



## ORIGINAL PRACTICE DEVELOPMENT AND RESEARCH

### An international study on innovations in the management of children's pain

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#### Abstract

*Background:* Children have a right to effective pain management and up to date guidelines are available to promote this. Despite this, many reports state that children's pain in hospital settings is not managed well, and many children are left to suffer unnecessarily. Nearly a quarter of children surveyed said they were in pain all or most of the time they were in hospital (Picker, 2005). However, this is not the whole picture; many areas deliver effective and innovative pain management for children.

*Aim:* The aim of this travel scholarship was to undertake a study to identify innovations and learn from examples of good practice in the management of children's pain by visiting three areas of excellence in the UK, Sweden and Australia.

*Methods:* The study took an Appreciative Inquiry approach, focusing on learning from good practice, and follows four stages:

- Discovery (the best of what is): this involved visits to the three study areas and meeting practitioners, educators and researchers to explore innovations in their pain management practice
- Dream (what might be): this involved meeting with the host at the end of each study week to present to them identified examples of good practice for confirmation
- Design (what should be): this involved writing up the findings of the three visits, exploring what innovations could be introduced to improve pain management practice across the UK
- Destiny: this is dissemination and implementation of the best practice examples identified

*Conclusions:* In each area visited, confident practitioners identified innovations in their pain management practice that have improved children's pain experience in hospital. Innovations ranged from environmental adjustments to reduce anxiety related to pain, to standardising children's observation charts to promote the regular assessment of pain. Effective leadership was apparent at each study site.

*Implications for practice:*

- Appreciative Inquiry is about identifying what works so that it can be repeated
- Confidence and self-belief underpin the practice of effective pain management teams
- An effective leader with a vision is needed to drive continuous improvement in the management of children's pain

**Keywords:** Appreciative Inquiry, pain management, children's pain, international scholarship

## **Introduction**

Exemplary nursing practice is not often written about and therefore may not be accessible outside the specific group of practitioners who are engaged in that practice. Many peer reviewed academic journals report on research studies that identify areas of practice that need improvement, or on the views of practitioners on areas of practice. Few provide examples of where practitioners, faced with a challenge such as the management of children's pain, have developed innovations to meet the challenge. Good practice in pain management is known to take place but is patchy and needs to be identified. This study aimed to address this issue by visiting three international areas of excellence to explore with nurses, educators, clinical nurse specialists, anaesthetists and researchers what they consider to be best practice for managing children's pain in their units, followed by dissemination of the findings. More data were collected over three weeks than can be reported here, so this paper concentrates on a number of innovations that may be of relevance to the UK.

## **Appreciative Inquiry**

Appreciative Inquiry, where knowledge is gained from examples of effective practice (Cooperrider and Srivastva, 1987), provided the framework for this project. The aim of the study was:

- To identify and learn from international examples of good practice in the management of children's pain

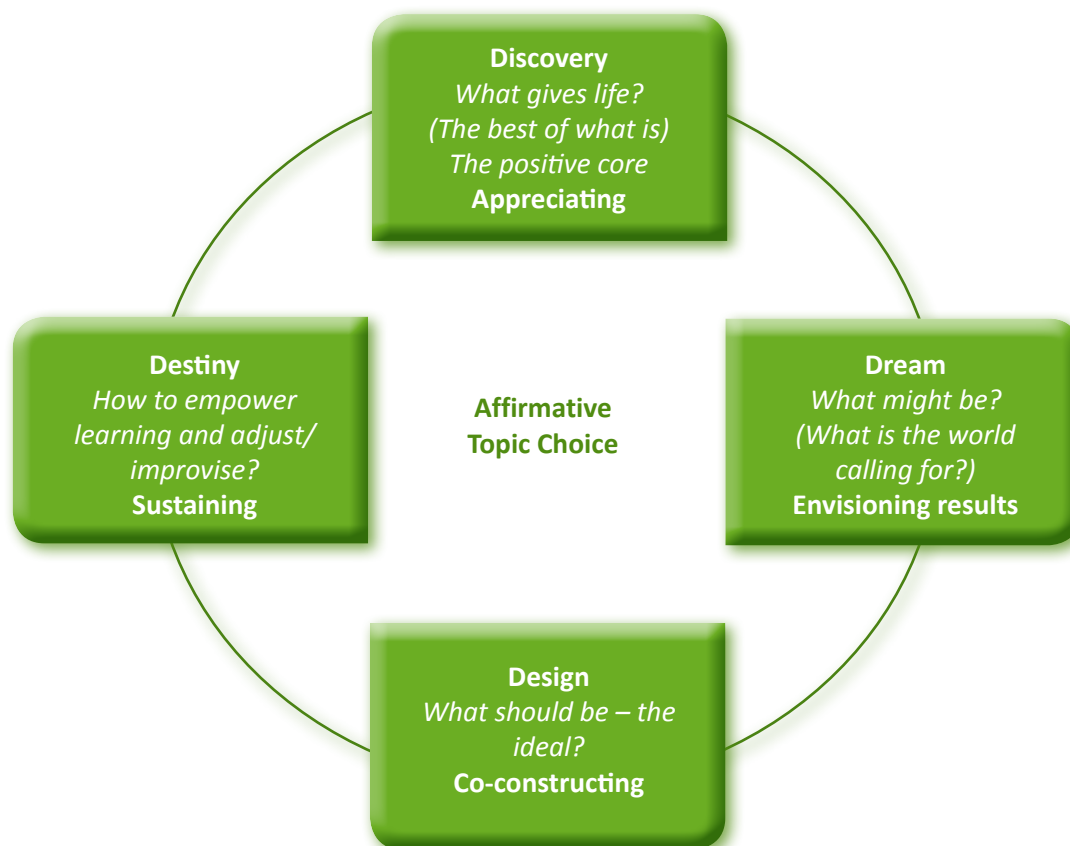
The objectives were:

