

hydrolysate cost-saving after six years. The third formula, an extensively hydrolysed whey formula, was dominated in both analyses.

**Conclusion:** Our results show that for the prevention of atopic eczema two formulas can be cost-effective or even cost-saving depending on the scenario.

Economic studies indicate that atopic dermatitis generates a high economic burden.

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### FACILITATING BLOOD WITHDRAWAL IN CHILDREN BY VISUALIZING VEINS WITH NEAR-INFRARED LIGHT

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**Background and aims:** Intravenous (IV) access for infusion or blood withdrawal may be cumbersome, especially in small children. Multiple puncture attempts for gaining IV access are traumatic and painful for the child. We developed a system (the Vasculuminator), based on infrared transillumination, that is able to visualize vessels underneath the skin. A feasibility study to the clinical use of the prototype in the procedure of blood withdrawal in children was performed.

**Methods:** The usefulness of the Vasculuminator during blood withdrawal in children under 6 years was studied in 45 children and compared to 80 children without the system at the phlebotomy station of the laboratory of a pediatric university hospital. Failure rate (i.e. percentage of procedures where more than one puncture was necessary to gain blood) was measured. The opinion of the laboratory technicians about using the Vasculuminator was evaluated after each procedure.

**Results:** The Vasculuminator enabled visualization of vessels underneath the skin up to a depth of several millimeters even in dark coloured skin. The failure rate of the procedures performed with the Vasculuminator (1/45; 2.2%) was smaller ( $p = .05$ ) than in the procedures without the Vasculuminator

(10/80; 12.5 %). In 26 of the 45 cases, the operators reported to have a benefit of the Vasculuminator. In none of the cases it was found to have a negative influence.

**Conclusions:** The Vasculuminator enabled visualization of relevant veins underneath the skin. This first clinical evaluation showed promising results in facilitating blood withdrawal in children by decreasing the failure rate.

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### AN EXPLORATORY STUDY OF PALLIATIVE AND TERMINAL CARE FOR CHILDREN AND THEIR FAMILIES (PATCH)

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**Background and aims:** Embedded in future direction within the field of palliative care for children and families is the need for a more substantive research to underpin care provision. This interpretative qualitative study aimed to investigate bereaved parent and health care professional perspectives on developing care and services for children with life-limiting conditions at the end-of-life.

**Methods:** A novel approach to data collection was adapted. Semi-structured interviews were used to capture the experiences of 25 bereaved parents (mothers and fathers). Five focus groups with health and social care professionals used a consensus building technique, about how services could be developed in line with the issues identified by parents as priorities.

**Results:** Resonance in issues experienced in the context of caring for a child at the end of life, were noted between parents and professionals. Issues included: anxieties around 'truth telling', symptom management, emotional impact, sibling needs, relationships and bereavement support. In terms of the differences between parent and professional experiences, two dimensions of service provision are of particular note, late referral to hospice and lack of services in the community, both of which dominated the accounts of parents whose children had non-malignant conditions but were ranked as relatively unimportant by service providers.

**Conclusions:** More structured bereavement support for parents was identified across the

professional groups as most important in future service development. Early referral to hospice service was ranked highly, particularly amongst hospice staff, whereas more structured staff support was ranked higher by professionals caring for children with cancer.

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**TECNICAL, INTERPERSONAL AND CRITICAL THINKING COMPETENCY ASSESSMENT: A SYSTEMIC APPROACH**

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Competence is more than possessing the knowledge or psychomotor skills necessary to perform a specific task. For nurses, competence means the caregiver integrates knowledge, skills and personal attributes consistently in daily practice to meet established standards of performance.

**Goal:** Presents our current Institution standards to assess nursing competencies needed to measure critical thinking and clinical decision-making abilities and necessary as a result of findings from quality-improvement data.

To assess nursing competency a methodological plan had to be established.

Competencies have two major components: first is a competency statement describing the general performance standard; second is a list of criteria describing the tasks required to ensure that the general performance standard is met.

Before beginning four important aspects had to be considered: outcome, category, learning domain and audience.

Expected outcomes were clearly defined based on pre-established goals with the aim of assessing acquisition of a new skill or of validating existing knowledge and skills.

Competencies were selected for evaluating the skills and knowledge needed to execute complex nursing interventions and intermediate or advanced in order to evaluate need for complex interventions.

Identifying a particular learning domain to address competencies.

Novice nurses needed a high percentage of psychomotor competencies, whereas competent nurses needed validation of higher level competencies.

Competency assessment has been proved as a valid tool for building long-term continuous improvement of high quality nursing care.

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**REVIEW OF PAIN CONTENT IN THREE YEAR PRE-REGISTRATION CHILDREN'S NURSING COURSES IN THE UK**

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**Background:** The results of several studies suggest that gaps remain in nurses' knowledge about pain in children, and in particular to pain assessment, analgesic drugs and non-drug methods, suggesting a need to explore the pain content of pre-registration nursing curricula. A review of pain content in pre-registration courses in England found that most curricula included less than 10 hours education on pain (Twycross 2000). This concurs with the findings of a study carried in the USA by (Graffam 1990). Since these two studies were undertaken, the way nurse education is delivered has changed with the advent of the internet and use of virtual learning environments. This study will explore the depth and breadth of pain content in three year pre-registration children's nursing courses across the UK and will ascertain how content is delivered.

**Method:** Higher education institutions running the pre-registration children's nursing course in the UK.

**Data collection:** The questionnaire used by Twycross (2000) was revised to reflect changes in how nursing courses are taught and new knowledge is assessed. Participants were asked to indicate topics covered in the programme, and how this was delivered.

**Procedure:** A copy of the questionnaire was emailed to the lead for children's nursing in each institution. A reminder email was sent out after three weeks.

**Results:** The findings indicate there are wide variation in the pain content of pre-registration nursing curricula in relation to number of hours, content and how the student knowledge