Provizio® SEM Scanner Bibliography

Two (2) Independent Real-World analyses demonstrating the utility of SEM assessment technology as an objective tool that prompts health care practitioners to act on early, non-visible PI/Us achieving a 3-fold reduction in PI/U incidence[1, 2]

A total of 132 publications support SEM technology to date:

55 peer reviewed publications

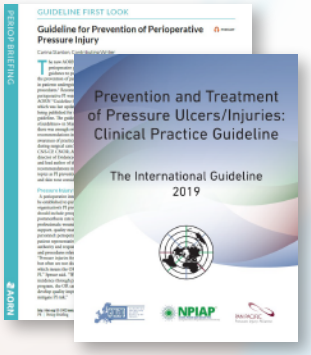
4 systematic reviews

2 health economics

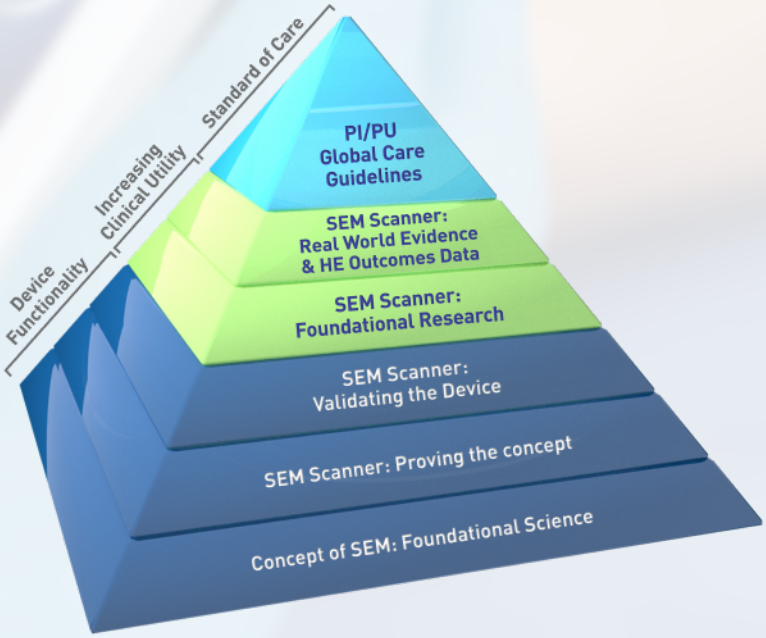
77 scientific congress presentations & posters presented

6 PI/U prevention guidelines or consensus statements

Four (4) Independent Systematic Reviews supporting the validity of SEM measurements as a method of 'detecting' early non - visible PI/U development[3-6]



Six (6) global guidelines or consensus statements considering SEM assessments in PI/U prevention strategies[7-10]



1. Ousey et al., 2022. Sub-epidermal moisture assessment as a prompt for clinical action in treatment of pressure ulcers in at-risk hospital patients. J Wound Care, 31, 294-303. **2.** Ousey et al., 2022. Sub-epidermal moisture assessment as an adjunct to visual assessment in the reduction of pressure ulcer incidence. Journal of Wound Care, 31, 208-216. **3.** Oliveira, A. L. 2017. Accuracy of ultrasound, thermographyand SEM in predicting PUs: a systematic review. Journal of Wound Care. **4.** Scafide et al., 2020. Bedside Technologies to Enhance the Early Detection of Pressure Injuries: A Systematic Review. J Wound Ostomy Continence Nurs, 47, 128-136. **5.** Chaboyer et al., 2022. Oedema as a predictor of the incidence of new pressure injuries in adults in any care setting: A systematic review and meta-analysis. Int J Nurs Stud, 128, 104189. **6.** Moore et al., 2022. Measuring subepidermal moisture to detect early pressure ulcer development: a systematic review. Journal of Wound Care, 31, 634-647. **7.** EPUAP/NPIAP/PPPIA 2019. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. EPUAP/NPIAP/PPPIA. **8.** Guideline for prevention of perioperative pressure injury. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2023. **9.** https://www.acc.co.nz/assets/provider/acc8305-pi-sci-consensus-statement.pdf. **10.** Szewczyk et al., 2022. Annex to the article: Prophylaxis of the pressure ulcers - recommendations of the Polish Wound Management Association. Leczenie Ran, 19, 73-75.

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PROVIZIO® SEM SCANNER

Bibliography

Global Clinical Guidelines

Title	Recommendation/Consensus Statements	Date	Publisher
Prevention and Treatment of Pressure Ulcers/Injuries: International Clinical Practice Guideline (2019)	"Consider using a sub-epidermal moisture/oedema measurement device as an adjunct to routine clinical skin assessment." Recommendation 2.6 (https://www.internationalguideline.com/)	2019	NPIAP/EPUAP/PPPIA
Prevention and Treatment of Pressure Ulcers/Injuries: International Clinical Practice Guideline (2019)	When assessing darkly pigmented skin, "…. consider assessment of skin temperature and sub-epidermal moisture as important adjunct assessment strategies." Recommendation 2.7 (https://www.internationalguideline.com/)	2019	NPIAP/EPUAP/PPPIA
Guideline for Prevention of Perioperative Pressure Injury, 2022, United States Guidelines	"Technology-based skin assessments that focus on the biophysical changes (i.e.,biocapacitance……. may be used". Recommendation 7.2.1 (https://aornguidelines.org/guidelines/content?sectionid=245945765&view=book)	2022	Association of periOperative Registered Nurses (AORN)
Guideline for Prevention of Perioperative Pressure Injury, 2022, United States Guidelines	"Darkly pigmented skin should be assessed by checking the patients's skin temperature and the presence of oedema, induration and pain." Recommendation 7.4.1 (https://aornguidelines.org/guidelines/content?sectionid=245945765&view=book)	2022	Association of periOperative Registered Nurses (AORN)
Pressure injury in spinal cord injury: consensus statement, New Zealand	Recommended approach to pressure injuries in Spinal Cord Injury patients: "If available use a sub-epidermal moisture (SEM) scanner (for example where skin colour makes visual identification difficult)." (https://www.acc.co.nz/assets/provider/acc8305-pi-sci-consensus-statement.pdf)	2021	Accident Compensation Corporation (ACC), the Ministry of Health and Health Quality & Safety Commission in New Zealand
Pressure Ulcer Prevention Recommendations, Poland	SEM assessment is included in standard pressure injury prevention protocols as part of the official Pressure Ulcer Prevention recommendations	2022	Polish Wound Management Association (Member of EWMA), Poland

