Assessing Pain: What every clinician needs to know

Pain Assessment Types & Prevalence
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Definitions of Pain
- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage
  [IASP, 1979, 1994]
- Pain is whatever the experiencing person says it is, existing whenever he says it does
  [McCaffery, 1968, 1999]

Types of Pain:
Acute Pain versus Chronic Pain
- Acute pain
  - Time limited
  - Cause often known
  - Diminishes as healing takes place
  - Tissue damage usually evident
  - Sympathetic response evident
  - May increase the risk of developing persistent pain
- Persistent Pain
  - Lasts longer than associated injury or unrelated to injury
  - Tissue damage may not be evident
  - Unpredictable
  - Cause may be unknown
  - Sympathetic response not usually evident

Many patients will have mixed pain mechanisms and problems

Types of Pain: Nociceptive Pain
also termed “normal” or “physiologic” or “inflammatory”

Somatic
- Well-localized
- Aching, throbbing, gnawing
- Activation of nociceptors in cutaneous and deep tissues
- Bone mets, soft tissue injury

Visceral
- Poorly localized
- Deep aching, cramping, pressure, referred
- Activation of nociceptors resulting from stretch, distention, or inflammation
- Bowel obstruction, biliary colic

Types of Pain: Neuropathic Pain
also termed “abnormal” or “pathophysiologic”

- Pain that is initiated or caused by a primary lesion or dysfunction of the nervous system
- May include both positive and negative sensory and motor signs and symptoms
- No single symptom is diagnostic. High degree of interpatient variability in presentation
- Three symptoms are significant predictors
  - Tingling
  - Numbness
  - Pain with normal touch
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Neuronal Plasticity

- Nociceptive system is not “hard wired”
- Changes can take place following injury or inflammation
  - in periphery, spinal cord, also in higher centers
  - may contribute to the development of chronic pain syndromes
- May lead to abnormal responses to stimulation
  - hyperalgesia – exaggerated response to painful stimulus
  - allodynia – pain due to a stimulus not normally painful

Nociception

- Release of Neurotransmitters: bradykinin, prostaglandins etc.
- Substance P
- Glutamate
- Endogenous Opioids Released
- Serotonin & Norepinephrine Reuptake Inhibited
- Transection
- Transmission
- Perception
- Modulation

INJURY

Mechanical
Thermal
Chemical

Pain !

TRANSDUCTION

TRANSMISSION

PERCEPTION

MODULATION

Multi-dimensional Effects of Unrelieved Pain

- Physiologic effects
- Psychosocial effects
- Functional deficits
- Quality of life
- Spiritual/existential effects
- Economic effects

Addressing Pain = Basic Care

- Evidence based guidelines
  - Core competency for all clinical care
  - The Joint Commission
  - Pain assessment & management is a patient right
  - www.hospitalcompare.hhs.gov
- Laws and regulations
  - “Duty to effectively assess and manage pain as well as preventing abuse and diversion”
  - “Failing to treat pain brushes perilously close to intentionally inflicting it”

Evidence-based Guidelines: Pain

- American Pain Society Guidelines
  - Use of analgesics, 2016
  - Arthritis pain, 2002
  - Cancer pain
  - Muscle Pain, 1999
  - Rheumatollogia, 2003
- American Geriatrics Society Guideline
  - Management of non-cancer pain in older adults, JAGS, 2002
  - Pharmacologic management of persistent non-cancer pain, 2008
- Intern Assoc for the Study of Pain (IASP)
  - An interdisciplinary expert consensus statement on assessment of pain in older persons, JAGS, 2002
  - An interdisciplinary expert consensus statement on pain in older persons, JAGS, 2002
- American Academy of Pain Medicine and American Pain Society
  - Practice guidelines for opioid therapy in chronic non-cancer pain
  - J Pain, 2010, 11(2)
- Centers for Disease Control & Prevention
  - Guidelines for chronic non-cancer pain
  - J Pain, 2010, 11(2)

