CA DWC 27th Annual Conference 2020

Future Tech in WC

Hold on to your hats!
Disclosures

• Bill occasionally takes a few pictures
• Dean makes documentaries with his friends
• Otherwise…No Disclosures

Notes:
– Specific products are for demonstration purposes only
  • No endorsement meant or implied.
Commentary on New Medical Technology

• New Technology = Good AND Bad
  – All new tech has potential for good
  – Can also be “weaponized”

• Costs for new technology
  – Not included in this discussion.
  – Some new tech very expensive
    • E.g., Hep-C,

• New tech has unintended consequences
  – Common with All new technology
  – Many unknown factors.
  – Costs initially high
    • typically come down with time
More Commentary on New Medical Technology

- **Regulatory hurdles**
  - Different regulatory hurdles from different countries
  - Regulators sometimes don’t understand new technology

- **Human trials can be difficult**
  - Takes significant resources to implement
A melon-seller never cries “bitter melons” nor a wine-seller “thin wine”.
EVIDENCE BASED MED APPROACH → FOR NEW TECH - WHEN DATA EXISTS

• BACK INJURIES (CHYMOPAPAIN)
• ROBOTIC SURGERY
  • FAILED PROMISES SO FAR
• LACK OF GOOD DATA ON BACK INJURY
  • HOPE IS THAT AI WILL STOP INAPPROPRIATE SURGERIES
    • BACK SURGERY: WC VS. GROUP HEALTH (NON-WC) STATS*:
      • NON-WC FUNCTION = 268% BETTER AT 2 YEARS (13.4 VS. 5)
      • NON-WC PAIN = 286% BETTER AT 2 YEARS (11.0 VS. -5.9)
• WILL AI WILL GET THINGS TO CHANGE?

RESULT

<table>
<thead>
<tr>
<th></th>
<th>Placebo</th>
<th>Chymopapain</th>
</tr>
</thead>
<tbody>
<tr>
<td>success rate</td>
<td>49</td>
<td>58</td>
</tr>
<tr>
<td>good or excellent after 72 hrs</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>good or excellent after 90 hrs</td>
<td>37</td>
<td>26</td>
</tr>
<tr>
<td>no improvement after 72 hrs</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>returned to full activity within 3 mos</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>laminectomy rate among failures</td>
<td>83</td>
<td>69</td>
</tr>
</tbody>
</table>

*LUMBAR SURGERY IN WORK-RELATED CHRONIC LOW BACK PAIN Spine. 2014; Feb 1; 14(2):263–275
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2828633/#!po=35.7143
CONCUSSION & TBI

• GOOD DIAGNOSIS → BEST TX
• THE LATEST BLOOD TESTS
  • BANYAN BTI (BRAIN TRAUMA INDICATOR)
    • CAN RULE IN OR OUT SERIOUS TBI.
    • NOT SENSITIVE ENOUGH FOR CONCUSSION.
  • ABBOTT’S I-STAT MEASURES GFAP
    • BRAIN-SPECIFIC GLIAL FIBRILLARY ACIDIC PROTEIN (GFAP)
    • DOCUMENTATION OF CONCUSSION?

FDA Approved

Abbott i-STAT

Not yet FDA Approved

BANYAN BTI

TRACK-TBI NETWORK

University of California, San Francisco

Home > The Studies > TRACK-TBI > Abbott i-STAT
TISSUE & CELL MEDICINE

- PLATELET RICH PLASMA (PRP) INJECTIONS ODG AND ACOEM DIFFER
  - BRINGS UP THE QUESTION OF EVIDENCE BASED VS NOT EVIDENCE BASES

- STEM CELL INJECTIONS
  - 600 STEM CELL CLINICS IN THE U.S.
  - UCLA: MACULAR DEGENERATION HUMAN TRIALS
  - MAYO: BONE MARROW STEM CELLS FOR OSTEOARTHRITIS

- LATEST IN MENISCUS TRANSPLANT
  - USING PIGS
ARTIFICIAL INTELLIGENCE

• MACHINE LEARNING
  • NEED FOR TIMELY AND ACCURATE DATA AND DEFINITIONS
  • BIASES ARE INHERENT IN EXISTING DATA

• IBM WATSON
  • IMPROVE LIFE EXPECTANCY
  • REDUCE MORTALITY FROM WORK RELATED ACCIDENTS

• SAFETY PROGRAMS
  • PREDICTING NATURE AND LOCATIONS OF ACCIDENTS
  • REDUCING CLAIMS FREQUENCY AND SEVERITY
ARTIFICIAL INTELLIGENCE - CLAIMS ADMINISTRATION