Peer Reviewed Publications (part 1)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Campbell, J. et al. (2022). The Effect of Sub-Epidermal Moisture on Pressure Injury Prevention Strategies and Incidence of Pressure Injuries: A Feasibility Pilot Randomised Controlled Trial. J Tissue Viability, 2022, Publisher, doi:10.1016/j.jtv.2022.07.008."	2022	Journal of Tissue Viability
Sub-epidermal Moisture	"McEvoy, N. et al. (2022). Biomarkers for the early detection of pressure ulcers in the intensive care setting: A comparison between sub-epidermal moisture measurements and interleukin-1α. Int Wound J. 2022; 1- 14. Doi:10.1111/iwj.13930"	2022	International Wound Journal
SEM Scanner – Systematic Review	"Moore, Z. et al. (2022). Measuring subepidermal moisture to detect early pressure ulcer development: a systematic review. Journal of Wound Care, 31, 634-647."	2022	Journal of Wound Care
Sub-epidermal Moisture – Systematic Review	"Wynn, M. et al. (2022). Risk factors for the development and evolution of deep tissue injuries: A systematic review. Journal of Tissue Viability, 31, 416-423."	2022	Journal of Tissue Viability

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Peer Reviewed Publications (part 2)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Ousey, K. et al. (2022). Sub-Epidermal Moisture Assessment as a Prompt for Clinical Action in Treatment of Pressure Ulcers in at-Risk Hospital Patients. J Wound Care, vol. 31, no. 4, 2022, pp. 294-303, doi:10.12968/jowc.2022.31.4.294."	2022	Journal of Wound Care
SEM Scanner	"Ousey, K. et al. (2022). Sub-Epidermal Moisture Assessment as an Adjunct to Visual Assessment in the Reduction of Pressure Ulcer Incidence. Journal of Wound Care, vol. 31, no. 3, 2022, pp. 208-16, doi:10.12968/jowc.2022.31.3.208."	2022	Journal of Wound Care
SEM Scanner	"Martins de Oliveira, A. L. et al. (2022). Sub-Epidermal Moisture Versus Traditional and Visual Skin Assessments to Assess Pressure Ulcer Risk in Surgery Patients. J Wound Care, vol. 31, no. 3, 2022, pp. 254-64, doi:10.12968/jowc.2022.31.3.254."	2022	Journal of Wound Care
SEM Scanner – Systematic Review	"Chaboyer, W. et al. (2022). Oedema as a Predictor of the Incidence of New Pressure Injuries in Adults in Any Care Setting: A Systematic Review and Meta-Analysis. Int J Nurs Stud, vol. 128, 2022, p. 104189, doi:10.1016/j.ijnurstu.2022.104189."	2022	International Journal of Nursing Studies
SEM Scanner	"Gefen, A. et al. (2022). A machine learning algorithm for early detection of heel deep tissue injuries based on a daily history of sub-epidermal moisture measurements. Int Wound J. 2021; 1- 10. doi:10.1111/iwj.13728"	2022	International Wound Journal
SEM Scanner	"Bryant, R. et al. (2021). Clinical profile of the SEM Scanner - Modernizing pressure injury care pathways using Sub-Epidermal Moisture (SEM) scanning. Expert review of medical devices vol. 18,9, 833-847. doi:10.1080/17434440.2021.1960505"	2021	Expert Review of Medical Devices (Taylor & Francis Online)
SEM Scanner	"Gershon, S. et al. (2021). Evaluating the sensitivity, specificity and clinical utility of algorithms of spatial variation in sub-epidermal moisture (SEM) for the diagnosis of deep and early-stage pressure-induced tissue damage. J Wound Care, 30(1), 41-53. doi:10.12968/jowc.2021.30.1.41."	2021	Journal of Wound Care
SEM Scanner	"Musa, L., et al. (2021). Clinical Impact of a Sub-Epidermal Moisture Scanner: What Is the Real-World Use? J Wound Care 30.3: 198-208."	2021	Journal of Wound Care
SEM Scanner	"Nightingale, P. et al. (2021). Evaluating the Impact on Hospital Acquired Pressure Injury/Ulcer Incidence in a United Kingdom NHS Acute Trust from Use of Sub-Epidermal Scanning Technology. J Clin Nurs 30.17-18: 2708-17."	2021	Journal of Clinical Nursing
SEM Scanner	"Raine, G. (2021). Is it time to re-evaluate the inevitability of ulcers at the end of life?. International journal of palliative nursing vol. 27,9: 440-448. doi:10.12968/ijpn.2021.27.9.440"	2021	International Journal of Palliative Nursing
SEM Scanner	"Ropper, R. (2021). The benefits of using a first generation SEM scanner versus an equipment selection pathway in preventing HAPUs. British journal of nursing (Mark Allen Publishing) vol. 30,15: S12-S23. doi:10.12968/bjon.2021.30.15.S12"	2021	British Journal of Nursing