- To identify how pain is managed at each study site
- To identify innovations in practice, research and education related to pain management
- To identify similarities and differences between each site's pain management practice

Appreciative Inquiry originates from the work of David Cooperrider in the eighties. As a PhD student he evaluated the work of a clinic by focusing on the positive aspects of the organisation (Hammond, 1996). Since then the approach has grown in popularity and scope, and is used in areas including peacemaking, knowledge management, leadership, coaching and socially responsible enterprises (Cooperrider et al., 2008).

Appreciative Inquiry is a future focused process of change that challenges common problem solving approaches based on the assumption that every organisation has something that works well and those strengths can be a starting point for creating positive change. A key underlying assumption of the approach is that the questions we ask influence the answers we get, and to undertake Appreciative Inquiry means taking on the role of an agent of inquiry (Magruder Watkins and Mohr, 2001). Therefore, to identify the positive aspects of pain management practice it was necessary to focus on gaining information on innovations in pain management practice. The Appreciative Inquiry approach used consists of four phases (see Figure 1).

**Figure 1: The four D Cycle of Appreciative Inquiry (Cooperrider and Whitney, 2005)**



*Discovery:* This phase involves identifying the best of what is; this was the phase of data collection through visits to each study site, meeting with practitioners, educators and researchers.

*Dream:* This phase is about what might be and involved meeting with the host at the end of each study week to present to them identified examples of good practice for confirmation and a discussion of what might be.

*Design:* This stage asks what should be the ideal. It involved writing up the findings of the three visits and highlighting innovations that could be introduced to improve pain management practice across the UK.

*Destiny:* The final stage is about what should be disseminated and implemented of the best practice examples identified, through publication and presentation to an international conference, and also to the 'Travelling Paediatric Pain Club', a group of specialist practitioners in pain that meets annually in the UK. Cooperrider et al. (2008) suggest that this phase delivers new images of the future and is sustained by a nurturing sense of purpose and movement. The Destiny phase is ongoing and can bring an organisation full circle to the Discovery phase. In relation to this Appreciative Inquiry study on the management of children's pain, the use of the term 'organisation' relates loosely to the collective group of practitioners who lead pain management practice.

In this paper, the section on the Design phase will contain most of the content and the analysis of the findings of the three visits. This will be followed by the Destiny phase, which outlines the ongoing dissemination of the findings to promote best practice.

Cooperrider et al. (2008) suggest that the positive core of organisational life is one of the greatest, yet least recognised, resources in the change management field today. To get started with Appreciative Inquiry, no major change is required. Cooperrider (2000) suggests that positive change will lead to faster, more democratic and energised change than will deficit enquiry into the broken and the problematic. Appreciative Inquiry has been used in healthcare by Carter et al. (2007), who suggest that it is a unique process that offers practitioners an opportunity to reflect on the existing strengths in practice, leads them to identify what is important and has the potential to transform practice and improve patient care.

## Background

*'Most children's pain in hospital settings is not managed at all and, if it is managed, it is on the basis of clinicians' hunches and assumptions rather than on data obtained from self-report and observational measures'* (Von Baeyer, 2009, p 48).

This quote from an eminent pain researcher highlights the need for change in how children's pain is managed. It suggests that children are suffering unnecessary pain and that pain management is at best ad hoc. The Picker Institute, which surveys NHS patients on their experience in hospital, found that 23 per cent of children and teenagers said they were in pain all or most of the time they were in hospital and 31 per cent felt that staff could have done more to help (Picker Institute, 2005, p 6). The latest guidelines on pain management (Royal College of Nursing, 2009; Association of Paediatric Anaesthetists, 2012) stress the need for systematic assessment of pain, with the gold standard being the use of a self-report pain assessment tool, allowing a child to tell the nurse if they are in pain. The Children's National Service Framework (Department of Health, 2004, p 28), states that children 'have a right to appropriate prevention, assessment and control of their pain'. This was followed in 2005 by the International Association for the Study of Pain Special Interest Group's position statement entitled 'Children's Pain Matters', asking why children's pain is dealt with inadequately around the world (International Association for the Study of Pain Special Interest Group, 2005).

As far back as 1982, it was noted that the reality of pain management practice fell short of what was possible technically (Melzack and Wall, 1982). Despite a wealth of studies, it is not fully understood why children of all ages are being left in unnecessary pain, although some authors have suggested reasons. Breivik and Stubhaug (2008) suggest that guidelines and directives, even from central government, are not enough to change practice, while Manias et al. (2004) suggest that pain management is opportunistic, simplistic and frequently interrupted, all of which indicates it is still a low priority, competing for attention in the busy nurses' schedules.