Evidence Based Principles for Pain Management

- Accept patient self-report as the gold standard
- Systematic assessment and reassessment is required
- Individualize care
- Combine medications with nondrug interventions in an order that manages pain effectively
- Adjust medications to individual response
- Reassess routinely to evaluate & document the effect of interventions
- Communicate the plan to others
- Identify and deal with barriers
- Continue to improve via a quality improvement process
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Practice Guidelines for Acute Pain Mgt. in the Perioperative Setting.
- Institutional policies and procedures for peri-operative pain management
- Education and training of all health care providers
- Monitor patient outcomes & system-wide outcomes
- Document monitoring activities
- 24 hour availability of anesthesiologist knowledgeable about peri-operative pain management
- Use standardized, validated instruments for assessment and documentation
- Combine non-pharmacologic interventions and medications
- Use multi-modal analgesia
- Minimize analgesia gaps in ordering, administration & transfer of responsibility

ASA Guidelines (cont’d)
- Pre-op Patient Preparation
  - Continue “at home” meds whose cessation would precipitate withdrawal syndromes
  - Treat to decrease pre-existing pain and anxiety
  - Pre-medicate before surgery as part of multi-modal analgesia
  - Patient/family education including their role in reporting pain and in using non-pharmacologic strategies
- Peri-operative techniques: multi-modal therapies
  - Central and regional opioid analgesics
  - Systemic opioid PCA
  - Peripheral regional techniques
  - CAUTION – increased risk for opioid-naive and continuous infusion
  - Critically ill – consider analgesic trial with increased BP, HR, agitation

What Should Someone Look Like?

Individual Responses
- Physiologic differences
  - Endorphins, enkephalins
  - Response to individual medications
  - Polymorphisms
  - Presence of chronic pain
  - Overall response to painful stimuli and to individual medications
- Spiritual/existential
  - Beliefs, values
  - Views of pain
- Psychosocial
  - Previous experiences
  - Fear, anxiety, depression, sleep, disturbances, fatigue etc.
  - Family support
- Cultural
  - Values, beliefs, expectations
  - Experiences
  - Pain expression
  - Response to medications
  - Willingness to try interventions

Genetic polymorphisms
- P450 enzymes = metabolism in liver
- Many subtypes
- Cytochrome CYP2D6 important in drug metabolism
  - Absent in 7-10% Caucasians, 1-4% of African Americans
  - “poor metabolizers”
  - Unable to transform codeine to morphine
    - Will have little therapeutic effect
  - Subject to drug side effects
  - NOT malingeringers

What We Know
- Each person responds differently to pain
- Each person responds differently to individual medications
- Cultural differences are important
- Differences are wide, variable & unpredictable
  - You can’t tell by looking!
  - Multi-modal approaches are necessary
  - Prevention is key

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Key Points:
- In order to account for individual differences:
  - Complete a comprehensive assessment
  - Base the plan on assessment information
  - Establish a timeframe AND PROCESS to reassess and evaluate effectiveness of the plan and revise as needed
  - Use multi-modal approaches to pain relief

Expect wide variations even when pain is similar

Clinical Process: Pain

Screening with goal

Reassess for effectiveness

Developing a plan

Implementing the plan

Screening, assessment, re-assessment... the only way to know

Which Rating Scale?

0-10 Numeric Rating Scale

Verbal Descriptor Scale

0 None
1 Mild
2 Moderate
3 Severe

Faces Pain Scale-R

Iowa Pain Thermometer

- Most intense imaginable
- Very severe pain
- Severe pain
- Moderate pain
- Mild pain
- Slight pain
- No pain

Pain Intensity Rating Scales

- Measure intensity only
- Fast, simple to use
- Facilitate tracking over time
- Are not a complete assessment
- Must be followed by comprehensive assessment when pain is present

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Pediatric Pain Challenges

- Children are not always able to report the location and degree of pain because of their chronological age (infant or toddler) or because of cognitive impairment that limits verbal expression.
- Reliable and valid pain assessment tools used at Baystate:
  - NIPS – Neonatal Infant Pain Scale
  - FLACC
  - Faces Pain Scale

Neonatal Infant Pain Scale (NIPS)

- Use in both full term and pre-term infants ages birth to one year
  1. Facial expression
  2. Cry
  3. Breathing patterns
  4. Arms
  5. Legs
  6. State of arousal

An adaptation of the original NIPs. Used at Baystate Medical Center

P Pain Level

<table>
<thead>
<tr>
<th>Pain Level</th>
<th>Potential Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 = mild to no pain</td>
<td>None required</td>
</tr>
<tr>
<td>3-4 = mild to moderate pain</td>
<td>Non-pharmacological intervention with a reassessment in 30 minutes</td>
</tr>
<tr>
<td>&gt;4 = severe pain</td>
<td>Non-pharmacological intervention and possibly a pharmacological intervention with reassessment in 30 minutes</td>
</tr>
</tbody>
</table>

Each behavioral indicator is scored with 0 or 1 except "cry", which has three possible descriptors therefore, being scored with a 0, 1 or 2.
Total pain scores range from 0-7.

