• EVIDENCE BASED DIGITAL REHABILITATION AND RECOVERY SOLUTIONS FOR PATIENTS

MICHAEL OBERLANDER, MD
Michael Oberlander, MD

- Double board certified in orthopedics and sports medicine
- Cofounder and president of East Bay Sports Medicine-retired
- Member editorial board/reviewer *American Journal of Sports Medicine*
- Former Editorial board/reviewer for *The Journal Arthroscopy* and *The American Journal of Orthopedics*
- Published author and speaker
- Team physician for MLS, XFL, NFL, MLL, and USA Rugby, DVC Athletics
- Inventor- US and foreign patents for surgical implants, techniques and software
- Owner Mr. Wilson’s Hot Dog Palace Boston, MA

**Disclosures:**
*American Journal of Sports Medicine*: Editorial Board Member/Reviewer 1990-present
*Trainer Rx*: Founder, President, CMO and Head Window Washer
Retired?
lying in bed at night

trying not to think about all the things
i can’t stop thinking about..
START UPS
DON’T INITIATE THIS IN YOUR 50’S
What is Trainer Rx?

A patient centric, cost effective evidence based software platform delivering digital solutions for musculoskeletal injuries
Problem

• $1T in total US spending on musculoskeletal injuries with $30B spent on rehab

• Rehabilitation is an essential element of recovery and delivery methodologies have remained stagnant

• Mandated changes in medicine from Volume to Value based reimbursement and Quantity vs. Quality of care

• Orthopaedic Surgeon's income will be tied to providing validated outcome data on patient recovery (50% by 2020)
Opportunity

- Large US TAM
  - 30% of ER visits are tied to musculoskeletal injury
  - 25% of hospital OR expenditures linked to Orthopaedics
  - $30B spent on Rehab and increasing
- 90% of musculoskeletal injuries are not referred to PT
- In-home rehabilitation is a very cost effective alternative/augmentation to PT
- Orthopaedic MDs need to collect validated outcome (PROM) data on patient recovery-no additional FTE
- Patients, providers and insurers are seeking alternative and more efficient methods of delivering healthcare
Peer Review Articles Support the Use of HEP/Tele-Rehab

Comparison of Home Versus Physical Therapy–Supervised Rehabilitation Programs After Anterior Cruciate Ligament Reconstruction

A Randomized Clinical Trial

John A. Grant, MD, PhD, Nicholas G. H. McKeag, MD, MSc, FRCSC,
Murray E. Maitland, PT, PhD, and Ronald F. Zarincke, PhD
From the 1Sport Medicine Centre, University of Calgary, Calgary, Alberta, Canada, the 2School of Physical Therapy, University of South Florida, Tampa, Florida, and the 3Faculties of Kinesiology, Medicine, and Engineering, University of Calgary, Calgary, Alberta, Canada

Effect of Inpatient Rehabilitation vs a Monitored Home-Based Program on Mobility in Patients With Total Knee Arthroplasty: The HIHO Randomized Clinical Trial

Shuihua Jiang1, Jie Xiang1, Xiuming Gao1, Kaijin Guo1 and Baohua Liu1

Formal Physical Therapy After Total Hip Arthroplasty Is Not Required: A Randomized Controlled Trial

Austin, Matthew S. MD1,2; Urbani, Brian T. BS, MS1; Fleischman, Andrew N. MD1; Fernando, Navin D. MD, FRCSC1; Purtill, James J. MD1; Hozack, William J. MD1; Parvizi, Javad MD, FRCS1; Rothman, Richard H. MD, PhD1

doi: 10.2106/JBJS.16.00674

The comparison of telerehabilitation and face-to-face rehabilitation after total knee arthroplasty: A systematic review and meta-analysis

Formal Physical Therapy After Total Hip Arthroplasty Is Not Required: A Randomized Controlled Trial

doi: 10.2106/JBJS.16.00674

Scientific Articles
Solution – Trainer Rx

- Cloud based consumer-facing software platform for treatment of musculoskeletal injuries
- Diagnosis specific, evidence based pathways (+130) deliver step-by-step guidance from injury through recovery
- Clear audio, video (+1700) and text based instructions optimized by a patent-pending system that "learns and adjusts"
- Dashboard display tracking patient compliance, achievements, goals and rewards
- 86% Net Promoter score with proven patient accountability
- Validated outcome data surveys (PROMs) are collected from patients with 100% compliance
- Home self-care instruction saves healthcare providers and staff time while minimizing mal-occurrences and readmissions

Company Confidential
Trainer Rx – What we are Building

- Dashboard display tracking patient compliance, achievements, goals and rewards
- Intuitive easy to use patient app to capture progress across key clinical and experiential areas
- Validated outcome data surveys (PROMs) are collected from patients with 100% compliance
- Diagnosis specific, evidence based pathways (+130) with step-by-step guidance from injury through recovery
- Clear audio, video (+1700) and text based instructions optimized by a patent-pending system that "learns and adjusts" (minimizes mal-occurrences and readmissions
- Cloud based consumer-facing software platform for treatment of musculoskeletal injuries

