, and then injects the medication. After withdrawing the needle, the site is pressed with a sterile swab, and the patient is monitored for any adverse reactions.

Intravenous infusions and the insertion of peripheral IV cannulas are also tasks performed only by registered nurses in Portugal. These procedures require dedicated training and practice on models as well as under supervision in clinical settings. The nurse selects a suitable vein, prepares a sterile set, disinfects the insertion site, places the cannula, secures it, and connects the infusion. Nursing assistants may help by preparing the infusion or monitoring its progress, but the actual cannulation is carried out by nurses or physicians.

During international exchange programs, it was found that there are no significant differences in injection techniques between Portugal, the Czech Republic, and Iceland. All healthcare professionals follow the principles of aseptic technique, correct patient identification, accurate dosage, and post-administration monitoring. Differences lie mainly in the legal definition of each profession's competencies rather than in the actual performance of the procedure. This alignment demonstrates that nursing education in Europe is largely standardized in the area of injection techniques, and adherence to international standards is considered standard practice.

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Urinary Catheterization in Portugal

Portuguese nurses are trained and permitted to insert urinary catheters for both female and male patients, which is a point of distinction compared to some other countries. In Portugal, inserting a bladder catheter (Foley catheter) is considered part of the RN's competencies for both genders. Exchange students from Portugal shared that *nurses in Portugal can also put bladder catheters in men*– something that surprised their Czech colleagues, as in the Czech Republic male catheterization often might involve a doctor. This showcases the autonomy Portuguese nurses have in performing what is a fairly invasive procedure. Of course, Portuguese nurses still must follow a doctor's order to place a catheter, but they do not need a doctor physically present to do it.

The procedure itself is carried out with a high level of sterility. A noteworthy practice in Portugal is the use of two sets of gloves during catheterization. Specifically, Portuguese nurses will don one pair of gloves to do the perineal cleaning (cleansing of the urethral area with antiseptic solution and sterile swabs) and to prepare the field. Once the patient is prepped and ready for actual catheter insertion, they remove the first pair of contaminated gloves and put on a fresh sterile pair before touching the sterile catheter and inserting it. This two-glove technique ensures that no contaminants from the cleaning step carry onto the catheter itself. It was highlighted by Portuguese staff as a key difference that Czech or Icelandic nurses might not be doing – in many places, a nurse might use one pair of sterile gloves throughout, being careful not to touch non-sterile surfaces, but Portugal formalizes the glove change to absolutely minimize infection risk.

Aside from that, all standard steps are observed: using a sterile drape, generous lubrication of the catheter, gentle technique (especially for male patients, to avoid injury to the urethra), and inserting until urine flows, then inflating the catheter balloon with sterile water. Portuguese nurses then secure the catheter to the patient's thigh or abdomen (for males, to prevent urethral trauma) and attach the closed drainage bag, maintaining sterile connection. They would monitor the patient's comfort and urine output thereafter. Post-procedure, documentation is completed in the electronic record (noting the time, size of catheter, amount of water in the balloon, and how the patient tolerated it).

The exchange discussions revealed that this level of nurse involvement in catheterization was higher in Portugal than in Czechia. It reflects Portugal's trust in nursing competency – freeing doctors for other tasks while nurses handle such procedures. It's worth noting that in many countries nowadays, RNs do catheterize male patients, but apparently some Czech hospitals still had doctors doing it, which is why the Portuguese explicitly mentioned their capability as a difference. For female catheters, all countries allow nurses to do it, so that was not a point of difference.

In summary, Portuguese RNs perform urinary catheterizations for both men and women as a routine part of their job, employing a meticulous sterile technique (including changing gloves mid-procedure).

This showcases both the advanced skills and the responsibility placed on nurses in Portugal's healthcare system.

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Nursing Documentation and Nurse Competencies in Portugal

Portugal has made significant strides in healthcare information technology. All nursing documentation in Portugal is electronic – the days of paper charts are largely gone. During the exchanges, it was emphasized that Portuguese hospitals use an Electronic Health Record (EHR) system in which nurses record patient information. Nurses enter notes about the patient's condition, vital signs, nursing care provided, and any changes observed, directly into a computer terminal or tablet. One report explicitly states that *"all medical documentation is electronic"* in Portugal and that nurses themselves input and write reports on patients in these systems. This means that from assessments to care plans to incident reports, everything is digitized.

An important cultural aspect of Portuguese documentation is the strict enforcement of confidentiality. Portugal apparently has very strong regulations against any leakage of patient information – there are strict penalties if a patient's data is misused or disclosed improperly. The nurses are acutely aware of privacy; for instance, they would never discuss patient details in public spaces and ensure computer screens are locked when not in use. This "absolute ban on information leaks" impressed the exchange participants, highlighting a shared value of patient privacy across countries, though Portugal's legal framework might be particularly stringent.