Premature Infant Pain Profile

<table>
<thead>
<tr>
<th>P Scale</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational Age</td>
<td>≥ 36 weeks</td>
<td>32-35 weeks</td>
<td>28-31 weeks</td>
<td>≤ 28 weeks</td>
</tr>
<tr>
<td>Behavioral State</td>
<td>Active/Awake</td>
<td>Quiet/Awake</td>
<td>Active/Sleep</td>
<td>Quiet/Sleep</td>
</tr>
<tr>
<td>HR</td>
<td>0-4 beats/minute</td>
<td>5-14 beats/minute</td>
<td>15-24 beats/minute</td>
<td>≥ 25 Beats/minute</td>
</tr>
<tr>
<td>O2 Sats</td>
<td>Decrease</td>
<td>Decrease</td>
<td>Decrease</td>
<td>Decrease</td>
</tr>
<tr>
<td>Brow Bulge</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
<td>Maximum</td>
</tr>
<tr>
<td>Eye Squeeze</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
<td>Maximum</td>
</tr>
<tr>
<td>Nasolabial Furrow</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
<td>Maximum</td>
</tr>
</tbody>
</table>

Retrieved from www.dnbpediatrics.com

FLACC scale

Markel et al., 1997

An observational tool for non-verbal children ages 2 months to 7 years

<table>
<thead>
<tr>
<th>FLACC scale</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crying</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
</tr>
<tr>
<td>Activity</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sleep</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
</tr>
<tr>
<td>Comfortability</td>
<td>None</td>
<td>Minimum</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Each of the five categories (0: None; 1: Legs; 2: Activity; 3: Crying; 4: Comfort) is scored from 0-2, which results in a total score between 0 and 10.
Assessing Pain:
What every clinician needs to know

**Assessment is a PROCESS... not just a number on a rating scale**

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**FLACC Pain Level and Treatment**

<table>
<thead>
<tr>
<th>FLACC Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>Relaxed and comfortable&lt;br&gt;No intervention needed&lt;br&gt;Continue age appropriate support of patient</td>
</tr>
<tr>
<td>1-3</td>
<td>Mild discomfort&lt;br&gt;Utilize age appropriate distraction</td>
</tr>
<tr>
<td>4-6</td>
<td>Moderate pain&lt;br&gt;Utilize pharmacological pain relief, reassess in 30 minutes</td>
</tr>
<tr>
<td>7-10</td>
<td>Severe discomfort or pain or both&lt;br&gt;Utilize pharmacological pain relief, reassess in 30 minutes</td>
</tr>
</tbody>
</table>

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**Mini assessment:**
Minimum questions– verbal patients

- Do you have pain or discomfort?
- Onset
- Location
- Duration
- Quality
- Intensity – uni-dimensional scale
- Exacerbating & alleviating factors
- Effects on the person

**Assessment:**
Ask Detailed Questions About...

- Pain
- Relief
- Effects of pain on the person
  - ADLs, Function, Psychosocial factors
- The person
  - Support systems, risks, etoh, drugs
- Response to treatment
- Progress toward goals
- History & P/E, diagnostics/labs as needed
- Patient’s experience

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**Assess GOAL for Relief**

- Patient determined with provider
  - Scale
  - Function
- Measure progress in reaching goal
- Reaching goal = + outcome
- Evaluate treatment plan’s success

**Physical Exam**

- Look for a cause of pain, if possible
  - Observe the site for inflammation or infection
  - Note rebound or referred pain
  - Palpate for trigger points
  - Observe effects of weight bearing
  - Note skin color, warmth, irritation, integrity
- Look for de-conditioning with persistent pain
- Watch the person move
  - Notice gait changes or other abnormalities
- Look for subtle changes in behavior or function

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Pre-operative Assessment
- Discuss and develop pain management plans at first point of contact
  - Begin at pre-op visit whenever possible
- Obtain baseline pain history
- Educate patients about assessment methods and importance of preventing pain whenever possible
  - Select and teach the pain intensity rating scale
- Educate patients about their responsibilities and treatment options
- Document preferred assessment tools and goals for pain care