86% Net Promoter score with proven patient accountability
Patient Prescribed Pathway by Medical Professional
$45/pathway/year

Can Bill CPT Code for $40/Patient Medicare,$60 private
Rehabilitation of Musculoskeletal Injury

Pathway Diagnosis Assigned
From Pre-populated to Fully Customized Pathways
Allows MD & PTs to View Patients Accountability Between Clinical Sessions
Patient Progress Report For Provider and Therapists
Increased Patient Accountability
Interactive, Intuitive, Engaging

Anytime, Anywhere, Any Device

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Wearable Integration

- Google Fit and Health Kit in process
- Activity monitoring essential for rehabilitation and recovery after surgery
- Improved compliance tracking and focus on wellness
- Ability to validate exercise participation with heart rate data
Critical Market Segments: Impact for Workers’ Comp

- Track Worker Compliance, Engagement and Transparency
  - Cloud-based platform for tracking injured worker

- Rehabilitation of Musculoskeletal Injury
  - Cost Effective Solution to Augment Outpatient Physical Therapy
  - Preauthorized Rehab at time of first evaluation
  - Decreased number of in-clinic PT visits
  - Compliance Monitoring/Accountability – Dashboard
  - Eliminate lapses in PT between authorizations
  - Allow continued rehabilitation and recovery after PT
  - PROM data collection with analytics

- Rehabilitation Performance
  - Exercises
  - Biometric Data – Steps, Stairs, etc
Critical Market Segments:
CJR/BCPI/Global Payment

Trainer Rx Can Improve Your Bottom Line

- Improved Patient Education/Accountability/Communication
- MD-PT-Patient = all on the same page
- Self directed rehabilitation begins in doctors office prior to surgery
- HOOS, KOOS, VAS, VR-12, Press Ganey Outcome Measures

Number of directed PT sessions, need for SNF, hospital stay, return ER visits, readmissions

Patient Satisfaction, Improved Quality of Patient Care in a Cost Effective Patient Centric platform means more dollars available for the surgeon & health system

MD/Practice accept more risk and increase you’re your share of the pie
RECOVERY MADE SIMPLE

Be nice to your body

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Platform for Patients
Text Reminder for Exercise Session

GET REMINDERS

We'll help you stay on track.

Recovery is a daily commitment. Stay motivated with daily workout reminders. We promise never to share your phone number with anyone.

925 922 1707

What days do you want to receive reminders?

S  M  T  W  TH  F  S

At what times?

5  30  PM

NEXT

TODAY'S SESSION

START SESSION

Warming up for 5 - 10 minutes before your session will help your recovery.

HEEL SLIDES
ANKLE PUMPS
ACHILLES/CALF STRETCH I
GLUTEAL SETS
QUAD SET
SHORT ARC QUAD
BONUS HAMSTRING STRETCH V - SEATED
BONUS SUPINE HIP ABDUCTION/ADDUCTION
Daily Exercises Sessions

Description
An exercise intended to assist in restoring hip and/or knee range of motion.

Instructions
- Begin this exercise lying on your back (supine) with your legs straight.

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Feedback and Response System

**HOW DID IT GO?**

Your answers will help us customize your sessions.

- Easy
- Just Right
- Hard
- Painful

ADD NOTE

Back to Exercise

Only you know how much pain you’re experiencing.

Your level of pain will adjust your session. On a scale of 0–10, what was your pain level during this exercise?

0 1 2 3 4 5 6 7 8 9 10

Moderate pain (rarely)

CONTINUE

Change Exercise Feedback

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Stats Page for Patients

Recovery Performance

Last Session: 04/20/2017
Total Time: 16m

The more engaged you are with the program, the more it will change to match your specific rehabilitation needs. Keep up the great work!

April 2017

Session Notes
Patient Reported Outcome Survey

YOUR ANSWERS ARE CRITICAL

Your healthcare provider would like you to answer a series of important questions. Your responses will help your provider map your progress through recovery.

AMERICAN SHOULDER AND ELBOW SURGEONS STANDARDIZED SHOULDER ASSESSMENT (ASES)

FILL OUT NOW

Remind me later

Validated VAS (Visual Analogue Scale)

Only you know how much pain you’re experiencing.
Your level of pain will adjust your session. On a scale of 0–10, what was your pain level during this exercise?

2
Mild pain (sometimes)

CONTINUE

This weekly scale gives your healthcare provider insight into your pain level.
On a scale of 0–10, what’s your pain level this week?