In terms of content, Portuguese nursing documentation is comprehensive. Much like their Icelandic colleagues, Portuguese nurses document vitals, medications, treatments, and nursing observations every shift. If a patient is assessed and found to be in pain, they document the pain score and what intervention was done. If a patient is taught how to do something (like insulin self-injection), they document the education given. All of this is stored in the electronic record, which can be accessed by the healthcare team for coordinated care. Another advantage of the electronic system is that it can be used to generate reports or ensure continuity of care (for example, if a patient transfers from one ward to another, the receiving nurses can read all the notes instantly).

Resource-wise, one exchange note mentioned that Portugal has fewer healthcare personnel than Iceland, meaning nurses there might care for more patients at once. This can make thorough documentation time-consuming, but the electronic system possibly streamlines it (through templates

or quick entry forms). Additionally, Portugal might have slightly fewer high-tech equipment or positioning aids compared to Iceland, but more than Czechia. This indirectly affects documentation – for example, if fewer staff are available, nurses might rely more on clear communication via documentation to ensure nothing is missed between shifts.

In conclusion, Portuguese nursing documentation is characterized by being fully electronic, detailed, and highly confidential. The exchanges confirmed that all three countries treat documentation as a critical task, but Portugal's use of a nationwide electronic system was a notable point of modernization that others observed with interest.

Nurse Competencies: In Portugal, the registered nurse (Enfermeiro) is the cornerstone of nursing care, with a role comparable to RNs elsewhere, while nursing assistants (auxiliary nurses or Técnicos de Auxiliar de Saúde) support the RNs. A Portuguese RN after graduating is equipped to perform comprehensive nursing duties: patient assessments, developing nursing diagnoses and care plans, administering all medications, IV therapy, complex wound care, emergency interventions, etc. They also often take on specialized roles; for example, there are nurse specialists in areas like medical-surgical nursing, pediatrics, mental health, etc., usually after additional education. RNs in Portugal are licensed by a national nursing council and must adhere to professional standards.

The practical nurse/assistant role in Portugal, as gleaned from the exchanges, is somewhat akin to a nursing aide with additional training. These individuals handle much of the basic care and logistics: hygiene, feeding assistance, moving patients, cleaning equipment, stocking supplies, and monitoring simple patient parameters. The Czech notes described that Portuguese practical nurses have a similar job content to Czech practical nurses, including assisting in procedures, administering some medications, and educating patients on basic health practices. However, it's likely that medication administration by assistants is limited to maybe topical or oral under supervision; most drug administration (especially injections) falls to RNs. Portuguese practical nurses are expected to be a bit more self-directed in their duties – once an RN delegates a task or once they see something needs doing, they will carry it out without needing step-by-step instruction, reflecting the "greater emphasis on independence" mentioned in the Czech comparison.

The collaboration between RNs and assistants in Portugal is crucial. Typically, an RN might have one or more assistants working with them on a ward. The RN will focus on clinical assessment, medication rounds, liaising with doctors, and technical procedures, while the assistant ensures each patient's daily living needs are met and comfort maintained. They continuously communicate to update each other – e.g., an assistant might report "Mr. Silva's temperature is up a bit" or "Mrs. Ferreira needed help to the bathroom and seemed a bit unsteady," which cues the RN to go assess those patients.

In terms of education and career development, Portugal offers those secondary health courses which can lead into being an assistant, but there isn't a licensed practical nurse in the same way as in Iceland. If one wants to advance, many assistants might choose to enroll in nursing school to become RNs. For RNs, the career path can include moving into nurse management, education, or advanced practice (like nurse practitioner roles in some areas). Additionally, as mentioned, higher university education (Master's) is often pursued, sometimes making Portuguese nurses highly qualified in specialized fields.

Portuguese nurses typically work around 35 to 40 hours per week, and shift work is common as in other countries. The exchange information noted that student nurses in Portugal worked 35 hours/week and rotated through night and weekend shifts during training to mimic real working conditions. Benefits for

nurses include about a month of paid vacation (depending on tenure), sick leave, and maternity/paternity leave as per labor laws. Portuguese hospitals also often provide subsidized meals for staff (the note mentioned they have cheaper meals as a benefit). These conditions are somewhat similar to Czech ones, though salaries in Portugal might differ and staffing ratios might be lower (leading to a heavier workload per nurse at times).

