



COVID-19 Economic Impact: Academic perspective

Stefan O. Schönberg

IS3R Retreat Meeting – 5 November 2020

Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19

The AHA estimates a **total four-month financial impact of \$202.6 billion** in losses for America's hospitals and health systems, or an average of **\$50.7 billion per month**. This estimate was derived by combining the estimates of various components of reduced revenue and increased costs described below.

COVID-19 AGGRAVATES ECONOMIC SITUATION OF GERMAN HOSPITALS



*Lower profit per intensive care bed.
72 % of large hospitals expect a deficit for 2020.*

18 August 2020

HRK: The international character of German universities must be maintained during the COVID-19 crisis



Market for integrated research platforms

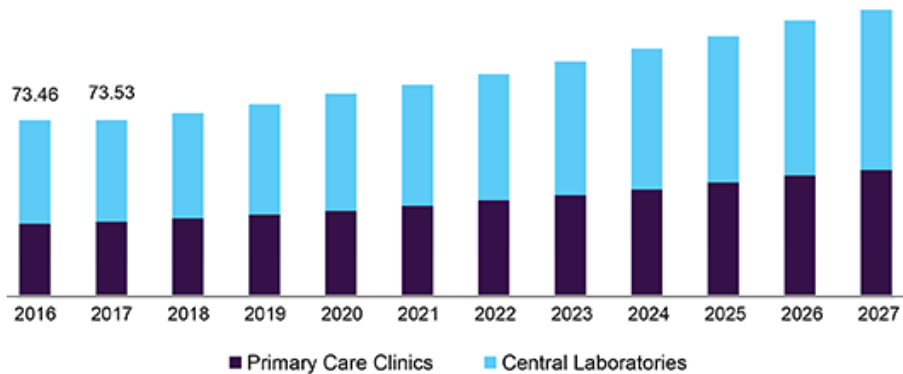


DEUTSCHE RÖNTGENGESELLSCHAFT
Gesellschaft für medizinische Radiologie e.V.

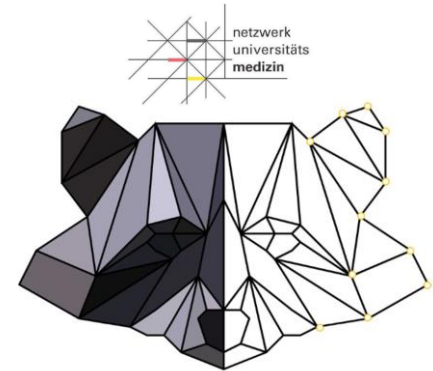


DRG Radiomics Platform

U.S. clinical laboratory tests market size, by end use, 2016 - 2027 (USD Billion)





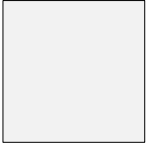

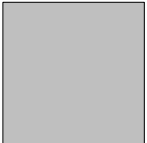
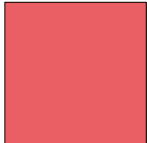
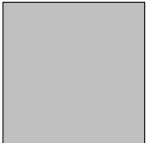

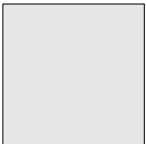
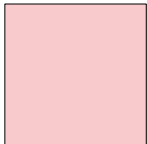
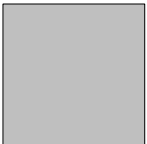

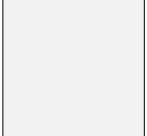



Source: www.grandviewresearch.com



RACOON



The promise of integrated diagnostics

| | Necrosis | | Apoptosis | |
|--------------|---|--|---|---|
| | Radiomics Markers | cfDNA Markers | Radiomics Markers | cfDNA Markers |
| Lung |  |  |  |  |
| Heart |  |  |  |  |
| Kidneys |  |  |  |  |
| Other organs |  |  |  |  |



Clinical and laboratory data, radiological structured report findings and quantitative evaluation of lung involvement on baseline chest CT in COVID-19 patients to predict prognosis

Cappabianca Salvatore¹ · Fusco Roberta² · de Lisio Angela³ · Paura Cesare³ · Clemente Alfredo¹ · Gagliardi Giuliano³ · Lombardi Giulio³ · Giacobbe Giuliana¹ · Russo Gaetano Maria¹ · Belfiore Maria Paola¹ · Urraro Fabrizio¹ · Grassi Roberta¹ · Feragalli Beatrice⁴ · Miele Vittorio⁵


| | AUC | Sensitivity | Specificity | Positive predictive value | Negative predictive value | Accuracy |
|---|------|-------------|-------------|---------------------------|---------------------------|----------|
| <i>Clinical/laboratory model</i> | | | | | | |
| To identify discharged versus hospitalized/died patients | 0.57 | 0.86 | 0.50 | 0.69 | 0.74 | 0.70 |
| To identify discharged/stable patients versus critical/died patients | 0.47 | 0.33 | 0.88 | 0.45 | 0.81 | 0.75 |
| <i>CT model</i> | | | | | | |
| To identify discharged versus hospitalized/died patients | 0.70 | 0.58 | 0.87 | 0.88 | 0.57 | 0.69 |
| To identify discharged /stable patients versus critical/died patients | 0.75 | 0.73 | 0.75 | 0.50 | 0.89 | 0.75 |
| <i>Clinical/laboratory and CT findings model</i> | | | | | | |
| To identify discharged versus hospitalized/died patients | 0.75 | 0.61 | 0.85 | 0.86 | 0.59 | 0.70 |
| To identify discharged/stable patients versus critical/died patients | 0.83 | 0.88 | 0.78 | 0.57 | 0.95 | 0.81 |

“The highest value [...] was obtained by the model that combines clinical/laboratory findings at CT volumes.”





Intimate partner violence crisis in the COVID-19 pandemic: how can radiologists make a difference?

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Table 1 North American cities whose police departments reported increased rates of domestic violence reports (all data directly communicated by the police departments)

| City | Lockdown date | Investigated period | Reference period | Change |
|-------------------|----------------|----------------------------|----------------------------|---------|
| Boston (MA) | March 24, 2020 | March 24–April 20, 2020 | March 24–April 20, 2019 | + 27%* |
| Chicago (IL) | March 21, 2020 | March 16–March 29, 2020 | March 4–March 31, 2019 | + 10% |
| Philadelphia (PN) | April 1, 2020 | March 1–March 31, 2020 | March 1–March 31, 2019 | + 7% |
| Portland (OR) | March 23, 2020 | February 29–March 23, 2020 | March 12–March 23, 2019 | + 20%** |
| Seattle (WA) | March 23, 2020 | February 29–March 31, 2020 | February 28–March 31, 2019 | + 21% |
| Toronto (ON) | March 17, 2020 | March 15–March 28, 2020 | March 1–March 28, 2019 | + 19% |

*“In general, **most IPV fractures affect the face, neck, and head (nasal bones, orbit, maxillofacial bones, skull), with the middle third of the face affected in almost two-thirds of IPV cases.**”*

*“**Many injuries could easily be overlooked or misinterpreted as routine trauma in a busy emergency or radiology department.**”*





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