0
No pain

SUBMIT
Knee Self Reported ROM

1/2
Estimate how much you can straighten your knee

1/2
Estimate how much you can straighten your knee

2/2
Estimate how far you can bend your knee

30 25 20 15 10 5 0
Less Range  More Range

30 25 20 15 10 5 0
Less Range  More Range

60 70 80 90 100 110 120
Less Range  More Range

SUBMIT
SUBMIT
SUBMIT
Graphic Display of Self Reported ROM

**KNEE FLEXION**

- Score

- Date: 09/03/2016 to 09/10/2016

**KNEE EXTENSION**

- Score

- Date: 09/03/2016 to 09/10/2016

**KNEE FLEXION**

- Result

- Date: 09/19/2016 to 03/16/2017

**KNEE EXTENSION**

- Result

- Date: 09/19/2016 to 03/16/2017

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Anterior Cruciate Ligament (ACL) Injuries

Goals of Recovery
- Identify, and where possible, eliminate pain provoking activity.
- Enhance or restore knee, hip and ankle range of motion.
- Increase flexibility of the muscles that cross the knee joint.
- Strengthen the muscles that move and help to stabilize the knee joint.
- Improve single leg stance, balance and walking mechanics as appropriate.
- Improve quality of life by decreasing pain and improving functional outcomes.

Recovery Instructions
- Avoid weight bearing if it is a contributing factor in knee osteoarthritis. If weight is a problem you confront, seek...
Educational Videos and Medical Products
Platform for Medical Professional
EHR Integration Example (Athena)
**Provider View - Patient Dashboard**

**Patient:**
- **Name:** Michael Oberlander
- **Email:** moberlander@trainer-rx.com
- **Date of Surgery:** 10/1/2023 (41 Weeks)
- **Pathway:** Shoulder, Rotator Cuff Repair, Small and Medium Tears (less than or equal to 3 cm)
- **Reminders:**
  - **Instructions:**

### Long Term Goal
- 90 mile-an-hour fastball

### Weekly Goal
- Work out 3x/wk
- Messages

### Progress
- Show Log

#### Achievements
- **Recovery Performance**
  - **Last Session:** 07/23/2016
  - **Total Time:** 55h
  - **Goals Completed:** 7

#### My Progress
- **Immediate PostOp**
  - **Duration:** 322.05
  - **Durationималь:** 10 of 14 min sessions
- **Early Recovery**
  - **Duration:** 182.09
  - **Durationimal:** 7 of 30 min sessions
- **Mid Recovery**
  - **Duration:** 718.19
  - **Durationimal:** 30 of 30 min sessions
- **Late Recovery**
  - **Duration:** 1405.63
  - **Durationimal:** 36 of 30 min sessions
- **Back in Action**
  - **Duration:** 1096.97
  - **Durationimal:** 47 of 48 min sessions

#### VAS
- 10

#### AGES
- 60
Logging PT Visits and Reviewing Exercises

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Provider View - Patient PDF Summary

**Trainer Rx**

Created: 2016-07-26

**Patient:** Michael Oberlander

**Pathway:** Shoulder, Rotator Cuff Repair, Small and Medium Tears (less than or equal to 3 cm)

**MRN:**

DOB: 1959-11-17

**Date of Injury:**

Date of Surgery: 2015-10-14

**Recovery Performance**

<table>
<thead>
<tr>
<th>Recovery Phase</th>
<th>Long Term Goal</th>
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<tbody>
<tr>
<td>First Session</td>
<td>90 mile an hour fastball</td>
</tr>
<tr>
<td>Last Session</td>
<td>Weekly Goal</td>
</tr>
<tr>
<td>Total Time</td>
<td>Work out 3x/week</td>
</tr>
</tbody>
</table>

**Sessions**

<table>
<thead>
<tr>
<th>Average Time</th>
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<tr>
<td>117</td>
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<tr>
<td>28m</td>
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**Goals Completed**

<table>
<thead>
<tr>
<th>Total Time</th>
</tr>
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<tbody>
<tr>
<td>7</td>
</tr>
<tr>
<td>54.7h</td>
</tr>
</tbody>
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**Recent Session Notes**

<table>
<thead>
<tr>
<th>Date</th>
<th>Exercise</th>
<th>Patient Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/02</td>
<td>Supine Posterior Shoulder Stretch</td>
<td>painful</td>
</tr>
<tr>
<td>03/07</td>
<td>D1 Shoulder Flexion, Supine, Banded</td>
<td>painful</td>
</tr>
<tr>
<td>03/07</td>
<td>Plank Knee to Opposite Elbow</td>
<td>painful</td>
</tr>
<tr>
<td>03/10</td>
<td>Banded Bilateral Shoulder Extension</td>
<td>painful</td>
</tr>
<tr>
<td>03/11</td>
<td>Single Arm Shoulder Extension/Scapular Retraction</td>
<td>painful</td>
</tr>
<tr>
<td>04/02</td>
<td>Plank Knee to Opposite Elbow</td>
<td>too hard</td>
</tr>
<tr>
<td>04/25</td>
<td>Standing Rows</td>
<td>skipped painful</td>
</tr>
<tr>
<td>04/29</td>
<td>90/90 Shoulder Internal Rotation with Elbow Supported</td>
<td>painful</td>
</tr>
<tr>
<td>06/14</td>
<td>90/90 Shoulder Internal Rotation with Elbow Supported</td>
<td>painful</td>
</tr>
<tr>
<td>07/07</td>
<td>90/90 Shoulder Internal Rotation with Elbow Supported</td>
<td>painful</td>
</tr>
</tbody>
</table>

**Outcome Surveys**

<table>
<thead>
<tr>
<th>VAS</th>
<th>ASES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Last Session Exercises**

**Session Length:** 23:00

**90/90 Shoulder External Rotation with Elbow Supported**

**SETS:** 3

**REPS:** 10

**TIME:** 2:30

An exercise intended to improve scapular stability with emphasis on maintaining the scapula backward.