One more competency difference highlighted in the Erasmus exchange was regarding patient restraints: it was noted that in the Czech Republic, applying physical restraints to a patient (for safety or behavioral reasons) legally requires a doctor's order, whereas in Portugal it can be initiated by a nurse as part of care. This indicates Portuguese nurses have more authority in certain clinical decisions. It underscores the trust and autonomy given to Portuguese RNs in managing patient care directly.

In summary, Portuguese nurse competencies combine the compassionate, hands-on care provided by nursing assistants with the highly skilled, autonomous practice of RNs. Practical-level nurses cover routine bedside care with some autonomy, while RNs execute the full spectrum of nursing responsibilities, including those that overlap with medical care. The nursing team works in tandem to ensure all patient needs are met. The student exchanges confirmed that while the structure and titles might vary, Portuguese nursing roles are largely analogous to Czech ones, with the main differences being in the details of execution and the higher independence granted in certain tasks.

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Comparative Highlights: Differences and Similarities

Patient Hygiene: All three countries prioritize patient dignity, comfort, and thoroughness during hygiene care, but the execution and protocols differ slightly. In the Czech Republic, a nurse often works systematically alone (or with help if available) and uses gloves continuously for the entire bed bath and linen change. Czech practice typically involves changing the wash water midway (using separate basins for upper and lower body) and even changing the bed sheet during the bath so the patient is quickly on a clean surface. In Iceland, the general approach is similar (protective gown, raising bed height, privacy, but gloves are used more selectively – for instance, mandatory for genital care or if infection is present, but otherwise based on nurse's judgment. Icelandic staff might use one basin of water for the whole process and only replace linens after completing the wash. Portugal stands out for its team approach: hygiene care is performed by two people (commonly an RN and an assistant) working in tandem – one washes the patient while the other dries and assists. This not only speeds up the process but also ensures patient safety (the patient is never left unattended). All countries clean from top (cleanest) to bottom (dirtiest), but Czech and Portuguese nurses were intrigued by small differences like the starting point of the wash (face vs. hands first) and how gloves/aprons were used. These variations were directly observed during the student exchanges, e.g., Czech students noted the Icelandic practice of leaving the patient's pillow and duvet in place during the bath (Czechs remove them), and Portuguese nurses noted that Czechs use only one caregiver for tasks that they would do with two people. Despite procedural nuances, the outcome is the same – a clean, comfortable patient – and all adhere to infection control principles.

Bed-Making: In terms of bed-making, particularly when securing linens, the countries have distinct techniques. The Czech Republic has a unique practice of tying "hospital knots" in the corners of bed sheets to keep them tight. This method is taught in Czech nursing schools and was demonstrated during exchanges; it was so effective that both Icelandic and Portuguese observers praised it as very efficient. In contrast, Icelandic and Portuguese nurses do not use knots. Iceland typically employs the hospital corner tuck, folding the sheet ends neatly under the mattress. Portugal similarly folds and tucks – Czech visitors described the Portuguese style as folding sheet ends into a "pocketbook" (envelope) under the mattress. Another difference is in bedding layers: Czech beds usually have a duvet with a cover in addition to a top sheet or light blanket, whereas Portuguese hospitals often use a single cotton sheet and a lightweight bedspread, no heavy duvet. Iceland may not use a separate top sheet at all, sometimes opting to clean the duvet itself or use one layer less. All three countries agree on the basics: use clean linens, avoid shaking dirty sheets (to prevent spreading dust/germs, and ensure a smooth, wrinkle-free sleeping surface for the patient. In practice, each method achieves a tight bed – the difference is mostly in technique (knot vs tuck). A similarity was noted in occupied bed-making: nurses in all countries generally remove the pillow and position the patient safely before changing sheets on an occupied bed, and they work gradually, rolling the patient side-to-side. The exchanges allowed nurses to learn each other's tricks – for example, Czech nurses saw the benefit of Iceland's use of slippery under-pads to assist with turning patients, and Portuguese nurses considered trying the Czech sheet-knot for its firmness. Thus, while Czechia's bed-making is distinctive, and Portugal's bedding is lighter, the overarching goal of cleanliness and patient comfort is shared by all.

