



Comprehensive Assessment of an Evidence-Based Course Intervention **(EBJIC)** on Orthopaedic Surgeons' Knowledge, Attitudes, and Practices in Chronic Post-Traumatic Osteomyelitis Management

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37-Item

Validated KAP survey instrument utilized across six clinical domains.

The 6 structural pillars used to build a complete clinical profile.



Final Cohort Secured

N = 302

Exceeded minimum sample size to increase overall study power and geographical diversity.



Demographics Dashboard



The Critical Context Metric



77.2% of respondents handle only 0 to 5 bone infection cases per month.

Insight Tag: Clinical Context: Chronic osteomyelitis is not a routine daily caseload for the majority, serving as a foundational context for the observed knowledge gaps.



Knowledge Dashboard: The Diagnostic Hit & Miss

Clinical Icon	Topic	Correct Answer & Percentage	Result Icon
	Pathogen Identification	<i>S. aureus</i> (78.8%) (14.9% confused species with resistance, selecting MRSA).	✓
	Primary Risk Factor	Surgery / Trauma (40.7%) (>50% incorrectly selected systemic hematogenous factors like diabetes).	✗
	Clinical Confirmatory Signs	Identified ≥ 2 key signs (71.5%)	✓
	Diagnostic Imaging	MRI or PET-CT (68.9%) (15.9% dangerously selected low-sensitivity CT or X-ray).	⚠
	Confirmatory Procedure	Open deep tissue cultures (79.8%)	✓

Overall Score:
53.0%
scored 3 or below
(out of 5)



Practice Realities: Alignment vs. Divergence

Adherence to Gold Standards

- Aggressive Debridement:** 85.7% appropriately prioritize surgical debridement.
- Tissue Culture Mandate:** 81.1% recognize deep tissue cultures are mandatory.
- Antibiotic Stewardship:** 76.5% correctly utilize an antibiotic holiday before elective surgery.
- Graft Avoidance:** 81.1% correctly avoid simultaneous autologous bone grafts in contaminated fields.

Systemic Clinical Blindspots

- The Biofilm Gap:** 88.7% either lack access to biofilm degradation methods (44.7%) or do not know about them (44.0%).
- Sinus Tract Reliance:** 33.4% rely on sinus tract cultures (plus 28.1% unsure), despite documented poor correlation with deep pathogens.
- MDT Underutilization:** Only 59.6% consistently involve Multidisciplinary Teams (MDT).



The "Aha!" Moment: The Dunning-Kruger Reveal

The Competence Disconnect

Baseline 65.9% of the cohort (N=199) reported feeling "Confident" in managing chronic osteomyelitis.

17.6%

had objectively poor knowledge scores (0-2/5).

36.2%

selected suboptimal diagnostic imaging (CT/X-ray) that would lead to missed diagnoses.

54.3%

failed to identify the primary risk factor, incorrectly choosing hematogenous risk factors.

Statistical Anchor: There was no statistically significant difference in knowledge scores across confidence groups (Kruskal-Wallis $H = 4.010$, $p = 0.135$).

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Day 1: Fracture-related infection (FRI)

Registration

Introduction (Why are we here?)

Session (1):

Prevent & Understand

- New advances in the management of fracture-related infection
- Fracture-related infection (two-stage treatment)
- Knocking on ajar doors: Orthopaedic Infection Challenges
- Biofilm: Life cycle and impact on BII
- Antibiotic Prophylaxis in Orthopaedic Surgery

Session (2):

Diagnose & Debride

- FRI consensus of diagnosis
- Radiological tools in FRI diagnosis
- Golden rules of Microbiology in FRI
- Soft tissue consideration and options in Fracture-related infection
- Early postoperative infection: How to manage
- Surgical Debridement
- Case-Based Discussion

Case-Based Discussion (Participants)

Session (3):

Plan & Reconstruct

- Use of internal fixation after FRI
- Induced membrane technique
- Longitudinal bone transport
- Vascularized fibular graft
- Bone Builders & Bug Killers: The Dual Power of Calcium Sulphate Carriers
- Navigating Culture Results in the Era of Resistance
- Ortho-ID: The Essential Partnership

Case-Based Discussion by the Faculty

Practical Workshops

Day 2: Pediatric Bone & Joint Infection - Infected Charcot Arthropathy

Day (1) Rewind

Session (1):

Pediatric Bone & Joint Infection

- Septic Joint (SA)
- Acute Osteomyelitis (OM)
- Chronic Osteomyelitis (COM)
- Subacute Osteomyelitis
- Bone and Joint Infection in Neonates (don't miss)
- Neglected Septic Epiphysitis (NSE)

Case-Based Discussion by the faculty

Session (2):

Infected Charcot Arthropathy (Understand)