**Notes:**

Luca Oberlander: do this exercise 3 x a day.
Practice Analytics

PATIENT SESSIONS

SESSION LENGTH

TOP PROCEDURES

KOOS PERFORMANCE
Preoperative Parameters

Preoperative Instructions:
Knee, ACL Reconstruction, BTB Autograft Pre operative Instructions

Days Prior to Surgery to Remind Patient to Review:

3

Postoperative Parameters

Mandated Early Session Length (minutes):
60

Postoperative Instructions:

WEIGHT BEARING: How much weight should I put on my leg?
- ALL OF IT. One of the great advantages is that you may start walking on the operated knee right away. If you have received a peripheral nerve block you must be non-weight-bearing on the operated leg until the block wears off.

DO I NEED TO USE CRUTCHES? FOR HOW LONG?
- Use the crutches as needed. Some patients need crutches for a few days or weeks after surgery to help support them while walking while others never use them at all. IF YOU NEED THEM USE THEM.

KNEE BRACE: Do I really need to wear this horrible, e.g., uncomfortable brace?
- Unfortunately YES. The brace is necessary in order to protect the new ligament. The brace will allow you to walk right away. The brace will be worn for up to 4 weeks after surgery. Initially the brace will be locked straight. When you are off the crutches and walking with minimal difficulty, we will then start to unlock the brace. The brace has hinges on the side that will then allow us to slowly increase the amount of bending. Once you are able to walk in the brace unlocked (i.e., FULL MOTION), we will then discontinue the brace.

ICE: How much ice and for how long?
- There is no right or wrong answer to this question. Ice simply helps with the swelling and can help to decrease pain after surgery. For the first few days after the surgery advice is "THE MORE THE BETTER." I recommend icing for approximately 30 minutes 3-5 times per day, ice as much as possible the first night and following 24 hours following surgery.

DRESSING/BANDAGE: My dressing fell off, what should I do?
- Don’t worry due to the shape of our legs this does happen. You may want to simply try to pull it back into place. If this does not work you may want to unwrap the ace wrap bandage and reapply it. If this is unsuccessful you may want to remove the dressing entirely, remembering to roll up the ace wrap, place large Band-Aids over the incisions and apply the ace wraps. PRIOR TO THIS PLEASE WASH YOUR HANDS AND DO NOT MESS WITH THE INCISIONS.

WHEN CAN I SHOWER?
- You will need to cover the dressing to keep it dry while in the shower. There are a variety of ways to do this. We suggest simply wrapping the leg with plastic wrap (i.e., Handwrap, etc.) above and below the dressing. You may also use a plastic bag with tape or a rubber band.

CAN I BEND MY KNEE?
- YES. This will cause no harm to your knee.

THE PAIN MEDICINE DOES NOT LAST LONG ENOUGH, BUT THE BOTTLE SAYS "TAKE EVERY 3-4 HOURS." CAN I TAKE IT MORE OFTEN?
Your doctor has provided important postoperative instructions to help you in your early recovery. To view them, select POST OP INSTRUCTIONS from the application menu.
**Trainer Rx – Strategic Advances**

### Distribution & Co-Marketing
- +$350M international sports/medical brace provider
- Co-Sales/Marketing/Branding Partnership
- 100 sales reps available to sell Trainer Rx
- $500K exclusivity/content investment
- Potential to expand internationally

### Distribution/Sales Channel
- Chicago based Tier 1 medical/surgical dist
- 33 states coverage and 200 sales reps
- Leading dist of Smith & Nephew & Game Ready
- Strong ties to national Workers’ Comp providers

### Clinical/EHR Workflow Integration
- Top Tier EHR Provider
- MDP (More Disruption Please) Partner
- Only Rehabilitation focused company on platform
- Free integration for Athena customers (81K) into Trainer Rx
- Use Redox on multi-platform EHR integration

### Health Information Security
- Certification in progress (July 2017)
FOOT & ANKLE

- 5th Metatarsal Fracture, Surgical, ORIF
- Achilles Tendinopathy, Nonsurgical
- Achilles Tendon Repair, Surgical
- Ankle, Arthroscopic Debridement
- Ankle, Bimalleolar or Trimalleolar Fracture, ORIF, Surgical
- Ankle, Lateral Malleolus Fracture, Surgical, ORIF
- Ankle, Lateral Malleolus Fracture, Nonsurgical
- Eversion Ankle Sprain (Grade I & II)
- Inversion Ankle Sprain (Grade I & II), Low Demand
- Inversion Ankle Sprain (Grade I & II), Athletic
- Plantar Fasciitis

