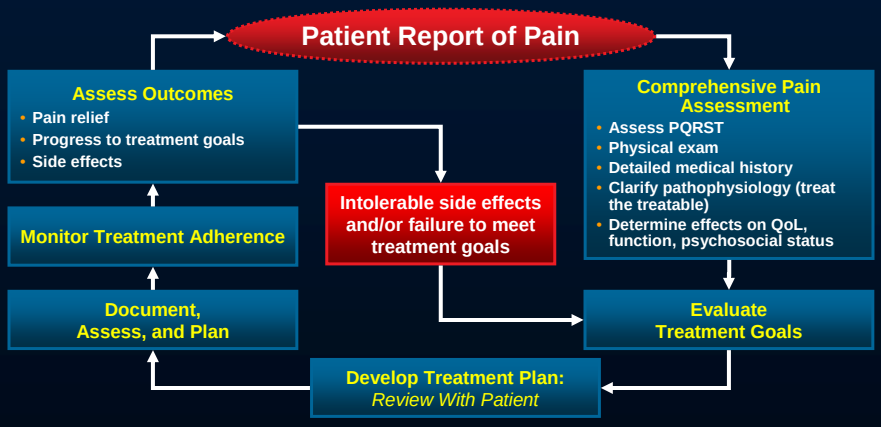
# Multidimensional Pain Assessment for Improved Outcomes




PQRST, palliative or precipitating factors, quality of pain, region of radiation of pain, severity, temporal nature of pain; QoL, quality of life.

Brunton S. *J Fam Pract*. 2004;53(10 suppl):S3-S10; National Pharmaceutical Council, Joint Commission on Accreditation of Healthcare Organizations. *Pain: Current Understanding of Assessment, Management, and Treatments*. 2001; Slaughter A, et al. *Am J Nurs*. 2002;102:75-77.

# Aberrant Opioid Use

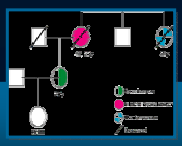
- Misuse and abuse of prescription drugs is a major problem in the United States
  - In 2006, almost 14,000 prescription opioid–related deaths
- Opioid abuse is rampant even among cancer patients
- Physicians are significant contributors to the problem
  - Unanticipated medical and mental health comorbidities, including substance use disorders
  - Belief that cancer protects individuals from aberrant medication use
  - Lack of a systematic approach to dispensing and monitoring opioids for acute and chronic pain
    - Strategies that are effective for limiting abuse are not being implemented

Starr TD, et al. *Curr Pain Headache Rep*. 2010;14:268-275; Webster LR, et al. *Pain Med*. 2011;12(suppl 2):S26-S35.

# Rational Opioid Prescribing

- Stratify patients based on risk factors related to abuse, addiction, and diversion

**Personal history of alcohol or drug abuse**



**Family history of alcohol or drug abuse**

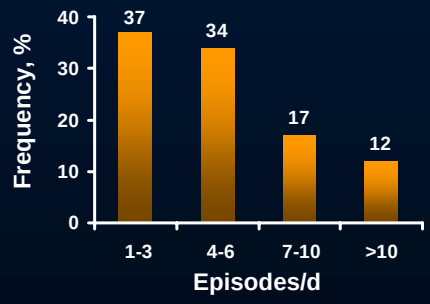
**Significant psychiatric disorders (impulsivity)**

- Consider office-based screening tools
  - ORT, SOAPP-R
- Structure therapy based on risk stratification
  - Opioid treatment agreement
  - Pill counts, smaller prescriptions, frequent follow-up
  - Prescription monitoring programs
  - Urine drug testing

ORT, Opioid Risk Tool; SOAPP-R, Screener and Opioid Assessment for Patients with Pain—Revised.
Butler SF, et al. *J Pain*. 2008;9:360-372; Webster LR, Webster RM. *Pain Med*. 2005;6:432-442.

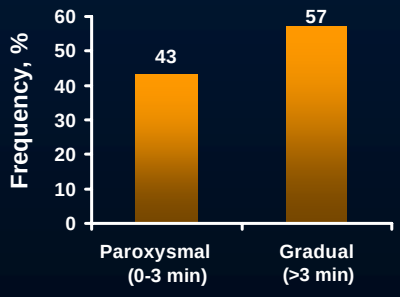
# Cancer-Related Breakthrough Pain
## *Characteristics*