Injection Techniques and Policies: The clinical technique for administering injections (subcutaneous or intramuscular) is very similar across Czech Republic, Iceland, and Portugal, reflecting standardized nursing education. In all three, nurses verify the correct patient and medication, use antiseptic to clean the skin, employ proper needle angles, and ensure safe disposal of needles. No significant procedural differences were noted in exchanges regarding injections – participants explicitly stated they "didn't

notice any other differences in the other procedures" beyond what had been discussed. However, there is a difference in who is authorized to give injections and perform IV therapy. In the Czech Republic and Portugal, practical or assistant nurses might administer basic injections (like insulin or heparin shots) under the supervision of an RN, but intramuscular and intravenous administrations are typically done by RNs. In Iceland, the demarcation is stricter: only RNs (with a bachelor's degree) or physicians give IM injections or start IV infusions, and even subcutaneous injections in hospital are usually done by RNs. Icelandic nurse assistants (LPNs) generally do not perform injections as part of their routine duties in acute care. All three countries' nurses follow similar safety checks – for example, Iceland and Portugal both stress confirming patient identity (often via national ID or wristband) before drawing blood or injecting, which Czech nurses also practice. IV infusions are managed by RNs in all countries; no exchange report indicated an assistant-level nurse setting up an IV anywhere. Therefore, the key difference is not in how injections are done, but in nursing hierarchy: Iceland requires a higher qualification for tasks that Czech and Portuguese systems may delegate to mid-level nurses with oversight. Despite that, during joint workshops the participants found that when an injection was demonstrated, everyone recognized the procedure as essentially the same, underscoring a strong similarity in clinical practice.

Urinary Catheterization: All three countries adhere to sterile technique for urinary catheter insertion, but differences emerge in role responsibility and fine points of technique. In both the Czech Republic and Iceland, lower-level nurses do not usually insert indwelling catheters – this task is performed by RNs or physicians, especially for male patients Czech nursing standards often had male catheterizations done by doctors historically, though experienced RNs can do it; similarly, Iceland limits all catheterizations to RNs (or docs) as a rule. In Portugal, by contrast, it is normal for RNs to insert urinary catheters for both women and men as part of their scope of practice. This was highlighted in the exchange since it differed from Czech expectations. Another procedural difference is Portugal's emphasis on using two pairs of gloves during the catheterization procedure – one pair for the initial cleaning of the urethral area, and a new sterile pair for the insertion itself. This two-glove protocol is a distinctive Portuguese practice aimed at extra aseptic precaution. Czech and Icelandic nurses typically use one pair of sterile gloves for the whole insertion (being careful not to touch anything non-sterile after prepping the field). Aside from that, the steps (cleansing, lubricating, gentle insertion, inflating the catheter balloon, securing the catheter, and observing for urine flow) are the same in all countries. Documentation and follow-up are also similar – all nurses record the catheterization in the patient's chart and monitor output. So, the main differences lie in *who performs the procedure* (nurse vs. doctor for male patients) and *specific infection control measures* (like double-gloving in Portugal). A similarity across all three is that nurses are very mindful of infection prevention for catheters, recognizing the risk of catheter-associated infections. The exchanges allowed participants to discuss these practices openly – for example, Czech nurses were impressed by the meticulous glove change in Portugal, and Portuguese nurses were reassured that their Czech and Icelandic colleagues also maintain high sterility, even if by slightly different means.

Documentation: Nursing documentation is universally considered critical in each country, but Portugal has a fully electronic system that sets it apart. In Portugal, nurses chart all care electronically – every observation, intervention, and assessment is entered into a computer system, eliminating most paper records. This was a notable difference for Czech visitors who may be accustomed to mixed or paper charting. Both Czech Republic and Iceland are moving toward electronic records, and many hospitals have implemented them, but they might not be as uniformly used as in Portugal. Nonetheless, nurses in all three places follow the rule that "if it's not documented, it didn't happen", underscoring the importance of record-keeping. Icelandic nurses, for example, document extensively on vital signs, pain,

ADLs, mental status, etc., often in electronic systems as well. Czech nurses document similar information; some hospitals use electronic systems (especially for things like medication administration records or vital sign charting), while others still rely on written nursing notes and flowsheets – the trend is toward digital, learning from countries like Portugal. A common thread is that privacy and data security are taken seriously everywhere, but it was strongly emphasized in Portugal, where confidentiality breaches are met with strict penalties. Another similarity is that the content of documentation is alike: all will have nursing progress notes each shift, incident reports if anything unusual occurs, and inter-shift reports to hand over care. Portuguese nurses noted that having everything digital improves legibility and accessibility of information. Czech and Icelandic nurses, through exchange, expressed interest in adopting more comprehensive electronic systems, seeing the benefit in Portugal's approach. In summary, while the medium of documentation differs (paper vs. electronic), the thoroughness and critical nature of documentation is a shared value in Czech, Icelandic, and Portuguese nursing.