- Practice Essentials & Epidemiology
- The infected charcot ankle: a limb-threatening crisis
- Risk factors & the portals of infection
- Imaging studies of infected Charcot ankle
- Multidisciplinary approach and Laboratory workup
- Antibiotic management, Immobilization and offloading

Session (3):

Infected Charcot Arthropathy (Management)

- Pre-surgical requirements
- Surgical debridement
- Stabilization of the limb
- Soft tissue reconstruction in Infected Charcot
- Recurrence of infection
- Nonunion
- Amputation is not a failure

Case-Based Discussion by the faculty

Practical Workshops

Day 3: Periprosthetic Joint Infection

Day (2) Rewind

Session (1):

Periprosthetic Joint Infection (PJI): The Problem

- PJI: Do we have a problem?
- ICM: What happened in Istanbul?
- Prevention of PJI/SSI: Strategies that work!
- Microbiological and laboratory Diagnosis
- Osteomyelitis: Bane of our existence

International Consensus Meeting 2025 Questions and Discussion

- ICM questions and discussions
- Predisposing factors
- Diagnosis & Clinical picture
- Single stage
- 2 stage

Session (2):

PJI: The Treatment

- Antimicrobial Therapy: How do we choose and for how long?
- Do local antimicrobials work?
- Can we fight infection while building bone? (Symposium)
- Spacers (Symposium)
- Does DAIR work?
- One stage exchange: Where do we stand?
- Two stage exchange: Still the Gold Standard?
- Case Presentations

Session (3):

PJI: Complex Cases and Questions

- Surgical Treatment of PJI: Polymicrobial
- Surgical Treatment of Fungal PJI
- Surgical Treatment of Multiresistant PJI
- PJI: What is on the Horizon?
- Questions from Audience and COMPLEX SITUATIONS

EBJIC 2025

Egyptian Bone & Joint Infection Course

Under Patronage of

Course President
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Benha University

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22 Hours
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Triumph Plaza Hotel
Cairo - Egypt

17 - 18 - 19 December 2025





Pillar 1: The Psychological Shift



This is evidence-based confidence built upon measurable knowledge gains and enhanced understanding of treatment options, directly leading to faster treatment initiation.



Pillar 2: Eradicating the Fatal Diagnostic Error

Pre-Course

49.3% relied on Sinus Tract Discharge Culture.



Misidentification of pathogens, inappropriate antibiotics, prolonged treatment failure due to skin flora contamination.

Post-Course

100% of participants correctly reject sinus cultures post-course. Universal shift to Open Deep Tissue Cultures (surgical).



93.9% now obtain deep tissue cultures with adequate sampling (≥ 3 specimens). ($p < 0.001$).



Pillar 3: From Hesitation to Decisive Action

Frequency of Surgical Intervention Recommendations



Key Insight Callout

80% Reduction in Under-treatment Patterns.

Key Insight Callout

The uncertain "Sometimes" response was completely eliminated (4.9% → 0%).

Clinical Impact: Prevents delayed surgical intervention and reduces prolonged, ineffective antibiotic-only approaches. Surgery is now correctly recognized as the cornerstone of CPTO management.



Pillar 4: Shattering the Clinical Silo



"Always" involve a multidisciplinary team nearly doubled: **24.6% → 48.5%** ($p=0.009$).

Combined "Always + Often" regular team involvement reached **88%**.

Isolated Practice Eliminated. The dangerous "Rarely/Never" category dropped from 12% to absolute zero. This represents a fundamental paradigm shift in Middle Eastern organizational practice patterns.



Pillar 5: Institutionalizing the Specialist Referral

Infectious Disease



"Always" refer
doubled (14.8%
(14.8% → 33.3%,
 $p=0.029$).

Ensures optimal antibiotic selection, correct duration, and critical antimicrobial stewardship to prevent resistance.

Plastic Surgery



"Always" refer
increased 2.5-fold
(9.8% → 24.2%).

Represents emerging recognition of the absolute necessity for planned, expert soft tissue reconstruction in bone infection cases.



The “Error Zero” Matrix

Critical Clinical Error	Pre-Course Rate	Post-Course Rate
Reliance on Sinus Tract Cultures	49.3%	0% ↓
Isolated Orthopedic-Only Practice	12.0%	0% ↓
Reliance on Antibiotic Monotherapy	9.8%	0% ↓
Refusal to take Deep Tissue Cultures	6.6%	0% ↓

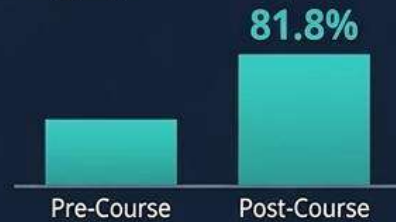
The EBJIC intervention didn’t **just tweak clinical habits**—it **completely eradicated** four fundamental diagnostic and practice errors, immediately elevating regional patient safety standards.