**Frequency Among Patients With BTP**




**Median numbers of BTP episodes were 4[1] and 6[2]**

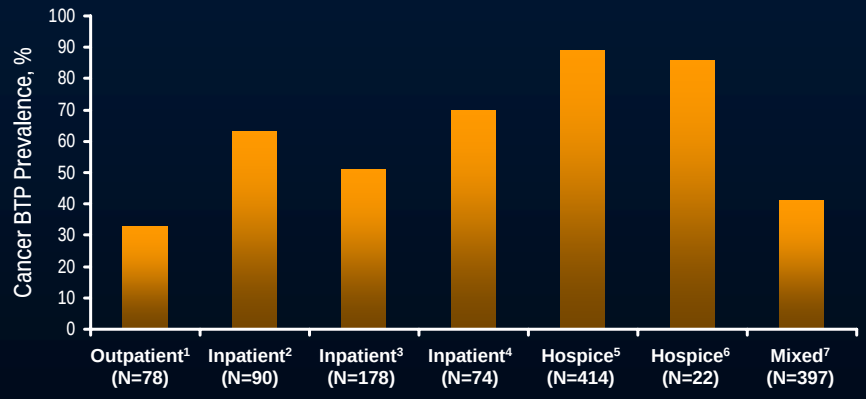
**Type of BTP Onset**




**Time to peak intensity of BTP episodes ranged from 1 second to 30 minutes (mean, 3.2 min)[2]**

1. Portenoy RK, Hagen NA. *Pain*. 1990;41:273-281.
2. Portenoy RK, et al. *Pain*. 1999;81:129-134.

# Prevalence of Cancer BTP




1. Portenoy RK, et al. *J Opioid Manag*. 2010;6:97-108; 2. Portenoy RK, Hagen NA. *Pain*. 1990;41:273-281; 3. Portenoy RK, et al. *Pain*. 1999;81:129-134; 4. Hwang SS, et al. *Pain*. 2003;101:55-64; 5. Zeppetella G, et al. *J Pain Symptom Manage*. 2000;20:87-92; 6. Fine PG, Busch MA. *J Pain Symptom Manage*. 1998;16:179-183; 7. Gómez-Batiste X, et al. *J Pain Symptom Manage*. 2002;24:45-52.

# Breakthrough Pain
## *Nosology*

- Original definition[1]
  - A transitory increase in pain to greater than moderate intensity, which occurs on a ***controlled background pain*** of moderate intensity or less, in patients receiving chronic opioid therapy
- Additional definitions
  - A transitory increase in pain that has a negative effect on function or quality of life in patients with ***adequately controlled baseline pain*** who receive analgesic drug therapy on most days[2]
  - Episodic flares of pain on a treated or untreated background pain[3]

**Consensus on a definition is lacking**

**How do you define "controlled" baseline pain?**

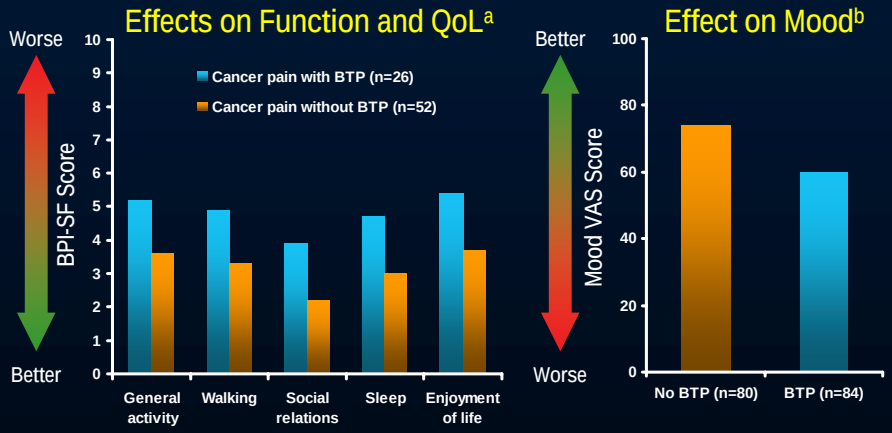
1. Portenoy RK, Hagen NA. *Pain*. 1990;41:273-281; 2. Doyle D, et al, eds. *Oxford Textbook of Palliative Medicine*. Oxford, UK: Oxford University Press; 2004; 3. Svendsen KB, et al. *Eur J Pain*. 2005;9:195-206.