Nurse Competencies and Roles: The qualifications and roles of nurses across the three countries have parallels, with registered nurses (RNs) being the primary caregivers and practical or assistant nurses providing support, but there are structural differences in training and scope. In the Czech Republic, a practical nurse (secondary-school educated) must work under RN supervision and focuses on basic care tasks. Similarly, in Portugal, auxiliary or practical nurses handle fundamental care (hygiene, vitals, patient transport) and work under the direction of RNs, though they are expected to take initiative in their domain. Iceland's LPNs have a role much like Czech practical nurses, but the distinction is clear that certain procedures (injections, catheters) are outside their scope, reserved for RNs. All three countries require RNs to have higher education (Iceland and Portugal: a 3–4 year bachelor's degree; Czechia: bachelor's or equivalent diploma) and these RNs are licensed for the full range of nursing duties including leadership and specialized care.

A difference lies in the educational pathways: Czech Republic and Portugal both have secondary school programs for nursing assistants, as well as university programs for RNs. Iceland, however, does not have a separate vocational nursing college tier; one either completes the secondary LPN program or goes to university for RN – there's no intermediate "diploma nurse" level. This means in Iceland the practical nurse training is integrated into high school, whereas Czechia and Portugal formally recognize a middle-tier nurse who might pursue further studies later. Another difference is how clinical training is integrated: Portuguese and Icelandic nursing students both get extensive clinical placements (with Portugal starting from first year of uni, and Iceland having two structured internship periods in their LPN training plus optional work alongside studies. Czech nursing students (at the RN level) also have clinical practice each year, but Czech practical nurse students primarily train during their schooling with school-arranged practicums. Both Portugal and Iceland notably offer stipends or salaries to students during training something not common in Czech Republic. For example, Icelandic nursing students in the LPN track receive about 80% of an LPN's salary when working in a hospital for their practical training, and Portuguese students mentioned their internships were paid as well– these concrete examples from the exchanges underscored differences in how countries value and fund clinical education.

In daily work, nurse-to-patient ratios and resource availability can differ. Iceland often has a higher nurse-per-patient ratio and more modern equipment (like plenty of sliding sheets, electric beds, etc.), whereas Czech nurses frequently work with fewer resources and higher patient loads. Portugal was observed to have fewer staff than Iceland but more equipment than Czechia, putting it in between. This affects how competencies are exercised: an Icelandic RN might have time to do more patient education or complex procedures personally, whereas a Czech RN, being more stretched, delegates more to the

practical nurse and streamlines tasks (hence the Czech focus on efficiency like the fast bed-making). A Portuguese RN, with intermediate resources, still relies heavily on teamwork with assistants to get everything done on a shift. Despite these differences, all participants in the exchange noted that the fundamental competencies of caring for patients, working ethically, and being clinically skilled, are common ground. Each country's nurses showed professionalism and dedication to patient care, just within different healthcare system contexts.

In conclusion, while Czech, Icelandic, and Portuguese nursing procedures share a common foundation in good clinical practice, each country exhibits unique approaches and adaptations. The student exchanges provided invaluable insight into these practices: Czech nurses demonstrated their meticulous hygiene routines and inventive sheet-knotting, Icelandic nurses showcased their resource-rich techniques and role distinctions, and Portuguese nurses illustrated the power of teamwork and fully digital workflows. By comparing these procedures and competencies side by side, we can appreciate that differences in technique (knots vs. tucks, one-person vs. two-person tasks, etc.) are balanced by similarities in nursing values and goals. Each country learned from the others – be it a new practical tip or a broader perspective on nursing roles – ultimately enhancing the professional growth of everyone involved in the exchange. This comprehensive comparison highlights not only the *diversity* in nursing practices across Europe, but also the *unity* in the nursing profession's commitment to providing safe, effective, and compassionate care.

Brief overview of differences in nursing care:

Area	Czech Republic	Iceland	Portugal
Patient Hygiene	Usually one nurse works alone, uses gloves throughout, two basins of water, changes linen during bath	Selective glove use, often one basin, linens changed after bath, pillow/blanket left in place	Two caregivers work together (one washes, one assists), team approach, patient never left alone
Bed-Making	Ties 'hospital knots', uses multiple layers (duvet + sheet), focus on efficiency	Uses hospital corner tuck, fewer layers, sometimes no top sheet	Folds sheet into 'envelope', light covers, no heavy duvet
Injection Techniques	Practical nurses may give s.c. injections under supervision, RN usually performs i.m. and i.v.	Only RNs or doctors administer injections (including s.c.), LPNs usually do not inject	Similar to CZ – practical nurses give basic injections under supervision, RN for i.m. and i.v.
Urinary Catheterization	Male catheterization often by doctors or experienced RNs, one pair of sterile gloves	All catheterizations by RNs or doctors, one pair of sterile gloves	RNs routinely perform catheterization for both sexes, use two pairs of gloves (cleaning + insertion)
Documentation	Combination of paper and electronic records, trend toward digitalization	Mostly electronic records, not fully widespread	Fully electronic documentation, strict confidentiality rules
Roles and Competencies	Practical nurse has secondary education, works under RN, RN has bachelor's or diploma	LPNs trained at secondary level, RNs have bachelor's, LPNs not allowed specialized procedures	Auxiliary/practical nurses under RN, students start internships from year one, often paid

