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Proof**CONTROL ID:** 1959231**TITLE:** Assessment of Impact of Long-Cassette Standing X-rays on Surgical Planning for Lumbar Pathology: An International Survey of Spine Surgeons**AUTHORS (LAST NAME, FIRST NAME):** Smith, Justin S.¹; Shaffrey, Christopher I.¹; Lafage, Virginie²; Schwab, Frank J.²; Haid, Regis W.³; Protopsaltis, Themistocles S.²; Klineberg, Eric⁴; Scheer, Justin K.⁵; Deviren, Vedat⁶; Hart, Robert A.⁷; Bess, Shay⁸; Arnold, Paul⁹; Chapman, Jens¹⁰; Fehlings, Michael G.¹¹; Ames, Christopher P.¹²**INSTITUTIONS (ALL):** 1. Neurosurgery, University of Virginia Medical Center, Charlottesville, VA, United States.

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ABSTRACT BODY:**Summary (80 words max):** Assessment of long-cassette standing x-rays can have significant impact on surgical planning for lumbar pathology. Failure to account for global spinal alignment when addressing what may appear to be isolated lumbar pathology can have negative consequences. These data suggest that surgeons should maintain a relatively low threshold for obtaining long-cassette standing x-rays when contemplating surgical treatment for significant lumbar spine pathology.**Introduction:** Surgical planning to address significant lumbar spine pathology, performed without appreciation of global spinal alignment, may have negative consequences. Our objective was to assess whether the extent of recommended surgery for lumbar pathology would significantly change with the addition of long-cassette standing x-rays.**Methods:** This was an international on-line survey of spine surgeons. A series of 15 cases of lumbar spine pathology were presented with a brief clinical vignette and lumbar imaging (x-rays and MRI/CT). Surgeons were asked to select the most appropriate surgical plan, with 5 choices, ranging from least aggressive (decompression alone; 1 point) to the most aggressive (upper thoracic to sacrum/ilium fusion +/- osteotomies/decompression/interbodies; 5 points). Cases were then re-ordered and presented with long-cassette standing x-rays and the same surgical planning question. Results were compared based on lumbar imaging only vs addition of long-cassette x-rays. 5 cases (control group) had normal global alignment and 10 cases (study group) had global malalignment.**Results:** 316 surgeons completed the survey, predominantly (63%) from North America and Europe.

Specialties included orthopedic surgery (65%) and neurosurgery (34%), 68% completed spine fellowship, and responders had a mean 13.4 yrs in practice that was a mean of 76% spine and included a mean of 123 fusions per yr. For study cases, extent of recommended surgery increased significantly with addition of long-cassette x-rays vs lumbar imaging only ($p=0.002$). For control cases with normal global alignment, no significant changes in surgery plans were identified with addition of long-cassette x-rays ($p=0.280$).

Conclusion: Long-cassette standing x-rays can have significant impact on surgical planning for lumbar pathology. Surgeons should maintain a relatively low threshold for obtaining long-cassette standing x-rays when contemplating surgical treatment for significant lumbar spine pathology.

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