# Cancer BTP Subtypes
## *Characteristics*

| Subtype | Speed of Onset | Comments | Example(s) |
|---|---|---|---|
| ***Incident, Predictable*** | *Usually rapid* | Shows consistent, temporal relationship with motor activity | *Vertebral Metastasis: Movement* |
| ***Incident, Unpredictable*** | *Usually rapid* | Shows consistent, temporal relationship with involuntary act | *Rib Metastasis, Pleura: Cough* |
| ***Idiopathic, Spontaneous*** | *Variable* | Unexpected and unrelated to provoking causes | *Partial Small Bowel Obstruction*<br>*Spontaneous Colic Pain* |
| ***End-of-Dose*** | *Gradual* | Presents before scheduled dose of ATC analgesic | *Pain After Awakening or Before Nighttime Dosing* |

ATC, around-the-clock.
Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008.

# Cancer BTP Significantly Impairs Function, QoL, and Mood




[a]*P*<0.05 for all domains; N=78. [b]*P*<0.001; N=164 cancer pain patients.
BPI-SF, Brief Pain Inventory–Modified Short Form where 0=Does not interfere and 10=Completely interferes; QoL, quality of life; VAS, visual analog scale.
Portenoy RK, et al. *Pain*. 1999;81:129-134; Portenoy RK, et al. *J Opioid Manag*. 2010;6:109-116.

# Opioid Analgesics

| Type | Characteristics | Therapeutic Setting |
|---|---|---|
| **Long-acting opioid (LAO)** | • Releases drug gradually into bloodstream or long duration of action | • Persistent cancer pain |
| **Short-acting opioid (SAO)** | • Faster increase and decrease in serum levels than LAO<br>• Limited duration of action precludes long periods of discomfort if side effects develop | • Initial dose titration for persistent cancer pain with eventual rotation to LAO<br>• Acute exacerbations of pain not attributed to inadequate dosing of ATC opioid |
| **Rapid-onset opioid (ROO)** | • All outpatient formulations use fentanyl<br>• Pharmacokinetic profile mirrors temporal pattern of BTP | • Acute exacerbations of pain not attributed to inadequate dosing of ATC opioid |

ATC, around-the-clock; NCCN, national comprehensive cancer network.
Fishbain DA, et al. *Am J Manag Care*. 2008;14(5 suppl 1):S123-S128;
Swarm R, et al. *NCCN Clinical Practice Guidelines in Oncology™ Adult Cancer Pain*. V.1.2010.

# Critical Issues for Cancer BTP Assessment

**PQRST**

- **P** alliative or precipitating factors
- **Q** uality of pain
- **R** egion of pain
- **S** everity
- **T** emporal pattern of pain

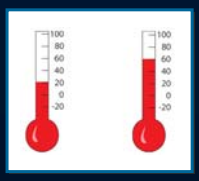
- Effects on function, including avoidance of activities
- Inferred pathophysiology and origins of the cancer pain syndrome
  - Nociceptive vs neuropathic
- Current and prior analgesic strategies (opioids and others)

Hagen NA, et al. *Curr Pain Headache Rep*. 2008;12:241-248.

# Cancer Persistent Pain and BTP
## *Nonpharmacologic Options*


Acupuncture


CBT


Heat and cold


TENS


Stretching


Relaxation


Weight reduction

CBT, cognitive behavioral therapy; TENS, transcutaneous electrical nerve stimulation.
Bennett D, et al. *Pharmacol Ther*. 2005;30:354-361; Davies AN, et al. *Eur J Pain*. 2009;13:331-338;
Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008;
McCarberg BH. *Pain Med*. 2007;8:s8-s13.

# BTP Management
## *End-of-Dose Failure*

- Treatment approaches
  - Rotate to a longer-acting agent
  - Increase dose of ATC analgesic
  - Shorten the baseline dosing interval
    - Patients on LAOs often require more frequent dosing than recommended in prescribing information

Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008;
Fishbain DA. *Am J Manag Care*. 2008;14:s123-s128; Gallagher RM, et al. *Pain Med*. 2007;8:71-74.

# BTP Management
## *Spontaneous vs Provoked Subtypes*

| BTP Subtype | Management Approach |
|---|---|
| **Predictable Precipitated/ Procedural** | • Target the pain generator<br>• Adjust baseline regimen<br>• Proactively administer an analgesic before exacerbating activity |
| **Spontaneous/ Unpredictable** | • Target the pain generator<br>• Adjust baseline regimen<br>• Rescue medication: consider PK profile of analgesic and BTP temporal profile |

PK, pharmacokinetic.
Bennett D, et al. *Pharmacol Ther*. 2005;30:354-361; Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008; Fishbain DA. *Am J Manag Care*. 2008;14 (5 suppl 1):s123-s128.