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Peer Reviewed Publications (part 3)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Ore, N. et al. (2020). Implementing a new approach to pressure ulcer prevention. Journal of Community Nursing. Volume 34, No 4, p52-57."	2020	Journal of Community Nursing
SEM Scanner	"Gefen, A. The SEM Scanner for early pressure ulcer detection: a 360-degree review of the technology. Wounds International. 2020; 11(4):22-30."	2020	Wounds International
Sub-epidermal Moisture	"Bates-Jensen, B. et al. (2020). Subepidermal Moisture and Pressure Injury in a Pediatric Population. Journal of Wound, Ostomy and Continence Nursing. Volume 47 - Issue 4 - p 329-335 doi: 10.1097/WON.0000000000000654"	2020	Journal of Wound, Ostomy and Continence Nursing
Editorial – Sub-epidermal Moisture	"Black, J. (2020). Seeing what lies beneath the surface. Wounds International. Vol 11 Issue 1"	2020	Wounds International
SEM Scanner	"Budri, A. (2020). Identification of increased risk of pressure damage with a sub-epidermal moisture scanner: clinical outcomes and cost-effectiveness. British Journal of Healthcare Management. https://doi.org/10.12968/bjhc.2020.0035"	2020	British Journal of Healthcare Management
SEM Scanner	"Budri, A. et al. (2020). Sub-epidermal moisture measurement: an evidence-based approach to the assessment for early evidence of pressure ulcer presence. Int Wound Journal. 1– 9. https://doi.org/10.1111/iwj.13437"	2020	Journal of Clinical Nursing
Challenges of Standard of Care	"Gaspar, S. et al. (2020). Pressure ulcers: The challenge of monitoring in hospital context. Applied Nursing Research. Volume 53, 151266, ISSN 0897-1897, https://doi.org/10.1016 j.apnr.2020.151266. (http://www.sciencedirect.com/science/article/pii/S0897189719308195)"	2020	Applied Nursing Research
Health Economics - SEM Scanner	"Gefen, A. et al. (2020). Modelling the cost-benefits arising from technology-aided early detection of pressure ulcers. Wounds International. Vol 11:1 pp12-17"	2020	Wounds International
Sub-epidermal Moisture	"Gefen, A. et al. (2020). The subepidermal moisture scanner: the technology explained. Journal of Wound Care. 1;29 (Sup2c):S10-S16. doi: 10.12968/jowc.2020.29.Sup2c.S10"	2020	Journal of Wound Care
MDRPU	"Gefen, A. et al. (2020). Update to device-related pressure ulcers: SECURE prevention. COVID-19, face masks and skin damage. Journal of Wound Care. 29:5, 245-259"	2020	Journal of Wound Care
Aetiology	"Gefen, A. et al. (2020). What is new in our understanding of pressure injuries: The inextricable association between sustained tissue deformations and pain and the role of the support surface. Wound Practice & Research: Journal of the Australian Wound Management Association. Vol.28, No. 2: 58-65"	2020	Wound Practice & Research: Journal of the Australian Wound
SEM Scanner	"Gershon, S. (2020). Using Subepidermal Moisture Level as an Indicator of Early Pressure Damage to Local Skin and Tissue. Advances in skin & wound care, 33(9), 469–475. https://doi.org/10.1097/01.ASW.0000655380.86380.7b"	2020	Advances in Skin and Wound Care

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Type of Publication	Reference	Date	Journal / Conference
PI/PU Classification	"Kottner, J. et al. (2020). Pressure ulcer/injury classification today: an international perspective, Journal of Tissue Viability, https://doi.org/10.1016/j.jtv.2020.04.003"	2020	Journal of Tissue Viability
SEM Scanner	"Okonkwo, H. et al. (2020). A blinded clinical study using a subepidermal moisture biocapacitance measurement device for early detection of pressure injuries. Wound Repair and Reg 2020;1-11. https://doi.org/10.1111/wrr.12790"	2020	Wound Repair and Regeneration
Health Economics - SEM Scanner	"Padula, W. V. et al. (2020). The cost-effectiveness of sub- epidermal moisture scanning to access pressure injury in U.S. health systems. Journal of Patient Safety and Risk Management. 0(0) 1-9"	2020	Journal of Patient Safety and Risk Management
Letter to the Editor – SEM Scanner	"Peko, L. et al. (2020). Sensitivity and laboratory performances of a second-generation sub-epidermal moisture measurement device. Int Wound J. doi:10.1111/ iwj.13339"	2020	International Wound Journal
SEM Scanner – Systematic Review	"Scafide, K.N. et al. (2020). Bedside Technologies to Enhance the Early Detection of Pressure Injuries- A Systematic Review. Journal of Wound, Ostomy and Continence Nursing. 00(0):1-9"	2020	Journal of Wound, Ostomy and Continence Nursing
SEM Scanner	"Budri, A. et al. (2020). Impaired mobility and pressure ulcer development in older adults: excess movement and too little movement-two sides of the one coin?. Journal of Clinical Nursing. 00: 1– 18. https://doi.org/10.1111/ jocn.15316"	2020	Journal of Clinical Nursing
SEM Scanner	"Cohen, L. et al. (2019). Phantom testing of the sensitivity and precision of a sub-epidermal moisture scanner. International Wounds Journal. 16(4); 979-988."	2019	International Wound Journal
Sub-epidermal Moisture	"Gefen, A. (2019). How medical engineering has changed our understanding of chronic wounds and future prospects. Medical Engineering and Physics 72:13-18."	2019	Medical Engineering and Physics
Sub-epidermal Moisture	"Gefen, A. et al. (2019). Saving lives through pressure ulcer research: revisiting our decade-old perspective of aetiology. Wounds International Editorial. 10 (2) 8-9."	2019	Wounds International Editorial
Sub-epidermal Moisture	"Harvey, J. et al. (2019). Correlation of bioimpedance changes after compressive loading of murine tissues in vivo. Physiology Measure. 1088-1361."	2019	Physiology Measure
Risk Assessment Tools	"Moore, Z. et al. (2019). Risk assessment tools for the prevention of pressure ulcers. Cochrane Database of Systematic Reviews 2019, Issue 1. Art. No.: CD006471. DOI: 10.1002/14651858.CD006471.pub4"	2019	Cochrane Database of Systematic Reviews
Health Economics - US Costs	"Padula, W. V. (2019). The national cost of hospital-acquired pressure injuries in the United States. International Wound Journal. 16(3):634-640."	2019	International Wound Journal
SEM Scanner	"Ross, G. et al. (2019). Assessment of sub-epidermal moisture by direct measurement of tissue biocapacitance. Medical Engineering and Physics. Vol:73:92-99."	2019	Medical Engineering and Physics
SEM Scanner	"Smith, G. (2019). Improved clinical outcomes in pressure ulcer prevention using the SEM Scanner. Journal of Wound Care. Vol 28 (5)."	2019	Journal of Wound Care