- TRIAGING OF NEW CLAIMS FOR DIFFERENT TRACKS
  - POST EMPLOYMENT APP FIRST NOTICE CLAIMS
- TRIAGING CLAIMS - EXAMINER ASSIGNMENT
  - BEST RESULTS BASED ON DEMOGRAPHICS
- TRIAGING CLAIMS FOR ATTORNEY ASSIGNMENT
  - BEST RESULTS BASED ON DEMOGRAPHICS & HISTORY
- AUTOMATED RESERVING
- EARLY IDENTIFICATION OF THE AT-RISK EMPLOYEE
  - E.G., CATASTROPHIC CLAIMS
- AUTOMATED MEDICARE SET-ASIDE CALCULATIONS
- REDUCED TIME OFF
- IDENTIFICATION OF FRAUD ISSUES
- PHOTOCOPY EFFICIENCIES
  - ELIMINATION OF DUPLICATE RECORDS
  - AUTOMATED SUMMARY OF MEDICAL TREATMENT
  - DIAGNOSIS FROM SUBPOENAEED RECORDS
ARTIFICIAL INTELLIGENCE - MEDICAL ISSUES

• IMPROVED PATIENT TO DOCTOR TRIAGE
• IMPROVED DIAGNOSIS
  • AI AND RADIOLOGY REVIEW
• AUTOMATED APPROVAL OF TREATMENT REQUESTS
  • SCIF, OHIO STATE FUND
• AUTOMATED PHARMACY PRESCRIPTION DETERMINATIONS
  • CONTRAINDICATIONS, ETC.
• IMPROVED CONSISTENCY AND QUALITY OF MEDICAL-LEGAL EVALUATIONS
AI - AREAS OF CONCERN
WILL ADJUSTER JOBS BE ELIMINATED?

EXAMPLE OF A FEAR-PROMPTING MOVEMENT
-PRODUCTS HAVEN’T ALWAYS BEEN SUCCESSFUL

• THE BEST EXAMPLE WAS IBM WATSON
  • WATSON POSTED NEW YORK CITY SUBWAY ADS THAT
    SCARED PEOPLE WHO THOUGHT CANCER DIAGNOSTICS AND
    TREATMENT WERE CHANGED FOREVER.
  • ADDED TO THIS WAS THE JEOPARDY APPEARANCE — AND IT
    BECAME A ‘PERFECT STORM’.
  • WATSON HEALTH SPENT $62 MILLION ON MEMORIAL SLOAN
    KETTERING, MD ANDERSON, ETC. COLLABORATIONS.
  • IT CAME CRASHING DOWN WHEN ALL REALIZED WATSON
    WAS VAPORWARE & MARKETING HYPE WAS JUST THAT—
    HYPE.
  • IN THE END, WATSON WAS PERCEIVED AS A PROBABLY
    SELFISH, UNETHICAL, AND INCOMPETENT MARKETING
    EFFORT RESULTING IN INCREASED LONG-TERM
    SKEPTICISM.
CRISPR

- INTRO
- ETHICS ISSUES
- HUMAN TRIALS STARTED IN 2019
  - CLINICAL TRIALS
    - CANCER
    - BLOOD DISORDERS
    - INHERITED BLINDNESS
- UNINTENDED CONSEQUENCES - CHINA TWINS
- HEART ATTACK VACCINE?

NEW TECH – DOCTOR IN YOUR POCKET

MedWand
(CES 2020 Innovations Award honoree)

Star Trek Tricorder
(Available Fall, 2323!)

Star Trek Tricorder
SMART CONTACT LENSES

- Medical Detection
- Project On To Retina
- Augmented Reality
- No More Movie Theaters
MANAGE PAIN WITH VR
FINAL WORDS:

• THE WC SYSTEM IS SUPPOSED TO PROVIDE QUALITY CARE

• AS THE QOC IMPROVES, THE OUTCOMES WILL IMPROVE, AND PEOPLE’S LIVES WILL BE BETTER FOR THIS.

• WE ARE HOPING THAT TECHNOLOGY WILL HELP MAKE THIS DREAM A REALITY

• WE HOPE THIS GIVES YOU A FEELING OF HOPE AND THAT THINGS CAN ONLY GET BETTER.