The Systemic Reality: Knowledge vs. Resources

Knowledge Achieved (The Surgeon)

- 81.8% now correctly identify MRI/PET-CT as optimal imaging.



- Knowledge of proper antibiotic timing and deep culture techniques reached near-universal levels.  100%

System Constraints (The Hospital)

- Imaging Access Disparity:** Only 27% have access to advanced imaging (MRI/PET-CT); 50% are forced to rely on inferior X-rays.



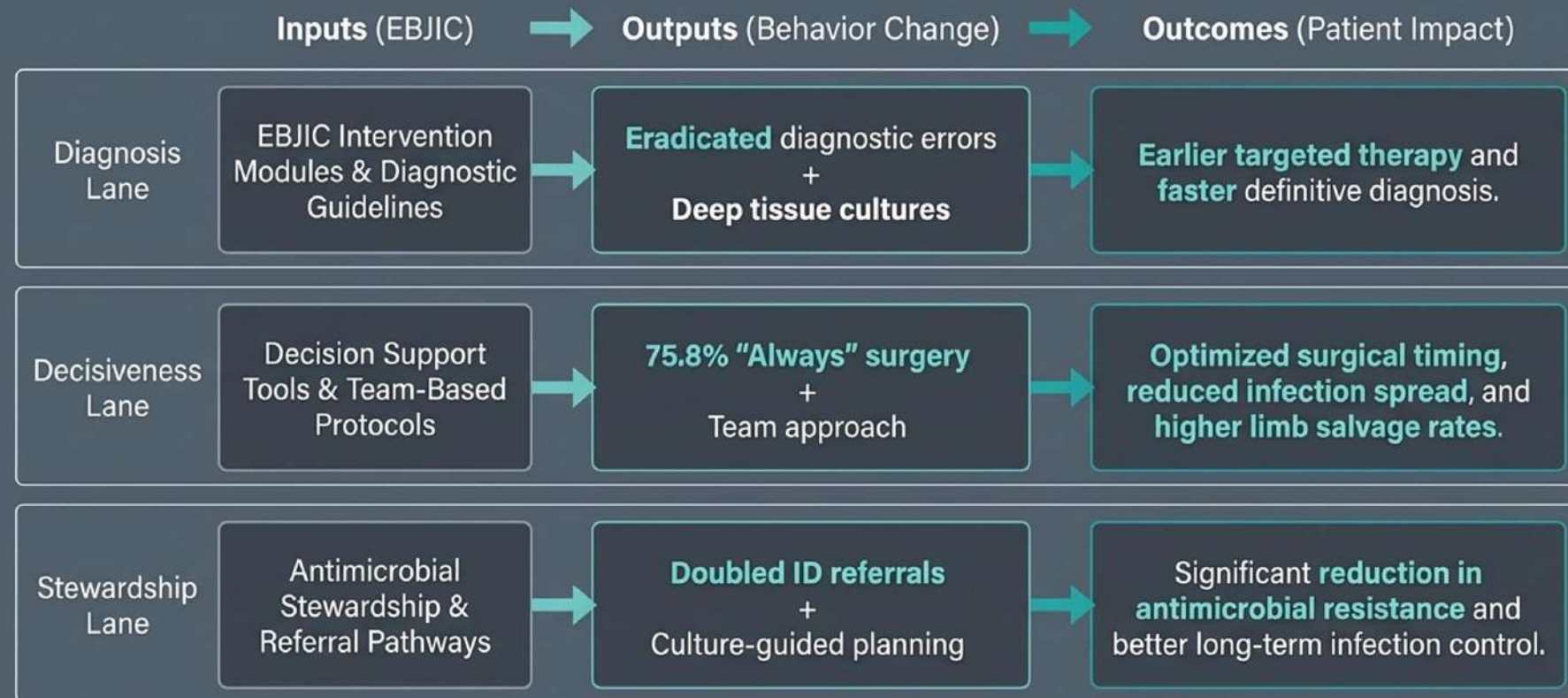
- Technology Shortage:** 70% of surgeons report having no access to biofilm degradation methods.



Synthesis Insight: EBJIC successfully maximizes surgeon potential and clinical decision-making within the harsh realities of their regional infrastructure limits.



Translating Metrics to Patient Outcomes





Conclusion

- Complex pathologies like CPTO cannot be mastered through standard teaching alone. They require **high-impact, structured, and targeted** intervention.
- The **EBJIC** KAP study proves that a focused, evidence-based curriculum doesn't just impart facts and knowledge—it fundamentally transforms clinical practice and attitudes, eradicates fatal errors, and standardises life-saving multidisciplinary care.



EBJIC 2026
The 2nd Egyptian Bone & Joint Infection Course



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See you in December!

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