However, there is also recognition of the challenges and emotional cost nurses face in attempting to manage children's pain. Studies suggest that nurses undermedicate children in pain because of a lack of knowledge and inadequate assessment skills (Mackintosh and Bowles, 2000; Simons and Moseley, 2009). Nurses themselves cite doctors' prescribing patterns as a barrier to managing pain effectively, alongside challenges in communication regarding pain with children and their parents (Twycross and Collins, 2011).

There is a dearth in the literature of new ideas to improve pain management. This study focuses on innovations that have improved the management of children's pain in three specific locations and draws the information together so that practitioners managing pain across the UK can benefit from this knowledge. Alternative methodologies could have been a narrative enquiry, or a phenomenological approach (Parahoo, 2006). However, as the focus of the study was on what works, an Appreciative Inquiry approach was used, as it guided the identification of areas of effective practice in pain management in a focused way.

## **Ethics**

Although ethical approval is not always viewed as necessary in relation to practice development work, it was deemed good practice to apply for approval as the study involved discussions of pain management practice with healthcare professionals. Ethical approval was granted by the Open University Human Research Ethics Committee. Approval was given to visit each study site and verbal consent was gained from practitioners. The author explained the background and purpose of the study to each person interviewed and gave a written explanation with contact details.

## **Three areas visited**

### ***Study site one: Alder Hey Children's NHS Foundation Trust, Liverpool, UK***

Alder Hey Children's NHS Foundation Trust is one of Europe's biggest and busiest children's hospitals. It has been rated 'excellent' by the UK's Healthcare Commission for the past seven years, which puts it in the top two per cent of UK Trusts. It has an active pain control service, which has engaged in service improvements in delivering children's pain management, and is interested in improving how nurses manage children's pain.

### ***Study site two: Queen Silvia Children's Hospital, Sahlgrenska University Hospital, Gothenberg and Linköping University Hospital, Linköping, Sweden***

Sahlgrenska University Hospital is a specialist centre in Sweden for paediatrics. The hospital provides an infrastructure for teaching and research in cooperation with the Sahlgrenska Academy at the University of Gothenberg. Linköping University Hospital has a well established pain team. The Swedish healthcare system is seen as progressive and is admired worldwide as an example of an effective system (Triggle, 2005), with the Swedish government spending more of Sweden's GDP on healthcare than many other European countries, including the UK (OECD, 2012).

### ***Study site three: The Children's Hospital at Westmead and The Children's Hospital Randwick, Sydney, Australia***

Westmead and Randwick Children's Hospitals became a network in 2010. The two hospitals were established in the 1800s and jointly form the largest paediatric healthcare entity in Australia, providing a specialist facility for children's health, a paediatric teaching centre and the hub of a network of professionals caring for children.

## **Findings (Discovery phase)**

This section of the study is aligned with the Discovery phase of Appreciative Inquiry. In this phase Cooperrider et al. (2008) suggest the drive is to gather information on people's perceptions of the 'best of what is' and to capture what is successful. For this reason the three areas chosen were areas of excellence in children's healthcare. During my visits to the three study sites my key question was: 'What innovations have you seen in the management of children's pain in the past five years?'

## **Liverpool**

At Alder Hey in Liverpool, I spent a week with the acute pain team and met a range of professionals involved in the management of children's pain. I also attended four ward rounds and observed the pain team assessing and adjusting children's pain management. I sat in on a hospital play specialist supervision session, a teaching session on pain management and a laser clinic where Etonox<sup>®</sup> was being used for painful procedures. Etonox is a mix of nitrous oxide and oxygen used as a medical anaesthesia gas.

### ***Innovations discovered in Liverpool***

- One hospital play specialist has been funded for ten hours a week to introduce the Paediatric Pain Profile (PPP), developed by Hunt et al. (2004), which is a tool for children with complex needs. Parents of children using the PPP have found it helpful in communicating with practitioners about their children's pain.

- The lead clinical nurse specialist in pain is an independent prescriber who can prescribe the full range of analgesics, which enables her to assess a child's needs and carry out titration of dosage to suit the individual's needs in a timely fashion.
- Hospital play specialists are trained and assessed as competent to administer Entonox® to children during painful procedures. This advance has meant that procedures are shorter and children experience less pain. Parents are happier and there is reduced anxiety and fear for children who need regular procedures.
- The Liverpool Anticipatory Procedural Pain Score (LAPPS) (Craske et al., 2013) enables practitioners to predict those patients who may need different levels of intervention and support due to factors such as previous painful experiences, which is part of a care pathway for procedural pain. This has been designed as a guide for preprocedural pain assessment, pain management planning, preparation for the procedure, and management during and following the procedure.
- The postoperative tonsillectomy regime was developed as post-tonsillectomy children showed that they were still in pain at home. Children are given paracetamol, codeine and ibuprofen together three times a day. A fourth dose can be given during the night but only if the child wakes in pain.
- Rheumatology joint injections are being used to reduce pain in children and young people suffering from rheumatology related joint pain.
- The use of intravenous (IV) paracetamol (NICE, 2013) has brought a huge improvement in managing pain, meaning patient controlled analgesia or nurse controlled analgesia infusion can be avoided. Patients undergoing spinal surgery used to go to the intensive care unit (ICU) for 24 hours, but they can now go back to the wards with fentanyl and ketamine epidural infusions along with IV paracetamol.
- An increase in the effectiveness of anaesthetic blocks has been achieved through the use of ultrasound to guide their insertion and delivery, which has resulted in more efficient delivery of local anaesthetic and more effective pain relief for children. There has been an increased use of ketamine, which means the need for opioids is reduced. Vadivelu et al. (2010) have reported on the effectiveness of such a multimodal analgesic approach.