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Peer Reviewed Publications (part 5)

Type of Publication	Reference	Date	Journal / Conference
Sub-epidermal Moisture	"Van Damme, N. et al. (2019). Physiological processes of inflammation and oedema initiated by sustained mechanical loading in subcutaneous tissues: a scoping review. Wound Repair and Regeneration. Online. Nov 2 2019"	2019	Wound Repair and Regeneration
Sub-epidermal Moisture	"Bates-Jensen, B. et al. (2018). Sub epidermal moisture detection of heel pressure injury: The pressure ulcer detection study outcomes. International Wound Journal. 15:297-309."	2018	International Wound Journal
SEM Scanner	"Gefen, A. (2018). The future of pressure ulcer prevention is already here: Early detecting and targeting inflammation to halt damage. EWMA Journal. Vol 19 (2)7-11."	2018	EWMA Journal
SEM Scanner	"Gefen, A. (2018). The Sub-Epidermal Moisture Scanner: the principle of pressure injury prevention using novel early detection technology. Wounds International. Vol 9. No 3."	2018	Wounds International
SEM Scanner	"Gefen, A. et al. (2018). An observational, Prospective Cohort Pilot Study to Compare the use of Sub-epidermal Moisture measurements Versus Ultrasound and Visual Skin Assessments for Early Detection of Pressure Injury. OWM: 64 (9):12-27."	2018	OWM
Health Economics – PI/PU	"Guest, J. et al. (2018). Cohort study evaluating pressure ulcer management in clinical practice in the UK following initial presentation in the community: costs and outcomes. BMJ Open 8: e021769."	2018	BMJ Open
Sub-epidermal Moisture	"Kim, Chul-Gyu. et al. (2018). The relationship of sub epidermal moisture and early stage pressure injury by visual skin assessment. Journal of Tissue Viability. Vol 27 (3) p 130-134."	2018	Journal of Tissue Viability
SEM Scanner	"O Brien, G. (2018). The relationship between nurses assessment of early pressure ulcer damage and sub epidermal moisture measurement: A prospective explorative study. Journal of Tissue Viability. 27(4):232-237."	2018	Journal of Tissue Viability
Health Economics - Hospital Resources	"Padula, W. V. (2018). Value of hospital resources for effective pressure injury prevention: a cost-effectiveness analysis. British Journal of Medicine; 0:1–10."	2018	British Journal of Medicine
Sub-epidermal Moisture	"Park, S. et al. (2018). The use of sub epidermal moisture measurement in predicting blanching erythema in jaundice patients. Journal of Wound Care (2):342-349."	2018	Journal of Wound Care
SEM Scanner	"Raizman, R. et al. (2018). Utility of a sensor-based technology to assist in the prevention of pressure ulcers. A clinical comparison. International Wound Journal. 15 (6) 1033-1044."	2018	International Wound Journal
Sub-epidermal Moisture	"Bates-Jensen, B. et al. (2017). Subepidermal moisture detection of pressure induced tissue damage on the trunk: The pressure ulcer detection study outcomes. Wound Repair and Regeneration, 25(3), pp.502-511."	2017	Wound Repair and Regeneration
Sub-epidermal Moisture – Systematic Review	"Oliveira, A. L. et al. (2017). Accuracy of ultrasound, thermography and subepidermal moisture in predicting pressure ulcers: a systematic review. Journal of Wound Care, 26(5), pp.199-215."	2017	Journal of Wound Care

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Peer Reviewed Publications (part 6)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Moore, Z. et al. (2016). Subepidermal moisture (SEM) and bioimpedance: a literature review of a novel method for early detection of pressure-induced tissue damage (pressure ulcers). International Wound Journal, 14(2), pp.331-337."	2016	International Wound Journal
SEM Scanner	"Clendenin, M. et al. (2015). Inter-operator and inter-device agreement and reliability of the SEM Scanner. Journal of Tissue Viability, 24(1), pp.17-23."	2015	Journal of Tissue Viability
Health Economics – PI/PU	"Guest, J. (2015). Health economic burden that wounds impose on the National Health Service in the UK. BMJ Open . 5:009283."	2015	BMJ Open
Sub-epidermal Moisture	"Swisher, S. L. et al. (2015). Impedance sensing device enables early detection of pressure ulcers in vivo. Nature Communications, 6(1)."	2015	Nature Communications
Sub-epidermal Moisture	"Harrow, J. et al. (2014). Subepidermal moisture surrounding pressure ulcers in persons with a spinal cord injury: A pilot study. The Journal of Spinal Cord Medicine, 37(6), pp.719-728."	2014	The Journal of Spinal Cord Medicine
Sub-epidermal Moisture	"Zhang, L. et al. (2014). A method for in vivo detection of abnormal sub-epidermal tissues based on dielectric properties. Bio-Medical Materials and Engineering, 24(1) pp. 3455–3462."	2014	Bio-Medical Materials and Engineering
Health Economics – PI/PU	"Dealey, C. et al. (2012). The cost of pressure ulcers in the United Kingdom. Journal of Wound Care. Jun;21(6):261-2, 264, 266."	2012	Journal Wound Care
Sub-epidermal Moisture	"Guihan, M. et al. (2012). Assessing the feasibility of subepidermal moisture to predict erythema and stage 1 pressure ulcers in persons with spinal cord injury: A pilot study. The Journal of Spinal Cord Medicine, 35(1), pp.46-52."	2012	The Journal of Spinal Cord Medicine
Sub-epidermal Moisture	"Padula, W. V. et al. (2011). Improving the Quality of Pressure Ulcer Care with Prevention. Medical Care, 49 (4), pp.385-392."	2011	Medical Care
Sub-epidermal Moisture	"Bates-Jensen, B. et al. (2009). Subepidermal Moisture Is Associated with Early Pressure Ulcer Damage in Nursing Home Residents With Dark Skin Tones. Journal of Wound, Ostomy and Continence Nursing, 36(3), pp.277-284."	2009	Journal of Wound, Ostomy and Continence Nursing
Sub-epidermal Moisture	"Bates-Jensen, B. et al. (2008). Subepidermal moisture differentiates erythema and stage I pressure ulcers in nursing home residents. Wound Repair and Regeneration, 16(2). pp.189-197."	2008	Wound Repair and Regeneration
Health Economics – PI/PU	"Bennett, G. et al. (2004). The cost of pressure ulcers in the UK. Age and Ageing; 33: 230–235."	2004	Age and Aging