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Comparative Analysis of Palliative Care in Iceland, Portugal, and the Czech Republic

Palliative care, which aims to relieve suffering and improve the quality of life for patients with serious illnesses, is a core component of modern healthcare systems. However, how this care is delivered, organized, and understood varies significantly between countries. A comparison of palliative care in Iceland, Portugal, and the Czech Republic reveals notable differences in the level of integration within the healthcare system, the legal and cultural approach to end-of-life decisions such as euthanasia, access to services, and the depth of psychological and spiritual support.

In Iceland, palliative care is provided in hospitals, nursing homes, and homes, with a strong emphasis on flexibility and accessibility. A unique feature is the HERA program, a specialized mobile palliative team that operates 24 hours a day and is directly connected to the main hospital, Landspítali. This allows terminally ill patients to die at home with full medical and nursing support. The Icelandic system integrates palliative care into general medical practice, meaning that any healthcare provider might engage with a palliative patient and can request support from a specialized team. There is no strict division between palliative and curative care; both often proceed in parallel. The care is holistic and includes treatment of not just physical pain, but also psychological, social, and spiritual distress

In Portugal, palliative care has been structured at the national level since the creation of the National Palliative Care Program in 2004. This program created a framework for service provision across the country, including hospital-based palliative units, mobile home care teams, and day-care centers. Portugal's approach is more centralized and institutionalized than Iceland's. It includes clear policies, national education standards for professionals, and a government commitment to equitable service provision across regions. A key legal difference is that Portugal legalized euthanasia in 2023 under Law 22/2023, making it one of the few European countries where physician-assisted dying is permitted under strict conditions. Patients must be suffering unbearably from a terminal or incurable condition and must pass through a rigorous psychological and procedural process. This reflects a societal orientation toward patient autonomy and the right to choose the conditions of one's death.

In contrast, palliative care in the Czech Republic remains more fragmented and dependent on specific institutions, particularly hospices. There are only 17 inpatient hospices in the country, and although they provide high-quality care, the majority of terminally ill people still die in hospitals, often without access to specialized palliative teams. Home palliative care is offered by nonprofit or private services and requires active involvement from the family. Without family caregivers, patients often cannot stay at home, even if that is their wish. The Czech system is less integrated than in Iceland or Portugal, and palliative care is still emerging as a fully recognized specialty. Euthanasia is illegal and viewed as a criminal act, with strong ethical and religious opposition. Public debate exists, but there is no political will for change.

When it comes to pain management, all three countries recognize its importance but apply different methods. In Iceland, pain management is developed in cooperation with the patient. The use of opioids like morphine is common, accompanied by preventative treatment for side effects (e.g., nausea,

constipation). Iceland is also open to alternative therapies, including hypnosis, massage, and relaxation techniques.

Portugal uses a WHO-guided stepwise approach, combining pharmacological and non-pharmacological methods. Pain assessment is routine and standardized using pain scales such as the VAS. Treatments range from basic analgesics to opioids, and adjuvants like antidepressants are used for neuropathic pain. Non-medical therapies such as physiotherapy and psychological support are also part of routine practice.

In the Czech Republic, pain management is delivered through approximately 70 specialized pain centers, but these services are not always linked with palliative care. Cancer pain is the most commonly addressed, and patients in general hospital wards often do not receive consistent or personalized pain control.

Psychological and spiritual care also differ significantly. In Iceland, support is individualized, based on patient preference, and includes family counseling, cognitive therapy, and sometimes spiritual support. Icelandic care providers emphasize emotional honesty and use the SPIKES protocol for breaking bad news—focusing on setting, perception, knowledge, empathy, and summary.

Portugal, with its Catholic majority, incorporates religious rites into palliative care. Sacraments, prayers, and priestly visits are common, and families often participate closely in decision-making, sometimes even choosing to withhold full medical information from the patient.

In the Czech Republic, spiritual care tends to focus less on religious rituals and more on existential preparation for death. Patients are encouraged to mentally complete their life, seek forgiveness, and come to terms with mortality. Psychological support is based on understanding fear, loneliness, and grief—not just in the patient, but in the family as well.