### **Sweden**

I spent a week in Sweden visiting two children's hospitals, one in Gothenberg and one in Linköping. In Gothenberg the pain team consisted of a pain nurse, a psychologist, a physiotherapist and an anaesthetist. In Linköping there were four pain nurses and an anaesthetist in the pain team.

During my week I had discussions on innovations in pain management with 12 professionals. I also spent time with the pain teams at both hospitals, visiting ward areas, the play room, the recovery area and the burns unit. I also visited a rehabilitation centre for disabled children and a community hospital.

### *Innovations discovered in Sweden*

- In the Swedish emergency department they use music to calm children in pain. There is a zebra room and a jaguar room, decorated specifically with these themes to reduce children's anxiety during painful procedures. This comes from the work of Roger Ulrich, an environmental psychologist from the USA, on nature and pain (Ulrich, 1984; Ulrich et al., 1993).
- To complement the work based on Ulrich in the Swedish emergency department, a protocol had been devised that allowed children who presented in pain to be administered analgesics while waiting to see a doctor, reducing their discomfort and preventing the pain from escalating.
- In Gothenberg I met an intensive care nurse who had undertaken a course on tactile touch and was undertaking a master's degree exploring its effects on children in intensive care. The child's position is monitored, the level of noise in the unit is reduced and tactile touch is used. The result is that children are calmer and less medication is required. The nurses also reported that parents found the ICU a less stressful place to be.



- I also came across use of nitrous oxide for procedures in Linköping, with nitrous oxide and oxygen being used at variable rates depending on the assessment of the child. The children are assessed, and then at the beginning of the procedure they are given 70:30 nitrous oxide:oxygen for six or seven breaths. The child becomes quiet and relaxed, and then the pain nurse returns the settings to 50:50. In Linköping the lead clinical nurse specialist worked for a year in pharmacy and is a qualified anaesthetic nurse.
- In Gothenberg I discovered a project focused on a communication system developed for children with cognitive impairment, to be used in preparation for surgery. The system was called Talking Mats and used small pictures representing emotional states as well as sets of pictures representing quality and quantity (Nilsson et al., 2012). Another related project focused on the reduction of preoperative anxiety in children with cognitive impairment in an attempt to reduce post-operative pain (Andersson et al., 2012). The project demonstrated that children and parents were very enthusiastic about the use of picture boards and Talking Mats, which were used with all younger children as well as those with cognitive impairment.

### Sydney

In Sydney I spent time at two large children’s hospitals where I met a range of professionals working in children’s pain. I also sat in on a pain research meeting, a chronic pain clinic meeting and a pain team clinical business working meeting. I attended a Grand Rounds lecture, visited a burns unit and toured both hospitals. I discovered many innovations that have improved the management of children’s pain in Sydney.

*The following innovations were discovered in Sydney:*

- Both children’s hospitals in Sydney use the Standard Paediatric Observation Chart (Sydney Local Health District , 2012) which emerged from a project in New South Wales. The chart is colour coded, with a number of different sections including an early warning system. The section for recording pain scores is divided into four sections, as in Figure 2 below. There are versions of the Standard Paediatric Observation Chart for different age groups: under one year to five years; five to 11 years; and over 11 years.

**Figure 2: Example of pain scoring section on Standard Paediatric Observation Chart**

Date									
Time									
Pain score	Severe (7-10)								
	Moderate (4-6)								
	Mild (1-3)								
	Nil								

- At Westmead children are discharged on strong analgesics and are supported at home over the telephone by pain nurses for up to a week post discharge. This service works well and has been in place for a number of years.
- Westmead also has an accessible pain guideline document, available to staff on the hospital intranet. It was reported that with just three mouse-clicks it is possible to find out the dose required for a child in pain. It is the most used document in the hospital, making pain information accessible to all.
- Another innovation in Sydney is the development of national data on pain management interventions, such as epidural infusions, nurse controlled analgesic infusions, patient controlled analgesic infusions and regional infusions, among others. It is anticipated that once national data have been gathered from children’s hospitals across Australia, benchmarks can be drawn up to standardise and promote pain management practice.
- One of the strengths identified at Sydney’s children’s hospitals was a combined pain team

focusing on both acute and chronic pain. This coverage was seen as a real strength in the pain service. One clear advantage of a combined team is the shared knowledge of acute and chronic pain, which will be further discussed in the next section.

At the end of each study visit I met the lead pain nurse or visit host to present my findings for the week, which were discussed and confirmed as accurate. Having discovered the 'best of what is' during the study weeks, it was then necessary to consider 'what might be'.