KNEE

- ACL Reconstruction Allograft + Meniscus Repair, Athletic
- ACL Reconstruction Allograft + Meniscus Repair
- ACL Reconstruction, BTB Autograft + Meniscus Repair, Athletic
- ACL Reconstruction Autograft + Meniscus Repair
- ACL Reconstruction, Allograft
- ACL Reconstruction, BTB Autograft
- ACL Reconstruction, Hamstring Autograft
- ACL Tear, Nonsurgical Rehabilitation
- Knee Arthroscopy
- Knee Arthroscopy Athletic
- Knee Arthroscopy, Debridement
- Knee Arthroscopy, Debridement, Athletic
- Knee Arthroscopy, Plica Removal
- Knee Arthroscopy, Plica Removal, Athletic
- Knee Arthroscopy, Partial Meniscectomy
- Knee Arthroscopy, Partial Menisectomy, Athletic
- Knee Arthroscopy, Loose Body Removal
- Knee Arthroscopy, Loose Body Removal Athletic

LEG & THIGH

- Calf Strain, Grade I & II
- Leg, Medial Tibial Stress Syndrome ("Shin Splints"), Athletic
- Leg, Tibial Shaft Fracture, Tibial Rodding ORIF
- Thigh, Femur Fracture, Femoral Rodding, ORIF, Surgical
- Thigh, Femur Fracture, Femoral Rodding, ORIF, Surgical Athletic
- Thigh, Hamstring Strain, Grade I & II
- Thigh, Hamstring Strain, Grade I & II, PRP, Athletic
- Thigh, Hamstring Strain, Grade I & II, PRP, Intermediate

HIP

- Hip Adductor Strain (Grade I & II)
- Femoroacetabular Impingement (FAI), Labral Repair, Surgical
- Femoroacetabular Impingement (FAI), Nonsurgical
- Gluteus Medius Syndrome
| Shoulder Osteoarthritis (OA), Nonsurgical, Athletic |
| Shoulder Osteoarthritis (OA), Nonsurgical, Low Demand |
| SLAP Lesion Repair, Type II |
| Total Shoulder Arthroplasty/Hemiarthroplasty |

### Elbow

- Arthroscopic Debridement
- Arthroscopic Debridement, Athletic
- Cubital Tunnel Syndrome
- Distal Biceps Tendon Repair, Surgical
- Elbow, Lateral Epicondylitis/"Tennis Elbow", Acute
- Elbow, Lateral Epicondylitis/"Tennis Elbow", Chronic
- Elbow, Lateral Epicondylitis/"Tennis Elbow", PRP, Athletic
- Elbow, Lateral Epicondylitis/"Tennis Elbow", PRP, Intermediate
- Medial Epicondylitis/"Golfer's Elbow", Nonsurgical
- Radial Head Fracture, Nonsurgical
- Ulnar Collateral Ligament Repair, Surgical, Autogenous Gracilis Graft
- Ulnar Collateral Ligament Repair, Surgical, Palmaris Longus Graft

### Hand & Wrist

- 4th or 5th Metacarpal Fracture (Boxer's Fracture), Nonsurgical
- Scaphoid Fracture, ORIF
- Hand, Phalangeal Fracture, ORIF, Percutaneous Fixation, K-Wires, Surgical
- Hand, Phalangeal Fracture, ORIF, Percutaneous Fixation, K-Wires, Surgical
- Hand, Trigger Finger Release, Surgical
- Hand, Trigger Finger Release, Surgical, Basic
- Wrist, Arthroscopic Debridement, Surgical, Intermediate
- Wrist, Carpaltunnel Release, Surgical
- Wrist, De Quervain's Tenosynovitis, Nonsurgical
- Wrist, Distal Radius Fracture, Nonsurgical
- Wrist, Distal Radius Fracture, ORIF
- Wrist, Distal Radius Fracture, ORIF, Athletic
- Wrist Sprain
## SPINE & NECK

- Back, Lumbar Decompression-Laminectomy/Foraminotomy
- Back, Lumbar Spine, Acute, Nonsurgical
- Back, Lumbar Spine, Chronic or Subacute, Nonsurgical, Athletic
- Back, Lumbar Spine, Chronic or Subacute, Nonsurgical, Intermediate
- Back, Lumbar Spine, Extension Emphasis (Bias), Nonsurgical
- Neck, Acute Cervical Spine Sprain/Strain, Nonsurgical
- Neck, Chronic Cervical Spine Sprain/Strain, Nonsurgical
- Neck, Cervical Fusion, Surgical