Unrelieved Pain: The Mandate

Patient has pain
- Plan of care developed
- Medications used in correct dose & interval
- Non-pharmacologic interventions used per plan
- Self care strategies used

Pain relief goals not being met
ACTION REQUIRED NOW

Medication Reconciliation
- On pain medications at admission?
  - Evaluate effectiveness
  - Continue to provide pain medication and prevent withdrawal syndrome
  - Use what has worked before
- At discharge
  - Did you eliminate the source of pain?
  - If no, look at medication reconciliation to see what worked
  - Discharge on medications that address unrelieved pain

Your patient is an 82 year old woman with Alzheimer’s dementia with a history of diabetes, OA and CHF. Over the past 72 hours, she has been restless, pacing and refusing care. She strikes out and yells when transferred or approached for care. Today, she refuses to move. Her family says, “That’s just her.”

- On assessment, her lungs are clear, no shortness of breath, she had a bowel movement last shift, urine is clear and glucose is WNL.
- Orders include acetaminophen 325-650 PRN q6h
- How will you assess this person?
- What are your recommendations for treatment?

Pain assessment in the non-verbal person

With dementia
- Assess ability to provide verbal reports of pain...make no assumptions based on diagnosis
- Behavioral problem?
- Think “pain” before “psychosis”
- Use analgesics before anti-psychotics

In acute care
- APP (assume pain present)
- Watch for pain behaviors

Advanced Dementia
- No evidence that peripheral nociceptor responses or pain transmission are impaired in dementia (sensory threshold)
- CNS changes may influence/diminish interpretation of pain transmission (affective response)
- Assume pain prevalence and severity are the same as in cognitively intact older adults

ASPMN Task Force, 2011; Karp et al., 2006; Kunz et al., 2009
Assessing Pain:
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He/she’s a….
- Screamer
- Hitter
- Biter
- Moaner
- Attention seeker
- Swearer

Think:
Is “discomfort” a possibility?

Assessment Hierarchy:
Critically ill, sedated, nonverbal, and/or cognitively impaired
1. Obtain self-report, when possible
2. Search for a potential cause
   - Conditions/diagnoses/procedures that usually cause pain
   - Trauma, blood draws, suctioning, positioning
3. Observe behaviors
   - Select an appropriate behavioral assessment tool
   - “She/he’s a hitter, biter, screamer…”
   - Facial expressions, grimacing, frowning, wincing
4. Proxy reporting – pain & activity changes
5. Attempt an analgesic trial

“Do you have pain? Are you hurting anywhere?

Common Pain Behaviors in Cognitively Impaired Elderly Persons
- Facial expressions
- Verbalizations, vocalizations
- Mental status changes
- Body movements
- Changes in interpersonal interactions
- Changes in activity or routines

When they can’t use a scale or tell you if they have pain…

Use behavioral observation & understand what it shows

Detecting Discomfort in Dementia: Focus on Behaviors: www.trc.wisc.edu
Assessing Pain: What every clinician needs to know

Assessment Tools for the Cognitively Impaired

- ADD: Assessment of Discomfort in Dementia Protocol
- CNPI: Checklist of Non-Verbal Pain Indicators
- PACSLAC: Pain Assessment Scale for Seniors with Severe Dementia
- PAINAD: Pain Assessment in Advanced Dementia Scale
- DS-DAT: Discomfort Scale in Dementia of the Alzheimer Type

Checklist of Nonverbal Pain Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Expressions:</td>
<td></td>
</tr>
<tr>
<td>Moans, groans, grunts, cries, sighs, gasps, ouch</td>
<td></td>
</tr>
<tr>
<td>Vocal Expressions:</td>
<td></td>
</tr>
<tr>
<td>Sighs, yawns, that hurts, stop, that's enough</td>
<td></td>
</tr>
<tr>
<td>Facial Expression:</td>
<td></td>
</tr>
<tr>
<td>Winces, grimace, furrowed brow, tight lips/jaw</td>
<td></td>
</tr>
<tr>
<td>Bracing:</td>
<td></td>
</tr>
<tr>
<td>Shifting position, hand movements, unable to keep still</td>
<td></td>
</tr>
<tr>
<td>Rubbing:</td>
<td></td>
</tr>
<tr>
<td>Touching, holding, rubbing or massaging affected area</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 0-0-0

*Check each box if behavior observed at rest then with movement. Total each line (0-2)