### **What innovations can be used in the UK? (Dream and Destiny phases)**

The second phase of Appreciative Inquiry is the Dream phase and focuses on what might be; the third phase, the Design phase, focuses on what should be the ideal, which involves envisioning how the information from the Discovery phase could be used to influence future practice (Cooperrider et al., 2008). Both Dream and Design phases will be reported in this section, in the form of ten areas of innovation identified from Sweden and Australia that appear to have direct relevance to improving pain management across the UK. Each innovation is explored in relation to the supporting evidence.

#### **1. The use of Ulrich's work on the environment**

In 1984 Ulrich reported on a study of 46 adult patients (23 matched pairs) who had undergone a cholecystectomy and were exposed either to a view of a brick wall or a view of trees throughout their postoperative period in hospital. Results indicated that those who had a view of trees stayed in hospital for a shorter time than those who had a view of a brick wall. Patients exposed to the brick wall had a more negative experience in the postoperative period and needed significantly more analgesia than those who had a view of trees. Wilson (1984) proposed that human beings have an inherent bond with the natural world and that contact with nature could benefit an individual's health, suggesting that the link with nature could have implications for the reduction of pain (Malenabum et al., 2008). Further studies have reinforced this suggestion. The postoperative use of more natural light, nature images and nature sounds all had positive impacts on pain, with less analgesia being needed and patients reporting greater control of pain (Ulrich et al., 1993; Diette et al., 2003; Walch et al., 2005). There is little evidence of research studies on the effects of nature on children's pain but a recent Swedish study explored the effect of music on relief of pain and anxiety in children with cancer undergoing lumbar puncture; they found that listening to music was effective in reducing pain and anxiety in children aged seven to 12 years (Nguyen et al., 2010).

To relate this work to the UK and the NHS, there are a number of initiatives that could be undertaken. On a simple scale nurses could ensure that measures were taken to ensure natural light is maximised in areas where postoperative children are nursed. When ward areas are being redecorated, nature scenes could be used to promote the calming effect found in adult studies. On a larger scale, when it comes to designing new hospitals, wards and single rooms should have views of nature. In Liverpool, a new children's hospital is being planned (see Figure 3). Its programme director David Powell explained:

*'Moving next door to Springfield Park will mean the building can blend into its surroundings and become a hospital in the park. There will be views of the park from most windows and every child will be able to see green space/nature from their room'* (BDP, 2012).



**Figure 3: Images of the planned Alder Hey Children's Health Park in Liverpool**



To evaluate the impact of the new environment on children postoperatively, data would need to be collected and comparisons made between the new and the old hospital environments. Most pain teams collect data on their practice, which could be used as a baseline for comparisons in the new environment. Another UK example of a hospital built around the child's perspective is the Evelina Children's Hospital in London, which has won awards for its design and is credited with being full of colour and light (Guys and St Thomas', 2012).

### ***2. The use of tactile touch in intensive care***

The literature on tactile touch is somewhat limited, with some studies having been undertaken in Sweden. Tactile touch involves effleurage, which is soft, stroking movements along the body, including the face, back, chest, stomach, arms, hands, legs and feet (Taylor, 1991). Tactile touch is similar to therapeutic massage in its benefits for cancer patients, as it promotes relaxation and alleviates the perception of pain and anxiety. Henricson et al. (2008) conducted a randomised controlled trial involving a five day tactile touch intervention on 44 patients in intensive care. The results showed that tactile touch led to significantly lower levels of anxiety. When patients are less anxious it is easier to treat their pain. The promotion of relaxation in relation to pain is beneficial to postoperative patients (Roykulcharoen and Good, 2004; Seers et al., 2008). The lack of data on the impact of tactile touch on children may prove to be a barrier to its implementation but it could be tested as a practice development initiative in order to gather data on its effectiveness.

### ***3. The use of specially designed literature to communicate more effectively before admission for a surgical procedure***

It is not surprising that enhanced communication with children, whether or not they have cognitive impairment, is well received. As far back as 1975, Jack Hayward's seminal work demonstrated that providing relevant preoperative information to patients reduced postoperative pain and anxiety (Hayward, 1975). The Talking Mats communication project in Gothenberg (Holstenson et al., 2012) has the potential to benefit all children and families preparing for surgery by working towards reducing postoperative pain and anxiety. This could easily be replicated in the UK.

### ***4. The use of 70:30 nitrous oxide and air for painful procedures***

At Linköping University Hospital, the lead pain nurse outlined the use of nitrous oxide and oxygen in a 70:30 mix for children requiring analgesia for painful procedures. The nurse has a background in anaesthesia and is a qualified anaesthetic nurse. The pain team had been using a combination

of nitrous oxide and an opioid for painful procedures and had recently carried out a study of its effectiveness in the emergency department. The study included 74 children – 54 boys and 20 girls, aged between two and 17 years. Nitrous oxide was gradually increased from 30 per cent to 70 per cent over five minutes and was stopped when sufficient analgesia was reached. The study concluded that a combination of opioids and nitrous oxide given by trained anaesthesia personnel is well tolerated and effective for procedural pain in ambulant paediatric patients in the emergency department (Berg and Hansson, 2012).