## FRACTURES

- Ankle, Bi/Tri Malleolar Fracture, Surgical, ORIF
- Ankle, Lateral Malleolus Fracture, Nonsurgical
- Ankle, Lateral Malleolus Fracture, Surgical, ORIF
- Arm, Proximal Humerus Fracture, Surgical, ORIF
- Arm, Proximal Humerus Fracture, Surgical, ORIF, Athletic
- Foot, 5th Metatarsal Fracture, ORIF
- Hand, 4th or 5th Metacarpal Fracture (Boxer's Fracture), Nonsurgical
- Hip, Intertrochanteric Fracture, ORIF
- Leg, Tibial Shaft Fracture, Tibial Rodding ORIF
- Thigh, Femur Fracture, Femoral Rodding, ORIF, Athletic
- Wrist, Distal Radius Fracture, Nonsurgical
- Wrist, Distal Radius Fracture, ORIF
- Wrist, Distal Radius Fracture, ORIF, Athletic
- Wrist, Scaphoid Fracture, ORIF
6 TRAINER RX PERFORMANCE
Trainer Rx – Experiential Scale over 350K Sessions

89% of patient exercise responses are “easy” or “just right”

TRX AI engine is optimizing personalized rehab and recovery
Total Hip Arthroplasty Anterior & Posterior Approach

- Total # patients: 695
- Total number sessions performed: 4,504
- Average number of sessions per patient: 22
- Average number of days on pathway: 82 days
- Patient satisfaction: 86.74
Total Hip Arthroplasty Anterior & Posterior Approach
Total Knee Arthroplasty

- Total # patients: 157
- Total number sessions performed: 3,853
- Average number of sessions per patient: 22
- Average number of days on pathway: 71
- Patient Satisfaction: 85.13
Total Knee Arthroplasty

KOOS PERFORMANCE

KNEE EXTENSION_PERFORMANCE

KNEE FLEXION_PERFORMANCE

PATIENT SATISFACTION

PATIENT SESSIONS

SESSION LENGTH
Rotator Cuff Repair Small/Medium & Large/Massive

- Total # patients: 294
- Total number sessions performed: 6,470
- Average number of sessions per patient: 36
- Average number of days on pathway: 94
- Patient Satisfaction: 88.03
Rotator Cuff Repair Small/Medium & Large/Massive
ACL Auto and Allograft Reconstruction

- Total # patients: 344
- Total number sessions performed: 3,853
- Average number of sessions per patient: 22
- Average number of days on pathway: 82
- Patient satisfaction: 87.14
Don’t Let the Practice of Medicine Ruin the Fun

LET TRAINER RX COLLECT THE DATA FOR YOU
Bauerfeind Overview

The Bauerfeind Difference

SUPERIOR THERAPY.
EXCELLENT WEARING COMFORT.
QUALITY & FUNCTIONALITY.

Whether it is your ankles, knees, elbows, wrists, shoulders or spine that hurt, Bauerfeind premium Supports and Orthoses may help you by:

• Reducing pain and swelling
• Providing joint stability and joint control
• Restoring function and motion
• Reducing risk of injury (prevention)
• Promoting the healing process
Key Partnerships

**Brand Ambassador**
Dirk Nowitzki, Dallas Mavericks

**Professional Sports Partnerships**

**Arthritis Foundation Ease of Use program**
Come Visit Us at Booth #14 & 15

TRAINER Rx

BAUERFEIND

GRAYMONT
MEDICAL EQUIPMENT DISTRIBUTION
Inspirational Message from Shia LaBeouf
TRACKING YOUR RECOVERY
SO YOU DON’T HAVE TO

Be nice to your body

Company Confidential
City of San Francisco Workers Comp Pilot
All Injuries

1-24-17 update

- 41 patients on boarded (6 month period): 95% Engaged
  - 31 patients (10+ sessions)
  - 8 patients (2-10 sessions)
  - 2 patients (1 session-never started)

- Patient Satisfaction: 84%
- Average Total # Sessions: 59 (Range 2-232)
- Average Total Time: 34 hours (1-290 hours)
- Average Decrease VAS: 41%
- Average PROM Increase: 55%
KP ACL Pilot Summary

Results of Pilot to date (6/29/16)

• 30 Patients invited by KP MD – 90% Engaged!
  • 23 very active (77%)
  • 4 moderately engaged (13%)
  • 3 not engaged (10%)

• Patient Satisfaction Score: KP Pilot score of 79% (46% response rate)

• Average user sessions: 24 (vs. average of <2 on KP PT)

• Average VAS decreased: 71%* (4.0 to 1.2)

• Average PROM/IKDC increased: 53%* (32.8 to 50.2)

• 100% of patient reported outcome questionnaires are answered while patient is engaged

*over period of study
## Trainer Rx – Getting Down to Business

<table>
<thead>
<tr>
<th>Clinical Focus – Joint</th>
<th>ACL Reconstruction</th>
<th>Total Hip THA</th>
<th>Total Knee TKA</th>
<th>Shoulder Rotator Cuff Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ten evidenced based pathways</td>
<td>Anterior and posterior approaches</td>
<td>Arthroplasty – full range of demand</td>
<td>Cuff repair, full range of tears from large to small</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical notes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total # of patients</strong></td>
<td>250 patients</td>
<td>695 patients</td>
<td>115 patients</td>
<td>225 patients</td>
</tr>
<tr>
<td><strong>Average # of sessions</strong></td>
<td>25 sessions</td>
<td>24 sessions</td>
<td>21 sessions</td>
<td>37 sessions</td>
</tr>
<tr>
<td><strong>Average # of days on the pathway</strong></td>
<td>87 days</td>
<td>85 days</td>
<td>76 days</td>
<td>92 days</td>
</tr>
</tbody>
</table>