Even in care after death, the approaches vary. In Iceland, the death is officially confirmed by a physician, and family members are given private time with the body. Nurses perform gentle post-mortem care, and autopsies are only done when necessary.

In Portugal, after confirming death, physicians must issue a Notification of Death and a Death Certificate, both of which are legal prerequisites for burial and estate processes. The body is cleaned and respectfully prepared, and traditional practices are observed.

In the Czech Republic, two healthcare professionals handle the body after death. They remove medical devices, clean the body, and allow family members to say goodbye. Autopsies are mandatory in the case of sudden or unexplained death, and families are guided through this process carefully.

In summary, Iceland emphasizes flexibility, patient comfort, and integrated care available in multiple settings. Portugal stands out with its structured national program, legal support for euthanasia, and strong religious integration. The Czech Republic maintains a hospice-focused model with excellent psychological depth but less system-wide integration and strong legal restrictions on end-of-life

decisions. While each country ultimately seeks to provide a dignified end to life, the paths they follow reflect deeper national values about autonomy, care, and the meaning of dying well.

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Medication Management in Healthcare: Practices in the Czech Republic, Iceland, and Portugal

Medication management practices in the Czech Republic, Iceland, and Portugal share a common goal of ensuring patient safety and maintaining legal accountability, yet each country applies different protocols shaped by local laws, healthcare structures, and workforce availability.

In the Czech Republic, medication must be prepared and administered by the same nurse. This rule is enforced to ensure direct responsibility and prevent errors. A nurse who prepares a medicine during a night shift cannot leave its administration to a nurse from the day shift. Patient safety is also protected by strict limitations regarding the handling of partially used medications. When a tablet is split and only half is given to the patient, the other half must not be returned to its original packaging. It may only be stored in a separate pill container if it remains clean and uncontaminated. Nurses are not authorized to prescribe any medications. They may only administer drugs prescribed by a physician. Each administration must be recorded manually in the patient's prescription card. Infusion therapy is allowed only for university-educated nurses, who follow the doctor's instructions regarding type, volume, and infusion rate. Common solutions include saline, glucose in various concentrations, and compound nutrition bags like All-in-One.

In Iceland, the registered nurse always carries the legal responsibility for medication administration, but the task may be carried out by others in certain contexts. In hospitals, medications are usually given by registered nurses or licensed practical nurses. In nursing homes and home care, due to staff shortages, medication can also be administered by workers with limited or no formal medical training. While the law allows one nurse to prepare medication and another to administer it, this is generally discouraged in hospitals and done only in urgent cases. However, it is more common in home care and care homes, where strict staffing rules are difficult to follow.

Patients may use their own medications in Icelandic hospitals if the drug is rare or not stocked by the hospital pharmacy. Nurses do not administer such medications directly but monitor the patient to ensure the drug is taken correctly. These medications are stored in individual boxes assigned to each patient. If a tablet is split, the remaining part can be placed in the patient's box, but not back into shared storage. When the medication comes from a general supply cabinet and is not patient-specific, any unused portion must be discarded.

Medication administration is documented electronically using computers, tablets, or smartphones. Each dose is individually signed off. Nurses are not allowed to prescribe medications, but they may provide common non-prescription drugs such as paracetamol, sorbitol, or antihistamines, particularly those listed in the patient's PRN list, meaning drugs that may be used as needed.

Narcotics are tightly controlled. In hospitals, they are stored in locked cabinets accessible only with personal access cards. When a narcotic is administered, the nurse must sign a log, register the patient's name, dosage, and remaining quantity in the cabinet. The night shift nurse performs

a full count each night to verify accuracy. In home care and nursing homes, narcotics are often pre-packaged for each patient by pharmacies and stored in locked containers. Administration practices in these settings can be less formal due to staffing constraints.

Blood transfusions in Iceland require a physician's order and are supervised by registered nurses. Licensed practical nurses assist with measuring vital signs before, during, and after the transfusion, and monitor the patient for signs of adverse reactions. Transfusions are primarily conducted in hospitals, with rare exceptions in care homes or home care settings.

In Portugal, the preferred approach is for the nurse who prepares a medication to be the one who administers it. When this is not possible, such as during a shift change, strict procedures must be followed. These include clear documentation, proper labeling of prepared medications, communication between staff, and institutional compliance with regulatory standards. The goal is to preserve traceability and accountability.

Administration of a patient's own medication in a hospital is generally discouraged but permitted under strict guidelines. The practice must be approved by a physician, and the medication must be verified and documented. Storage must be secure, and the patient must give informed consent. The nurse is responsible for monitoring the medication's use.