Additional Publications (part 1)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Evans, P. et al. (2020). The impact of skin barrier cream on variation in sub-epidermal moisture readings. Wounds UK. Vol 16(2) 29-35"	2020	Wounds UK

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Additional Publications (part 2)

Type of Publication	Reference	Date	Journal / Conference
SEM Scanner	"Fletcher J. et al. (2018). SEM Scanner Made Easy. Wounds UK . p1-6."	2018	Wounds UK
Risk Assessment Tools	"Fletcher, J. (2017). An overview of risk assessment tools. Wounds UK , 13(1) pp. 18-26."	2017	Wounds UK
SEM Scanner	"Fletcher, J. et al. (2017). Early detection technology transforms care and releases productivity: an NHS case study. Wounds UK, 13(1) pp. 74-78."	2017	Wounds UK
SEM Scanner	"Moore, Z. et al. (2016). Advancing pressure ulcer prevention with SEM Scanner. Wounds UK, 12(1) pp. 70-73."	2016	Wounds UK

Posters and Conference Presentations (part 1)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Nolan, Katie. et al. (2022). Deep Tissue Injury (DTI) Technology: Assessing Beyond the Skin Surface. Accepted and Presented at ANCC 2022, Chicago, IL, USA"	2022	ANCC National Magnet Conference
Posters and Conference Presentations	"Iyer, V. et al. (2022). Implementing evidence-based clinical pathways for improved pressure injury (PI) population intervention outcomes. Accepted and Presented at SAWC 2022, Las Vegas, NV, USA"	2022	Symposium on Advanced Wound Care (SAWC)
Posters and Conference Presentations	"Avsar, P. et al. (2022). What is the impact of sub epidermal moisture (SEM) measurement and targeted pressure ulcer prevention, versus visual skin assessment and usual care, on mean SEM delta scores and early pressure ulcer development?" Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Burns, M. et al. (2022). Solving the Health Economic Burden of Pressure Ulcers in the United Kingdom Using SEM Assessment Technology. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Aguirre, C., Sobrin, S. (2022).The Effectiveness of SEM Assessment in Early Identification of Pressure Damage in a Spanish Long Term Care Facility. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Shorney, R., Housely, C. (2022). Applying for community reimbursement in the UK national health service for a second-generation technology in pressure ulcer prevention. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Iyer, V. et al. (2022). A quality approach to pressure injury/ulcer prevention using SEM Assessments In every day clinical practice. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference

Posters and Conference Presentations (part 2)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Dane, A. (2022). Analysis of real world data: Impact of technology on nursing interventions for pressure injury/ ulcer prevention. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Wood, Z et al. (2022). Clinical decision making in pressure ulcer (PU) prevention as impacted by the use of sub-epidermal moisture (SEM) prompts- the mining of the worlds first PU registry. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Iyer, V. et al. (2022).Data from Clinical Practice Demonstrates Pressure Ulcer (PU) Prevention in Long Term Care through the Introduction of Technology into the Care Pathway. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"McEvoy, N. et al. (2022). The relationship between sub-epidermal moisture measurements and inflammatory markers in the early identification of pressure ulcers. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Smith, B. et al. (2022). Breaking the cycle of damage: SEM assessment technology as a method for support surface Assessment. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Wilson, P. et al. (2022). Elevated sub-epidermal moisture predicts both pressure ulceration and diabetic foot ulceration. Accepted and Presented at EPUAP 2022, Prague, Czech Republic"	2022	EPUAP, Annual Conference
Posters and Conference Presentations	"Webb, J. et al. (2022). See Beneath the Skin: Predict & Prevent Pressure Injuries Prior to Visible Damage. Accepted and Presented at ARN 2022, San Diego, CA, USA"	2022	Association of Rehabilitation Nurses
Posters and Conference Presentations	"Hancock, K. et al. (2022). Using Technology to Enhance Pressure Ulcer Prevention in Critically Ill Patients. Accepted and Presented at BACCN 2022, Belfast, UK."	2022	British Association of Critical Care Nurses
Posters and Conference Presentations	"Hancock, K. et al. (2022). Early and increased detection of patients at risk of developing hospital-acquired pressure ulcers. Accepted and Presented at TVS, Glasgow, UK."	2022	Tissue Viability Society
Posters and Conference Presentations	"Iyer, V. et al. (2022). Driving Value Through Innovation. Accepted and presented at ISPOR, Washington, DC, USA."	2022	The Professional Society for Health Economics and Outcomes Research (ISPOR)
Posters and Conference Presentations	"Bryant, R. et al. (2022). Changing the paradigm of pressure injury (PI) prevention: Translating sub-epidermal moisture (SEM) assessment technology from bench to bedside. Presentation at Advanced Material Science World Congress 2022."	2022	Advanced Material Sciences World Conference
Posters and Conference Presentations	"Burns, M. et al. (2022). The Clinical Impossibility Of Pressure Ulcer Prevention Under The Current Standard Of Care. Presentation at WUWHS 2022, Abu Dhabi, UAE."	2022	World Union of Wound Healing Societies