PAINAD: For Patients with Dementia

- Includes five items:
  - Breathing
  - Negative vocalization
  - Facial expression
  - Body language
  - Consolability

- Patients get a 0-2 score for each behavior
- Patients can be given a score of 0-10 but numbers can't be related to mild, moderate, or severe although higher scores mean greater pain
Assessing Pain:
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Non-Verbal Ventilated/Intubated Persons
- Attempt to obtain self-report periodically
- Consider diagnoses and problems that cause pain
- Observe patient behavior
- Tools for adults
  - CPOT:
    - Critical Care Pain Observation Tool
  - BPS:
    - Behavioral Pain Scale

Behavioral Pain Scale (Payen, 2001)
Use: for the unconscious, sedated, critically ill patients

<table>
<thead>
<tr>
<th>BPS scores range from 3 (no pain) to 12 (maximum pain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial expression</td>
</tr>
<tr>
<td>Relaxed [1]</td>
</tr>
<tr>
<td>Partially tightened (e.g.: brow lowering) [2]</td>
</tr>
<tr>
<td>Fully tightened (e.g.: eyelid closing) [3]</td>
</tr>
<tr>
<td>Grimacing [4]</td>
</tr>
<tr>
<td>Upper limb movements</td>
</tr>
<tr>
<td>No movement [1]</td>
</tr>
<tr>
<td>Partially bent [2]</td>
</tr>
<tr>
<td>Fully bent with finger flexion [3]</td>
</tr>
<tr>
<td>Permanent retraction [4]</td>
</tr>
<tr>
<td>Compliance with mechanical ventilation</td>
</tr>
<tr>
<td>Tolerating movement [1]</td>
</tr>
<tr>
<td>Coughing but tolerating vent most of the time [2]</td>
</tr>
<tr>
<td>Fighting vent [3]</td>
</tr>
<tr>
<td>Unable to control ventilation [4]</td>
</tr>
</tbody>
</table>

Critical Care Pain Observation Tool

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial expression</td>
<td>No muscular tension observed, resistance of bending, bowing, or lifting, or tightening of eyelids; inability to complete requested tasks</td>
<td>0</td>
</tr>
<tr>
<td>All of the above facial movements plus vocal stiffness closed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Grimacing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Body movements</td>
<td>Does not move at all (does not increase oxygenance of pain)</td>
<td>0</td>
</tr>
<tr>
<td>SLR, rapid movements, heaving or rubbing the chest, or pulling the sheet</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>All of the above body movements plus moaning</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Half body shrugging</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Whole body shrugging</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Arms outstretched, easy ventilation</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Apprehension: twitching, ventilation, anxiety</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Seizures</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Compliance with the ventilator (intubated patients)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Alarms not attended, easy ventilation</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Verbal expression: talking, ventilation, anxiety</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Composure</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Intubation (intubated patients)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Talking in normal tone or tone</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Crying or moaning</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Crying out, sobbing</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Key Concepts for Pain Management in Children
- Involve family
- Develop a trusting relationship with child and family
- Decrease noise and light
- Work around sleep/wake patterns and try not to interrupt sleep.
- Cluster care
- Promote self-regulatory behavior - holding, grasping, sucking
- Utilize age appropriate distraction such as playing with toys, playing games, or viewing movies
- When pharmacological intervention is used be sure to reassess in 30 minutes

How to Reassess
- Reassess with the same pain intensity rating scale used for screening and assessment
  - Determine amount of relief
- Evaluate
  - Effect of medication
    - Analgesia
  - Adverse events
  - Aberrant behaviors (Passik)
  - Achievement of goals of care (Curtiss)
- Document reassessment
- Document non-pharmacologic strategies

From: The Baystate Pain Resource Team, 2016
Assessing Pain: What every clinician needs to know

Reminders
- Verbal rating scales only measure intensity
  - These scales are NOT comprehensive assessments
- Behavioral pain rating scales do NOT measure intensity
  - Behaviors increase suspicion that pain may be a problem
- Assessment is an ongoing comprehensive process that looks at the whole person

All pain management is based on individual response

COMMUNICATING WITH THE HEALTH CARE TEAM:

**ASSESSMENT IS YOUR BEST FRIEND!**

DON’T FORGET SBAR

When illness *(pain)* is seen in its context, we are struck not so much by what is common to each disease *(pain)*, but what is different in each patient

Hippocratic writings of the 5th century B.C.

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