### Surgical Performance Baseline

- Our philosophy on clinical metrics
- Why we design from the patient’s experience in
- What we are learning
- What we think is possible through a tech enabled highly personalized model
## ASC Marketplace – Consolidation, Growth and Value

### $30bn growing to $90bn by 2030

<table>
<thead>
<tr>
<th>Flagship Procedures</th>
<th>Knee Replacements</th>
<th>Hip Replacements</th>
<th>Rotator Cuff Repair</th>
<th>ACL Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2016 annual case volumes</strong></td>
<td>700k</td>
<td>320k</td>
<td>270k</td>
<td>130k</td>
</tr>
<tr>
<td><strong>2030 projected case volumes</strong></td>
<td>3,500k</td>
<td>550k</td>
<td>750k</td>
<td>400k</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market multiple</th>
<th>5X expansion</th>
<th>1.7X expansion</th>
<th>2.8X expansion</th>
<th>3.1X expansion</th>
</tr>
</thead>
</table>

### Complication rates

- **0.39% infection rate for TKR**
- **0.97% for revisions**
- **Unplanned readmission between 4-8%**
- **0.88% infection rate for THA (revisions / dislocations)**
- **4% readmission rate**
- **4-7%**
- **~10% revision rate**
- **2.3% readmission rate**
- **6.5% revision rate**

### Anticipating Strategic Market Shifts

- **How will the shift to bundles impact quality and outcomes?**
- **What role will technology play in improving personalization and engagement?**
- **What new clinical technologies will change how we think about joint repair?**
Convergent Market Forces Reshaping the Industry

1. High deductibles force consumers to shop for value
2. Shifts in plan design reward consumer-value shopping
3. Health plan products focus on lower cost bundles
4. Consumer shopping shifts share & basis of competition
5. Consumer Health Revolution
6. Volume to Value and the Consumer
7. Tech enabled new care models fuel the migration to outpatient and home
8. New mobile apps and sensors enable always-on models and connectivity with the care team
9. Bundled payments shift the profit levers from components to packages
10. Regulation and payment models drive shifts to value

Growth hungry innovators (Optum) drive value-priced bundles

Life/Health IoT gap heightens consumer expectations

Regulation and payment models drive shifts to value
## Volume-to-Value Market Progression

<table>
<thead>
<tr>
<th>Economic Levers</th>
<th>Fee-for-Service</th>
<th>Pay-for-Performance</th>
<th>Risk-based Bundles</th>
<th>Consumer-Led</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume-based pricing</td>
<td>Volume-based pricing</td>
<td>Bundle-based pricing</td>
<td>Aligning bundle to consumer needs</td>
</tr>
<tr>
<td></td>
<td>Bill by the piece-part</td>
<td>Set performance goals (patient experience and outcomes)</td>
<td>Risk / acuity scoring</td>
<td>Competitive bundle price</td>
</tr>
<tr>
<td></td>
<td>Shadow price inpatient</td>
<td>Performance-based upside</td>
<td>Set performance goals</td>
<td>Bundle value guarantee</td>
</tr>
<tr>
<td></td>
<td>Participate in the components (JVs, etc.)</td>
<td>Bill by the piece-part</td>
<td>Bill by the risk adjusted bundle</td>
<td>Benefit / product based incentives</td>
</tr>
<tr>
<td>Market Positioning</td>
<td>Favorable payer contracts</td>
<td>Performance against goals</td>
<td>Preferred benefits and product positioning</td>
<td>Tech enabled scale</td>
</tr>
<tr>
<td></td>
<td>Brand recognition</td>
<td>Brand recognition</td>
<td>Patient experience</td>
<td>Care model innovation</td>
</tr>
<tr>
<td></td>
<td>Patient experience</td>
<td>Patient experience</td>
<td>Outcomes story</td>
<td>Patient experience</td>
</tr>
<tr>
<td></td>
<td>Outcomes story</td>
<td>Outcomes story</td>
<td>Quality of building</td>
<td>Demonstrated outcomes</td>
</tr>
<tr>
<td></td>
<td>Quality of building</td>
<td>Quality of building</td>
<td>Technology innovation</td>
<td>Brand recognition</td>
</tr>
<tr>
<td></td>
<td>Technology innovation</td>
<td>Technology innovation</td>
<td>Technology innovation</td>
<td>Quality of building</td>
</tr>
</tbody>
</table>

### Pace and Change of the Four Stage Market Model

- In what markets are the players protecting the Fee-for-Service model?
- What percentage of markets are already in Pay-for-Performance contracts?
- Which markets are piloting bundles?
- What are you doing to either hedge or bet the market model progression?
Trainer Rx – Getting Back Out There, What we are Doing