When a tablet is cut and only a portion is used, the remaining part should not be returned to its original packaging. To prevent contamination and ensure dosage accuracy, it should be stored in a clean, dry container separate from the original one. This applies especially to medications sensitive to environmental conditions.

Portuguese law distinguishes between prescription medications and over-the-counter drugs. Prescription drugs must be prescribed by a healthcare provider and dispensed by a pharmacist. They are used for more serious or chronic conditions and are often reimbursed by the national health service. Over-the-counter medications are used for minor health issues and can be purchased without a prescription in pharmacies and some supermarkets. These are not usually reimbursed.

Narcotics in Portugal are regulated under detailed national laws. They may only be administered with a physician's prescription, which must include all relevant details such as the patient's name, drug name, dosage, route of administration, and treatment duration. Before administering a narcotic, nurses must verify all prescription details and confirm the patient's identity. High-risk medications require double-checking by another nurse. Every administration must be recorded, noting the time, dose, route, and nurse's identity. Any adverse reactions must be documented and reported immediately.

Narcotics must be stored in locked cabinets that are resistant to tampering and accessible only to authorized personnel. A strict inventory is maintained, and regular audits are conducted to match records with actual stock. When narcotics are disposed of, it must be done according to environmental and safety regulations, and proper documentation of disposal must be kept. Access to narcotic storage is logged, with entries including the date, time, reason for access, and identity of the person.

Blood transfusions in Portugal follow a comprehensive protocol set by the national health authority. Before transfusion, the patient must give consent, and blood typing and cross-matching must be completed. The transfusion is monitored closely, with nurses verifying the identity of both the patient and the blood product. The transfusion rate is controlled, and vital signs are checked throughout the process. After the transfusion, patients are observed for side effects, and all steps are recorded. The storage, handling, and transport of blood products must comply with national regulations to ensure traceability and safety.

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Comparison of Nursing Education and Practice in the Czech Republic, Iceland, and Portugal

Nursing is a critical component of healthcare systems across Europe. While the core responsibilities of nurses are similar, each country has unique approaches to education, clinical practice, and professional roles. This comparison highlights the structures and practices of nursing in the Czech Republic, Iceland, and Portugal.

In the Czech Republic, nursing education is divided into two main paths: practical nurses and registered nurses. Practical nurses complete a four-year secondary medical school program, qualifying them to perform basic nursing tasks under the supervision of registered nurses or physicians. Registered nurses pursue a three-year program at a higher vocational school or university, earning a diploma or bachelor's degree. They are authorized to perform comprehensive nursing care, including advanced procedures such as intravenous therapy, catheterization, and administration of medications, including opioids.

Clinical internships are integral to nursing education, with students gaining hands-on experience in various hospital departments, including internal medicine, surgery, pediatrics, neurology, and gynecology. Uniforms are strictly regulated, with specific guidelines on appearance to maintain professionalism.

Iceland's healthcare system employs both registered nurses (RNs) and licensed practical nurses (LPNs). LPNs complete a three-year secondary school program that includes theoretical and practical training in subjects like anatomy, ethics, and public health. Many LPNs further their education to become RNs.

LPNs work across various settings, including hospitals, nursing homes, and home care, often taking on leadership roles in the absence of RNs. Uniform policies vary, with hospital staff typically wearing uniforms, while home care workers may wear personal clothing. The standard workweek is approximately 36 hours, with variations depending on shift types.

Clinical training is extensive, beginning in nursing homes and progressing to hospitals. Documentation is emphasized, with a principle that "if it isn't written, it didn't happen," ensuring thorough records of patient care.

In Portugal, nursing education is standardized at the university level, culminating in a bachelor's degree in nursing. The program typically spans four years (eight semesters) and integrates scientific, technical, human, and cultural training. Curricula cover a wide range of subjects, including anatomy, physiology, ethics, and public health, preparing nurses to provide comprehensive care across all life stages and prevention levels.

Nurses in Portugal are responsible for a broad spectrum of duties, from administering medications and performing diagnostic procedures to educating patients and families. They play a pivotal role in health promotion, disease prevention, and patient advocacy.

In long-term care facilities (LTCFs), nurses oversee medication management, including storage (87.5%), preparation (81.89%), validation (53.47%), and administration (40.56%). However, assistants and auxiliary staff are also involved in medication administration (45.66%), which raises concerns about patient safety due to varying levels of training.

Documentation practices are rigorous, with nurses required to maintain accurate and timely records of all patient interactions and interventions. This meticulous approach ensures continuity of care and legal compliance.

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