Posters and Conference Presentations (part 3)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Burns, M. et al (2022). The Mathematical Impossibility Of Pressure Ulcer Prevention. Presentation at WUWHS 2022, Abu Dhabi, UAE."	2022	World Union of Wound Healing Societies
Posters and Conference Presentations	"Bates-Jensen, B. et al. (2021). Levelling the playing field: technology for assessment of pressure induced tissue damage. Presentation at AAWC."	2021	AAWC
Posters and Conference Presentations	"Stephenson, J. (2021). Assessment of the Pressure Ulcer Reduction Programme to reduce PU Incidence and the effectiveness of the SEM Scanner as an adjunct Therapy. Accepted and presented at EPUAP, Virtual Conference."	2021	EPUAP, Virtual Conference
Posters and Conference Presentations	"Gefen, A. (2021). A machine based learning algorithm for differential diagnosis of a heel DTPI based on a daily history of Biocapacitance measurements. Presentation at NPIAP, Virtual Conference 2021"	2021	NPIAP, Virtual Conference
Posters and Conference Presentations	"Hancock, K. (2021). Clinical Decision Making in Pressure Ulcer Prevention As Impacted By The Use Of Data Analysed From A Pressure Ulcer Registry. Accepted and presented at EPUAP, Virtual conference."	2021	EPUAP, Virtual Conference
Posters and Conference Presentations	"Lustig, M. et al. (2021). A machine learning-based algorithm for differential diagnosis of a heel DTPI based on a daily history of Biocapacitance measurements. Accepted and presented poster at NPIAP, Virtual Conference 2021"	2021	NPIAP, Virtual Conference
Posters and Conference Presentations	"McEvoy, N. et al. (2021). Measuring sub epidermal moisture to detect early pressure ulcer development: A systematic review. [E-Poster]. RCSI Faculty for Nursing and Midwifery 40th Annual International Nursing"	2021	RCSI Faculty for Nursing and Midwifery 40th Annual International Nursing
Posters and Conference Presentations	"Sobrin, S. et al. (2021). The Effectiveness of SEM Assessment in Early Identification of Pressure Damage in a Spanish Long Term Care Facility. Accepted and presented at EPUAP, Virtual Conference."	2021	EPUAP, Virtual Conference
Posters and Conference Presentations	"Hancock, K. (2021). Data From Clinical Practice Demonstrates Pressure Ulcer (PU) Prevention in Elderly Care Through The Introduction of Technology Into The Care Pathway. Accepted and presented at EPUAP, Virtual Conference."	2021	EPUAP, Virtual Conference
Posters and Conference Presentations	"Wood, Z. (2021). Real World Data Demonstrates Pressure Injury (PI) Prevention in Long Term Care Through The Introduction of Technology Into The Care Pathway. Accepted and Presented at Together We Care Forum, Canada."	2021	Together We Care Forum, Canada (Virtual)
Posters and Conference Presentations	"Wood, Z. (2021). Pragmatic Real-World Data Demonstrates Improvement in Patient Safety and Pressure Ulcer (PU) Prevention Through the Introduction of Technology into the Care Pathway. Accepted and presented at the 5th EPUAP Focus Meeting, Virtual Conference."	2021	EPUAP, 5th Focus Meeting (Virtual)
Posters and Conference Presentations	"Burns, M. (2020). Pressure Injuries/Ulcers Incidence in the Medium Risk Patient in Acute Care Settings in the US and UK. Accepted and presented at World Union of Wound Healing Societies, Abu Dhabi."	2020	World Union of Wound Healing Societies
Posters and Conference Presentations	"Burns, M. (2020). Pressure Injury Incidence in the Medium Risk Patient in Acute Care Settings in the US and UK. Accepted and presented at NPIAP, Houston, USA."	2020	NPIAP 2020

Posters and Conference Presentations (part 4)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Burns, M. (2020). Reducing Pressure Injury/Ulcer (PI/U) Ulcer through the Introduction of Technology. Accepted and presented at EWMA, Virtual Conference 2020"	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Burns, M. et al. (2020). Clinical Complexities, Resource Use and Costs of Joined Up Pressure Ulcer Care. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Burns, M. et al. (2020). Incorporating Sub-epidermal Moisture Measurements Into Routine Skin And Tissue Assessments For The Prevention Of Pressure Ulcers. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Burns, M. et al. (2020). Sub-Epidermal Moisture (SEM) Measures: How They Were Arrived At And What The Numbers Mean. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Smith, G. et al. (2020). Incorporating Sub-epidermal Moisture Measurements Into Routine Skin And Tissue Assessments For The Prevention Of Pressure Ulcers in Patients With Darkly Pigmented Skin. Accepted and presented at EWMA, Virtual Conference 2020"	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Burns, M. et al. (2020). The Clinical Impossibility of Pressure Injury/Ulcer Prevention under the Current Standard of Care. Accepted and presented at World Union of Wound Healing Societies, Abu Dhabi."	2020	World Union of Wound Healing Societies
Posters and Conference Presentations	"Burns, M. et al. (2020). The Mathematical Impossibility Of Pressure Injury/Ulcer Prevention. Accepted and presented at World Union of Wound Healing Societies, Abu Dhabi."	2020	World Union of Wound Healing Societies
Posters and Conference Presentations	"Peko, L. et al. (2020). Sensitivity and laboratory performances of a 2nd-generation sub-epidermal moisture (SEM) measurement device. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Raine, G. (2020). Achieving A Reduction of Hospice Acquired Pressure Damage In The Palliative Care Setting. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Wood, Z. (2020). In-depth analysis of the National Safety Thermometer (NHS-ST) Pressure Ulcer (PU) Data England 2012-2017. Accepted and presented at EWMA, Virtual Conference."	2020	EWMA, Virtual Conference
Posters and Conference Presentations	"Wood, Z. (2020). Reducing Pressure Injury (PI) Incidence through the Introduction of Technology. Accepted and presented at NPIAP, Houston, USA."	2020	NPIAP 2020
Posters and Conference Presentations	"Wood, Z. (2020). Repeatability and Reliability of Sub-Epidermal Moisture (SEM) Readings in Ventral (Sternum) and Dorsal (Sacrum and Heel) Anatomical Locations. Accepted and presented at EPUAP, Virtual Conference."	2020	EPUAP, Virtual Conference
Posters and Conference Presentations	"Budri, A. (2019). Sub-epidermal moisture (SEM) measurement. Accepted and presented at EPUAP, Lyon, France."	2019	EPUAP 2019
Posters and Conference Presentations	"Burns, M. (2019). Modelling pressure ulcer prevention and treatment pathways: large cost savings achievable with investment in new technology. Accepted and presented at EPUAP, Lyon, France."	2019	EPUAP 2019