# BTP
## *Pharmacologic Options*

- Nonopioids
  - Antidepressants
  - Anticonvulsants
  - Bisphosphonates
  - NSAIDs
  - Benzodiazepines
  - Ketamine
  - Nitrous oxide
- Opioids

NSAID, nonsteroidal anti-inflammatory drug.
Bennett D, et al. *Pharmacol Ther*. 2005;30:354-361; Carr DB, et al. *Pain*. 2004;108:17-27; Davies AN, et al. *Eur J Pain*. 2009;13:331-338; Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008; McCarberg BH. *Pain Med*. 2007;8 suppl 1:s8-s13.

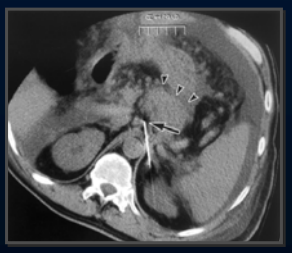
# Cancer Persistent Pain and BTP
## *Interventional Options*

**Indications**

- Pain that is poorly responsive to systemic analgesics or intolerable side effects of systemic analgesics
- Patients with short life expectancy that precludes safe titration of systemic analgesics

**Approaches**

- Neurolytic blockade
  - Lidocaine, bupivacaine, and ropivacaine commonly used
  - Longer pain relief with nerve-destroying alcohol, phenol, or glycerol
- Epidural/Intrathecal therapy
  - Intrathecal route may provide better analgesia with reduced risk
  - Morphine commonly used, but other opioids may provide better side effect profiles
- Radiofrequency lesioning
  - Continuous or pulsed electric current
  - Extend relief when nerve block is helpful but of limited duration



Chambers WA. *Br J Anaesth*. 2008;101:95-100; Cope DK, et al. *Curr Pain Headache Rep*. 2011;15:237-243; Fine PG. *The Diagnosis and Treatment of Breakthrough Pain.* 1st ed. New York, NY: Oxford University Press; 2008.

# Opioid Analgesics
## *Routes of Administration*

| Characteristic | Oral | Rectal | Intravenous | Intramuscular | Subcutaneous | ROOs[a] Transbuccal Sublingual Intranasal |
|---|---|---|---|---|---|---|
| First-pass metabolism | ++ | + | – | – | – | – |
| Bioavailability | Variable | Variable | Maximum | High | Medium to high | Medium to high |
| Onset of action, min | >30 | >30 | 5 | 10-15 | 10-15 | 5-15 |
| Invasive method | – | – | + | ++ | + | – |
| Self-administered method | + | + | – | – | + | + |

[a]Approved ROO formulations: oral transmucosal fentanyl citrate, fentanyl buccal tablet, fentanyl buccal soluble film, sublingual fentanyl, and fentanyl nasal spray.
– = negative; + = positive.
Adapted from Fine PG. *The Diagnosis and Treatment of Breakthrough Pain*. 1st ed. New York, NY: Oxford University Press; 2008; Zeppetella G. *Clin Oncol (R Coll Radiol).* 2011;23:393-398.

# Prescribing ROOs
## *Opioid-Tolerant Patients*

- Prior opioid exposure reduces the risks for respiratory depression and overdose

### Opioid-Tolerant Patients

| ***Patients taking a minimum of the following for ≥1 week*** |
|---|
| Oral morphine, 60 mg daily |
| Transdermal fentanyl, 25 µg/h |
| Oral oxycodone, 30 mg daily |
| Oral hydromorphone, 8 mg daily |
| Oxymorphone, 25 mg daily |
| Equianalgesic daily dose of another opioid |

Fine PG, et al. *Pain Med.* 2010;11:1024-1036.

# Prescribing Opioids for BTP
## *Safe Dosing and Titration*

- Titrate to predefined, realistic, and patient-specific goals
  - Ongoing clinical interviews help establish functional and QoL goals
- "Start low, go slow"
  - Recommended SAO doses for BTP are traditionally 5%-15% of daily opioid dose
  - Mixed data on the relationship between ROO and background dose
  - Neuropathic cancer pain trends towards increased ATC opioid dose
  - Older patients may require reduced fentanyl dose

**In your clinical experience, do you see a relationship between ATC and BTP doses?**

QoL, quality of life.
Cherny NI, Portenoy RK. *Cancer*. 1993;72(11 suppl):3393-3415; Hagen NA, et al. *J Palliat Med*. 2007;10:47-55; Indelicato RA, Portenoy RK. *J Clin Oncol*. 2003;21(9 suppl):87s-91s; Simpson DM, et al. *Clin Ther*. 2007;29:588-601; Zeppetella G. *Curr Opin Support Palliat Care*. 2009;3:1-6.