A number of studies have been undertaken into the effectiveness of nitrous oxide and oxygen in the alleviation of pain during short procedures in children and young people (Bruce and Franck, 2000; Bruce et al., 2006; McKenna et al., 2012). However, the use of nitrous oxide in the UK is usually as a stable combination of 50 per cent nitrous oxide and 50 per cent oxygen in the form of Entonox<sup>®</sup>, which can be administered from a portable gas cylinder. The stability of this gas means that it can be safely used by a number of professionals trained to do so. In both Liverpool and Sydney, the use of Entonox<sup>®</sup> was being extended so that more children could have access to it more readily than if they had to wait for the pain team to attend. The innovation of using a variable combination of nitrous oxide and oxygen, which has been evaluated as effective, would not be appropriate to extend to staff outside the pain team, and the report from Sweden stipulated that its administration should be restricted to those who had training in anaesthesia.

#### ***5. Pain in A&E, a protocol devised to give children analgesia before they are seen by a doctor***

Children presenting in A&E are often in pain and, despite being triaged, may experience a long wait to be assessed by a doctor. The British Association for Emergency Medicine (2004) has drawn up guidelines for the management of pain in children in A&E, providing an algorithm for the treatment of acute pain. It is likely, however, that such a guide will only be used once a child has been medically assessed. The hospital in Gothenberg has devised a protocol providing guidance on the administration of analgesia to children before they are seen by a doctor. Such a protocol is likely to have a number of positive outcomes, initially by preventing the pain from escalating. It is also in line with the Royal College of Nursing (2009) pain guidelines, which state that pain in children should be anticipated at all times. Such an innovation would require effective leadership and multidisciplinary working, with all parties having a vested interest in the outcome.

#### ***6. Follow-up support to parents from pain nurses for one week post discharge***

With the increase in day-case surgery and shortened stays postoperatively, the role of parents in managing their children's pain at home has increased. The literature, however, suggests that parents are often ill equipped to manage their children's pain after discharge (Miaskowski, 2003). LeMay et al. (2010) suggest that parents' mistaken beliefs about pain management may inhibit them from managing their child's pain appropriately. Parents themselves have described difficulties in managing their child's pain at home and have criticised pain related instructions provided by hospital staff, falling back instead on what they already know (Kankkunen et al., 2003; 2004). There have been a number of studies exploring this complex issue. Fortier et al. (2009) explored pain in children at home after surgery and found that although parents reported that their children had significant pain, they gave them few analgesics; on the other hand Zisk et al. (2007) found that parents' assessment of their child's pain had good sensitivity. One study by Jonas (2003) explored parents' management of their children's pain at home supported by a phone call 24 hours after surgery, and reported that 79 per cent of parents found the phone call useful, concluding that if parents are provided with support and suitable information on discharge they can manage their child's pain at home. The pain team in Sydney provide a post discharge support service to parents whose children are sent home on strong analgesics. This service has had a positive impact on two fronts: parents and their children return home earlier and the daily support means that parents have the confidence to manage their child's analgesics at home. However, such a service in the UK would require the time of a pain nurse over a regular period and might need to be introduced in stages. It would require close liaison with the medical team responsible for discharge

and the pain team to ensure the right support. The cost of providing the extra support, though, would be considerably less than extending a child's stay in hospital.

### ***7. The use of standardised observation charts for all ages incorporating pain scores***

During my visit to Sydney I was told that pain assessment tools are well adhered to, which is contrary to findings in the UK. For example, one UK study looking at pain management practice (Twycross and Collins, 2011) found that pain assessment tools were not always used and pain documentation was limited. In another UK study, it was found that nurses who had access to a single document for recording vital signs as well as pain scores, rather than separate charts, were more likely to assess and record a child's pain score, and when the pain tool was part of an observation chart, nurses recorded more pain scores (Simons and Moseley, 2009). These findings are in line with the Royal College of Anaesthetists' (2003) endorsement of pain as the fifth vital sign; pain intensity should be regarded as a vital sign and, along with response to treatment and side-effects, should be recorded as regularly as other vital signs such as pulse or blood pressure. In Sydney, the use of the Standard Paediatric Observation Chart promotes regular assessment of pain, and does not require a lot of extra work. Simons and Macdonald (2004) found that nurses considered the extra work of assessing and recording children's pain to be an obstacle to managing pain. The alignment of pain assessment scores with vital sign assessment in the chart may explain why pain assessment does not appear to be an issue in the management of children's pain in Sydney. The ideal is to have pain charts that nurses will use, in order to promote regular assessment of pain.

### ***8. Having all pain protocols and analgesic regimes online and user friendly***

In Sydney, the pain guidance document has been found to be the most used online document in the hospital. Such a resource has the potential to increase nurses' confidence through its ease of use, its reliability and its information on analgesics. When nurses are confident, they deliver more effective pain management (Simons and Macdonald, 2006). The support provided by this online resource may go some way to explaining the confidence noticed in all the healthcare professionals I met in Sydney. However, since the document is on the intranet, the need to access a computer may present an obstacle for nurses that may deter them from seeking the necessary information when they are already busy.