Posters and Conference Presentations (part 5)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Creehan, S. (2019). Mapping the integration of novel technology within the Pressure Injury Prevention Care Pathway: An assessment of quality and efficiency. Accepted and presented at SAWC, Las Vegas, USA."	2019	SAWC 2019
Posters and Conference Presentations	"Lawrance, R. et al. (2019). Reducing pressure ulcer (PU) incidence through introduction of new technology. Accepted and presented at EPUAP, Lyon, France."	2019	EPUAP 2019
Posters and Conference Presentations	"O'Kieffe, S. (2019). Evaluation of Novel Subepidermal Moisture (SEM) Technology in Early Pressure Ulcer Detection Versus Conventional Techniques. Accepted and presented at Tissue Viability Society 2019 and EPUAP, Lyon, France."	2019	Tissue Viability Society 2019, EPUAP 2019
Posters and Conference Presentations	"Ore, N. et al. (2019). Striving for Perfect Care: preventing skin breakdown in the community setting in the UK. Accepted and presented at EPUAP, Lyon, France."	2019	EPUAP 2019
Posters and Conference Presentations	"Budri, A. et al. (2018). Pressure ulcer risk assessment: risk factors and risk screening in older persons. Accepted and presented at Wounds UK, Harrogate UK."	2018	Wounds UK 2018
Posters and Conference Presentations	"Burns, M. et al. (2018). Novel Intervention* Designed to Reduce Incidence of Hospital Acquired Pressure Ulcers (HAPU's) Results in Improved QALYs and Cost Savings. Accepted and presented at Wounds UK, Harrogate, UK."	2018	Wounds UK 2018
Posters and Conference Presentations	"Evans, P. et al. (2018). The effect of barrier cream application on Sub-epidermal moisture (SEM) measurements. Accepted and presented at Wounds UK, Harrogate, UK."	2018	Wounds UK 2018
Posters and Conference Presentations	"Lawrance, R. et al. (2018). Epidemiological Analysis of the NHS Safety Thermometer Pressure Ulcer (PU) Data. Accepted and presented at EPUAP 2018, Rome, Italy."	2018	EPUAP 2018
Posters and Conference Presentations	"Lawrance, R. et al. (2018). Evaluation of A Early Stage Pressure Ulcer Assessment Device (2018). Accepted and presented at EPUAP 2018, Rome, Italy."	2018	EPUAP 2018
Posters and Conference Presentations	"Lawrance, R. et al. (2018). Pressure Ulcer Prevention Programme (PURP), Enabling Clinically Effective Management of Patients At Risk Of Pressure Ulcers (PU). Accepted and presented at EWMA 2018, Krakow, Poland, 9-11 May, Accepted and presented at EPUAP 2018, Rome, Italy."	2018	EWMA 2018, EPUAP 2018
Posters and Conference Presentations	"Okonkwo, H. et al. (2018). Differentiating between Healthy Tissue and Early Stage Pressure Injuries: a Pilot Study of the Effectiveness of the SEM Scanner. Accepted and presented at NPUAP Annual Conference, Las Vegas, USA, SAWC 2018, WOCN 2018."	2018	NPUAP 2018, SAWC 2018, WOCN 2018
Posters and Conference Presentations	"Raine, G. (2018). Prevention; Prevention; Prevention. Tackling the Number One Patient Safety Issue. Accepted and presented at Patient Safety Conference, Manchester, UK."	2018	Patient Safety Conference
Posters and Conference Presentations	"Raizman, R. et al. (2018). Using Hand-held Device to Prevent Pressure Ulcers: Case Series. Accepted and presented at WOCN 2018, Philadelphia, USA."	2018	WOCN 2018
Posters and Conference Presentations	"Lawrance, R. et al. (2018). Integrating Early Detection of Pressure Ulcers (PU) into Universal prevention Pathways. Accepted and presented at Wounds UK 2018, Harrogate, UK."	2018	Wounds UK 2018