• Integrating the total patient experience across care settings
• Improving the surgical game plan through improved patient information
• Empowering the care team to QB the entire experience
• Driving dramatic improvements in outcomes
• Shattering the PT or rehab clinic-based cost structure
• Reducing nearly all the affordability and access barriers to rehab services

Trainer Rx – enabling patient-centered “return-to-life” experiences

Orthopedic surgeon office
Consultation and care management plan

Diagnostic lab
X-ray, blood work, MRI assessment

Inpatient or ASC
• Surgery suite
• Surgeon
• Anesthesia

Care team
“return-to-life” master plan

Rehab clinic-based physical therapy (if needed)

Care team personalizes “return-to-life” master care plan

Home/Mobile physical therapy

1. Patient TRX self-assessment & reporting
2. TRX personalized content helping patients understand each step from diagnosis to anesthesia, to the surgical procedure, recovery and rehab
3. Home prehab – TRX progress shared with care team
4. Surgical plan informed by TRX patient progress
5. TRX patient mobile app rehab clinic monitoring
6. TRX patient at-home app/video experience
7. TRX dynamic rehab program changes
8. TRX Multi-channel patient communication
9. TRX Data science insights engine
10. TRX patient full recovery

Connected TRX Patient Experience or Journey Map
Trainer Rx – Getting to Scale

**Beta Customers**
Proof of Concept
2015

- CALSports Orthopedics
- Webster Orthopedics
- Marin Orthopedics & Sports Medicine
- Grossmont Orthopaedic Medical Group
- Purchase Orthopedic Clinic
- Anderson Orthopedics
- Muir Orthopaedic Specialists
- Anne Arundel Medical Group

**By the Numbers**
- 75 surgeons
- 8 hospitals & ACSs
- 375k patients

---

**Early Adopters**
Clinical Economics
2016

- Kaiser Permanente
- Illinois Bone & Joint Institute
- One Medical
- Regional Medical Center
- NHS

**By the Numbers**
- 5k surgeons
- 250 hospitals & ACSs
- 20M patients

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**Contracting**
Getting to Scale
2017

- Northwestern University
- Orth Illinoiis
- OI Orthoind
- NorthShore University Health System
- Raleigh Orthopaedic

**By the Numbers**
- 150 surgeons
- 15 hospitals & ACSs
- 750k patients
### Trainer Rx – Triple Play on Value

#### Provider

1. **Service extension/advantage:** Augments rehab-clinic based care with intuitive at-home personalized solution – reducing affordability and access barriers
2. **Consumer satisfaction:** Ease of use, clear concise educational material and care pathway while measuring patient satisfaction via standardized questionnaire – NPS of 88
3. **Quality:** Achieves high patient engagement and shared decision making
4. **Value added service to surgeons:** Ability to collect outcome data on all patients, deliver evidenced based rehabilitation protocols, incorporate peri-operative information
5. **Health plan payment/network:** Exceeds merit based pay goals, incorporates technology into practice, encourages health plan steerage and facilitates bundle integration
6. **Roadmap:** Positions for bundles – gives provider better control of outcomes with analytics valuable for marketing

#### Health Plan

1. **Disruption:** Works with clinic-based PT
2. **Cost:** Lowers cost of rehabilitation, decrease ED visits and hospital admissions related to misinformation, document patient review of essential material (patient log)
3. **Quality and Outcomes:** Collect and deliver analytics on outcomes
4. **Engagement:** Measured with improved participation, warning system to risk manage, track Workers' Comp patients
5. **Bundles:** Enables health plans to bundle performance to physicians and centers of excellence
6. **Insights:** Informs and improves personalized care plans
7. **Customer satisfaction:** Very favorable NPS, survey incorporation

#### Consumer

1. **Satisfaction:** Improves the patient experience: Removes barriers to access with diagnosis specific personalized care pathway
2. **Affordability:** Lowers the cost of evidence-based rehabilitation; minimizes time lost from work and school
3. **Availability:** Works at home-anywhere, anytime, on any device
4. **Safety/Risk:** Time based delivery of appropriate home and self-care, notification of high pain levels and disengagement
5. **Connected:** Improved communication with health care provider and patient (MD-RN-PT-Patient); Creates a support group
6. **Empowerment:** Education on Dx and treatment, home self-care, anesthesia, pre and post op Instructions/precautions and orders, improves shared decision making
# Knee Arthroscopy, Partial Meniscectomy (+Athletic)

- Total # patients: 171
- Total number sessions performed: 2,804
- Average number of sessions per patient: 16
- Average number of days on pathway: 79
- Patient Satisfaction: 89.10
Knee Arthroscopy, Partial Meniscectomy (+Athletic)

KNEE EXTENSION PERFORMANCE

KNEE FLEXION PERFORMANCE

LYSHOLM PERFORMANCE

PATIENT AGE

VAS PERFORMANCE

PATIENT SATISFACTION