### ***9. Development of a national dataset on pain management practice***

Once the ongoing process of gathering national data from children's hospitals across Australia has been completed, benchmarks will be drawn up to standardise and promote pain management practice. The complete dataset will enable initiatives such as auditing of epidurals and the use of naloxone (Australian and New Zealand College of Anaesthetists, 2010), and facilitate an overview of the common denominators and acceptable doses. It is necessary to recognise that having the information in itself does not mean that practice will change or improve but such a database could be useful to standardise practice. In the UK, although the Royal College of Nursing (2009) and Association of Paediatric Anaesthetists (2012) have both provided comprehensive evidence based guidance on best practice in children's pain management, a number of studies have demonstrated a lack of adherence to these guidelines (Von Baeyer, 2009; Twycross and Collins, 2011). It could be suggested that the confidence of nurses needs to be increased to allow them to engage in innovative practice.

### ***10. One pain team covering acute and chronic pain***

In Sydney's children's hospitals, the pain service focuses on both acute and chronic pain and this combined approach was articulated as a strength, giving an overview of all pain. It could be suggested that acute pain services are better done separately but it is well established that mismanagement of acute pain can lead to chronic pain (Loeser and Melzack, 1999; Voskopoulos and Lema, 2010) and therefore having one service that covers both areas may enhance the knowledge base for each and lead to a more effective service. This could be particularly true for children and young people who have chronic pain with flare-ups of acute pain; in Sydney they would be seen by the same team for both. There is growing recognition that children can develop postoperative chronic pain. Fortier et al.



(2009) found that of children who had undergone general surgery, 13 per cent developed chronic pain as a result of unrelieved acute pain, and more recently Pagé et al. (2013) found that following major surgery, 22 per cent of children had developed chronic pain when followed up one year postoperatively. The potential disadvantage of such a dual focus is the workload for the pain team. The increase in workload dealing with chronic pain patients who may need follow-up for years may overwhelm the acute pain team, which is largely hospital based and usually focuses on a specific type of patient with acute pain, such as those on an analgesic infusion.

The ten innovations discussed above have varying degrees of potential to improve the management of children's pain. The next stage of Appreciative Inquiry is dissemination of the findings.

### **Dissemination (Destiny stage)**

This phase of Appreciative Inquiry, with its emphasis on 'dialoguing', involves disseminating the findings to the community of pain practitioners. Ensuring this audience is reached is a real challenge due to its multidisciplinary membership. For this reason dissemination of the findings has involved a multifaceted approach:

- The findings were communicated to each host area in the form of a scholarship report
- The Australian Council of Children's Nurses' newsletter was sent a summary of my findings
- My local Research in Child Health groups were presented with the findings
- The Travelling Paediatric Pain Club was presented with the findings and discussions took place with nurse practitioners about the most appropriate next steps towards implementation of appropriate innovations
- The findings were presented to the International Symposium on Pediatric Pain in Stockholm, in June 2013

### **Limitations of Appreciative Inquiry**

Although Appreciative Inquiry was chosen as the framework for this study due to its focus on learning from successful practice, there are recognised limitations to the process. It is possible that Appreciative Inquiry can focus so entirely on the good that it prevents a full view of a situation, which may limit the replicability of the findings. It can also feel restrictive, as if only the positive is allowed in. An Appreciative Inquiry project needs to acknowledge the difficulties and limitations experienced in pursuit of a positive outcome (Cooperrider and Whitney, 2005). In the pain teams I met, it was clear that the success each one had achieved had come at the cost of many battles for resources and required co-operation from resistant colleagues across the various hospitals visited.

### **Implications for practice**

Appreciative Inquiry is concerned with identifying what works well so that it can be repeated. In this study the innovations identified were clearly working, although mostly only anecdotal evidence was provided, and underpinning each pain team I visited was a feeling of confidence and self-belief. There was confidence that their practice was making a difference in the management of children's pain. In the Appreciative Inquiry Handbook, Cooperrider et al. (2008) state that two key questions focus on what gives life to the system and what are its possibilities. In answer to these key questions, a common factor in all the areas I visited was a feeling of confidence and being part of a team with an effective leader who had a vision that informed the team's work – that of providing the best pain management practice available for children.

The next step in the Appreciative Inquiry process is 'what should be', or as Cooperrider et al. (2008) suggest, delivering on the new ideas. One manageable innovation that could be implemented without extra resources, but would require skill on the part of a leader acting as a change agent, is the strategy used in Sweden to administer analgesia to children in pain in A&E while waiting to be seen by a doctor. To do this pain teams could work with practice development teams. Shaw (2012) suggests that practice development is aimed at changing practice to improve patient care and, while acknowledging

the potential to increase workload, that it also increases effectiveness and brings a greater focus on teamwork. The skill of a practice development team alongside the expertise of a pain team could act as a catalyst for pain management innovations. It could be suggested that such a liaison would provide nurses with the confidence and leadership witnessed in this travel scholarship, which proved so effective in implementing an array of pain management innovations for children.

### Conclusion

This travel scholarship supported by the Florence Nightingale Foundation has focused on identifying best practice in children's pain management, taking an international perspective. Appreciative Inquiry is the process that was used to focus on innovations from areas of excellence, so that this information can be shared, with the aim of promoting effective pain management more widely.