Posters and Conference Presentations (part 6)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Burns, M. (2017). Real world evidence of HAPU reduction using a novel early detection device measuring Sub- Epidermal Moisture (SEM). Accepted and presented at 19th EPUAP 2017 Annual Meeting, Belfast, Northern Ireland, 20 September."	2017	EPUAP 2017
Posters and Conference Presentations	"Burns, M. et al. (2017). Real world evidence evaluating a novel early-detection device for HAPU reduction. Accepted and presented at Wounds UK 2017, EWMA 2017, EPUAP 2017, NPUAP 2018, SAWC 2018, WOCN 2018."	2017	Wounds UK 2017, EWMA 2017, EPUAP 2017, NPUAP 2018, SAWC 2018, WOCN 2018
Posters and Conference Presentations	"Okonkwo, H. et al. (2017). Evaluation of a novel device using capacitance of the detection of early pressure ulcers (PU), a multi-site longitudinal study. Accepted and presented at EPUAP 2017, Wounds UK 2017, NPUAP 2018, SAWC 2018, WOCN 2018."	2017	EPUAP 2017, Wounds UK 2017, NPUAP 2018, SAWC 2018, WOCN 2018
Posters and Conference Presentations	"Raizman, R. et al. (2017). Hand-held device to decrease hospital acquired pressure injuries: From theory to practice. Accepted and presented at EWMA 2017, SAWC 2017, NPUAP 2018, WOCN 2018."	2017	EWMA 2017, SAWC 2017, NPUAP 2018, WOCN 2018
Posters and Conference Presentations	"Shorney, R. et al. (2017). Achieving zero: a holistic approach to tackle pressure ulcers. Accepted and presented at Patient Safety Congress 2017, Manchester, UK, 5 July."	2017	Patient Safety Congress 2017
Posters and Conference Presentations	"Zanin, A. et al. (2017). Budget Impact Model to augment the value of an innovative device for the early detection of pressure ulcers in Scotland. Accepted and presented at ISPOR 2017, EPUAP 2017, NPUAP 2018, SAWC 2018."	2017	ISPOR 2017, EPUAP 2017, NPUAP 2018, SAWC 2018
Posters and Conference Presentations	"Budri, A. et al. (2017). How use of sub-epidermal moisture measurement can lead to early pressure ulcer detection in practice – a case study. Accepted and Presented at Wounds UK. Harrogate, UK."	2017	Wounds UK 2017
Posters and Conference Presentations	"Budri, A. et al. (2016). Pressure ulcer risk assessment: risk factors and risk screening in older persons – a validation study. Accepted and presented at EWMA 2016. Presented to EWMA, Bremen, Germany, 11-13 May."	2016	EWMA 2016
Posters and Conference Presentations	"Littlefield, S. et al. (2016). Results from a New Pressure Ulcer Prevention Bundle. Accepted and presented at Wounds UK 2016. Presented at EWMA Conference, Bremen, Germany, 11-13 May."	2016	EWMA 2016
Posters and Conference Presentations	"O'Brien, G. et al. (2016). The Relationship between Nurses' Assessment of Early Pressure Ulcer Damage and Sub-epidermal Moisture Measurement: A prospective explorative study. Accepted and presented at EWMA 2016. Presented to EWMA Conference, Bremen, Germany, 11-13 May."	2016	EWMA 2016
Posters and Conference Presentations	"Oliveira, A. L. et al. (2016). Accuracy of ultrasound, thermography, and subepidermal moisture in predicting pressure ulcers: a systematic review. Accepted and presented at Wounds UK 2016. Presented at Harrogate, North Yorkshire, UK, 14-16 November."	2016	Wounds UK 2016
Posters and Conference Presentations	"Smith, G. (2016). Improved Patient Safety with the Use of the SEM Scanner (A pilot study). Accepted and presented at Wounds UK 2016, NPUAP 2018, SAWC 2018, WOCN 2018."	2016	Wounds UK 2016, NPUAP 2018, SAWC 2018, WOCN 2018

Posters and Conference Presentations (part 7)

Type of Publication	Reference	Date	Journal / Conference
Posters and Conference Presentations	"Bullough, L. (2015). "CHASING ZERO" Pressure Ulcer Prevention & Root Cause Analysis with the SEM Scanner. Accepted and presented at EWMA 2015. Presented to EWMA, London, UK, 13-15 May."	2015	EWMA 2015
Posters and Conference Presentations	"O'Brien, G. (2015). An Investigation of the accuracy of early pressure ulcer damage assessment using sub epidermal moisture measurement versus nurses' visual skin assessment. Accepted and presented at Wounds UK 2015. Presented to Wounds UK Conference, Harrogate, North Yorkshire, UK, 9-11 November."	2015	Wounds UK 2015
Posters and Conference Presentations	"O'Connor, T. et al. (2015). The Prevalence of Pressure Ulcers in the Acute Hospital Setting while investigating three methods of measuring prevalence. Accepted and presented at Wounds UK 2015. Presented at Wounds UK Conference, Harrogate, North Yorkshire, UK, 9-11 November."	2015	Wounds UK 2015
Posters and Conference Presentations	"Gershon, S. et al. (2014). SEM Scanner Readings to Assess Pressure Induced Tissue Damage. Accepted and presented at Wounds UK 2014. Presented to Wounds UK 2014, Harrogate, North Yorkshire, UK, 10-12 November."	2014	Wounds UK 2014
Posters and Conference Presentations	"Rhodes, S. et al. (2014). Usability & Reliability of the SEM Scanner. Accepted and presented at EPUAP 2014. Presented to 17th EPUAP Annual Conference, Stockholm, Sweden 27-29 August."	2014	EPUAP 2014

White Papers

Type of Publication	Reference	Date	Journal / Conference
White Papers	"NHS Improvement (2018) Revised Recommendations."	2018	
White Papers	"Deloitte Consulting. (2014). Do Healthcare Systems Promote the Prevention of Pressure Ulcers?. [Online] Available at: Link. [Accessed 15 March 2018]. Deloitte Consulting, n.d. [Online]"	2014	

Regulatory Review Papers

Type of Publication	Reference	Date	Journal / Conference
Regulatory Review Papers	"Powell, K. et al. (2021). Wound healing: what is the NICE guidance from the UK. Journal of Wound Care. Vol 30, No 3 p172-182"	2021	Journal of Wound Care
Regulatory Review Papers	"SEM Scanner for pressure ulcer prevention. Medtech Innovation Briefing [MIB182] Published date: May 2019"	2019	
Regulatory Review Papers	"Health Improvement Scotland and Scottish Health Technologies Group. (2016). Innovative Medical Technologies Group 007/2016. [Online]. [Accessed 15 March 2018]."	2016	