Much innovation is happening in the UK, and there are two obvious clear advantages to the UK system not found in Sweden or Australia; in the NHS nurses have to be qualified in the care of children to work with children, and pain teams in the UK are seen as an integral part of the provision of care. In Sweden, gaining recognition from the hospital board for the pain service proved a real challenge and in Sydney, securing funding and the long term future of the pain service was an issue.

By ensuring that the information is fed back through the right channels, children in the UK can benefit from the initiatives identified in this project, thereby ensuring a real impact as a result of this travel scholarship. One place to start is to consider the vision of the pain team and what support exists for effective leadership to realise that vision, which is key to the progress of a pain team.

### Key learning

- Appreciative Inquiry is a focused approach that provides a framework for identifying and learning from successful practice
- There are innovations in children's pain management that the UK can learn from Sydney and Sweden
- Confident practitioners working with effective leadership provide a backdrop for many successful innovations in practice

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**A commentary by Karen Ford follows on the next page.**



## COMMENTARY

### **An international study on innovations in the management of children's pain**

**Karen Ford**

Children have a right to adequate pain relief and to be protected from unnecessary pain, yet we know that they continue to experience unnecessary pain and practices fail to address this critical aspect of healthcare. Pain can have significant short and long term effects on children. Where once it was thought babies did not feel pain, we now understand that because of their development processes, infants and young children may in fact experience more pain sensation and pain related distress following a noxious stimulus than adults. The impact of a pain experience on a child's nervous system can result in a lowered pain threshold, meaning that subsequent painful experiences are in effect made even more painful.

Pain is stressful for children, their families and for healthcare providers. The development of effective pain management strategies presents significant challenges and despite advances in the knowledge base and available technologies, much work is still needed.

This paper offers a different perspective on prevention and management of children's pain by applying an Appreciative Inquiry (AI) approach. The work contributes to the body of knowledge in this important area. I read this paper with great interest, as children's reporting of their pain experiences and the prevention and management of children's pain are areas of my own research endeavours.

The author highlights, through an AI lens, that there are existing effective clinical practices for pain prevention and management that constitute best practice; she provides examples of good practice from three centres of excellence in different parts of the world. The diverse practices identified and described include:

- Support for postoperative pain management at home
- Multimodal analgesic approaches
- The use of distraction
- Music and touch
- Individualised pain assessment
- Communicating with children who have cognitive impairment

The use of AI processes to report on the research allows us to see how such an approach can provide a platform to further develop and improve practice.

My opening contextual comments about children's pain focused on the negative or deficit aspects: the problems and the gaps, the work that needs to be done and the continuing harm to children when their pain is poorly managed. Yet on reflection (reflections triggered by this paper about innovations in the management of children's pain), I am led to recall children's stories of positive experiences, where they talked to me about how the nurse or doctor (or play leader, clown doctor or other professional) helped them through their (potential or actual) painful experiences. I am also reminded of the expertise, commitment and efforts of nurses and other healthcare professionals from my own workplace, who

do effective work to prevent, alleviate and manage children's pain. These are instances of effective practice where those involved have provided high quality, evidence based care that is child-centred. It makes me ask: 'What is it that makes the difference?' Indeed, using an AI frame, questions for practice might be around possibilities, appreciating and valuing the best of what is, envisioning a future of what might be, and talking about and creating what will be. In AI, imagination and innovation are essential.

One of the criticisms of AI is the risk of a Pollyanna-type view that fails to consider problems associated with the issue of concern. However, an AI approach recognises problems as just one part of the story and not the central focus. By choosing a path that shifts away from a negative and deficit view, AI offers a powerful route to inquiry and practice change. As Peterson suggests:

*'If you go looking for what's broken, you will find lots of broken stuff. If you look for what's working, you will find that most things are. What you focus on grows and expands'* (cited in Dewar, 2010, p 290).

Walsh, FitzGerald and Moss (2006) highlight the energy that can emanate from recognising strengths in clinical practice and within teams. Through an AI frame, analysis of evidence that reflects good care can lead to a much deeper understanding of what works well and why it works; this understanding can then spread to other areas of practice. Exploring those things that work well in children's pain management can inform future developments and further improve the experiences of children and their families. The author clearly demonstrates this possibility of practice improvement through the research outlined in this paper. In addition, AI can provide teams with a way to explore practices within their own local context. By self-identifying strengths and effective strategies in use, a team can build confidence and capacity, and make changes relevant to the practice setting – what works in one setting may not always be transferable to another, for many reasons including physical context, resources and patient groups. What remains constant is that AI presents a potential way for teams to work together to provide effective care.

The paper has also led me to consider the many commonalities that exist between AI and practice development. Concepts such as values, relationships and person-centredness; the use of language; of collaboration, participation, empowerment and engagement; of creativity and sustainable change underpin both approaches. The synergies that exist between AI and practice development present real opportunities for improvement to many areas of practice.

The author identifies ways in which improvements in the management of children's pain have been progressed and claims the innovations and effective practices identified can improve pain management practices in the UK. However, this work has the potential to influence and improve practice in settings beyond the UK. Just as the author has identified best practice close to home and in faraway places, practitioners who care for children in other parts of the world (yes, even as far away as Tasmania!) can identify practices that may inform or have application in their own settings. This is enabled by dissemination of evidence in an international forum, such as this journal.

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