

WHITE PAPER · MACH7 TECHNOLOGIES & DOCPANEL

Adopting cloud solutions to address burnout in radiology.

Burnout and subspecialty shortages are reshaping radiology. Flexible, cloud-enabled reading is becoming the foundation of a sustainable workforce strategy.

Burnout is not new — but it is accelerating.

Five decades after it was first named, occupational burnout remains a systemic threat to organizational health, employee wellbeing, and patient outcomes.



Burnout is a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' of some kind. As their emotional resources are depleted, workers feel they are no longer able to give of themselves at a psychological level.

Dr. Christina Maslach — Pioneer in the study of occupational burnout, co-author of the Maslach Burnout Inventory (MBI)

Dr. Maslach has studied burnout as a pervasive global workplace issue since the mid-1970s. Its organizational consequences include deterioration in quality of care, absenteeism, increased turnover, low morale, and personal distress.

The concept first appeared in academic literature in 1974. Within radiology, the study of technologist burnout dates to 1982 — characterized even then as negative emotional, psychological, and physical reactions to work-related stress.

WHAT CONTRIBUTES MOST TO RADIOLOGISTS' BURNOUT

Too many hours at work **62%** · Lack of respect from admins, employers, colleagues, staff **43%** · Lack of control or autonomy **41%** · Too many bureaucratic tasks **33%** · Insufficient compensation **31%**

Koval ML, Medscape Radiologist Lifestyle, Happiness & Burnout Report 2023.

The pandemic accelerated an already-rising trend.

Since 2016, academic study of radiologist burnout has grown alongside radiologists reporting higher levels of burnout themselves.

Radiologists directly attribute rising burnout to increasing workloads, their work environment, a lack of autonomy, and feelings of isolation from peers. The last decade saw near-exponential growth in journal publications on the subject — a sign that its effects within radiology are finally receiving warranted attention.

COVID-19 only accelerated burnout rates, especially in radiology departments that served as a key frontline subspecialty in the diagnosis and treatment of the disease.

A 2023 review of 22 academic studies published during the pandemic illuminated a distinct increase in respondents' levels of stress regarding their personal safety, relationships, increased isolation, work conditions, and mental health.

As patients now catch up on procedures and appointments postponed during the pandemic, physicians contend with even busier days and longer hours — fueling stress and exacerbating the issue further.



As patients now try to catch up on procedures and appointments postponed due to COVID-19, physicians must contend with even busier days and longer hours, exacerbating their stress further.

From the report — The compounding effect of deferred care

Turnover is expensive — and the gap is widening.

Healthcare workers are disproportionately affected by burnout compared to other industries. Radiologists who are burnt out are more likely to quit.

Turnover carries both direct and indirect costs. Employee separation, hiring a replacement, training, and outsourcing labor to minimize the gap are all direct costs.

Indirect costs are passed on to remaining employees and patients as longer hours, substandard care, and falling morale — cumulative effects that can snowball into further turnover if left unaddressed.

Even before post-COVID spikes in imaging volumes, the need for more radiologists was already apparent — ACR job-board postings made 2021 a record year for demand.

Retirement compounds the challenge: of 20,970 radiologists in active patient care, **82% are aged 45 and over**, and **53% are aged 55 and over**.

THE PROJECTION

A 2022 AAMC report projects the US will face a shortage of radiologists and other specialists as high as 35,600 by 2034.

AAMC report reinforces mounting physician shortage, 2021. Fleishon HB, The radiology labor shortage, ACR, 2022.

Where do providers turn for relief?

Two responses dominate the conversation: artificial intelligence, and the shift to remote or hybrid reading.

Artificial intelligence. Great progress has been made on sophisticated AI algorithms for assisted diagnosis and workflows. But these are nascent technologies that still require human input, review, and guidance. Many organizations remain reluctant to invest heavily until the algorithms and best practices mature further.

The promise — and its limits

Remote and hybrid work. Teleradiology boomed during COVID-19 to keep staff safe — and radiologists responded positively. Key drivers of burnout (work-life balance, lack of autonomy, inflexible schedules, workroom interruptions, commute) were quelled, producing a happier, more engaged staff.

An unintended, lasting benefit

Historically, radiology departments invested heavily in PACS, powerful imaging workstations, and IT infrastructure for in-house reading. But many of these systems were built decades ago and rely on vendor-proprietary workstations. Not all facilities can support their own remote radiologists — and the cost, time, security challenges, and training required to update legacy infrastructure present significant barriers to adoption.

DocPanel and Mach7, working as one.

DocPanel is a subspecialty radiology platform built to close gaps in coverage. Mach7's eUnity diagnostic viewer makes it possible from anywhere.

DocPanel connects facilities to a network of **700 fellowship-trained radiologists** for dedicated daytime coverage. Providers maintain workloads, launch new modalities, and ensure accurate, timely diagnoses — while radiologists read solely within their specialty, with full autonomy over caseload and hours.

At the core of that model is Mach7's eUnity Enterprise Diagnostic Viewer: an end-to-end, multimodality, zero-footprint viewing solution. Workstation- and vendor-agnostic, it rejects the legacy approach of pushing large data sets — giving clinicians secure access to a patient's full imaging history from anywhere, in real time.

250

healthcare facilities with subspecialty coverage, from Academic Medical Centers to sole providers

800K

patients with subspecialty interpretations — and growing

700

radiologists reading within their specialty, in a flexible environment

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The relationships I get to create with the clients I read for through DocPanel extend far beyond just interpreting cases. Even though I'm reading from Chicago, I'm still able to provide that guidance. Our collaboration enables us to ensure studies are done in a way that best answers the referring provider's questions.

Vaishali Lafita, M.D. — Musculoskeletal Radiologist

Flexibility, customization, and control — from anywhere.

The Mach7 eUnity Diagnostic Viewer gives radiologists unprecedented freedom while reducing the infrastructure and cost burden on IT.



Faster to diagnosis

Advanced hanging protocol technology and programmable hotkeys remove repetitive tasks. Site-based and user-defined protocols are accessible from any location on a zero-footprint, browser-based viewer.



One viewer, one workstation

Read 2D mammography, 3D tomography, breast MRI, and breast US on a single viewer — compatible with iCAD and R2 — reducing the need for advanced visualization workstations and lowering service costs.



Built on what you have

Robust interoperability leverages existing IT systems to reduce costs and maximize investments, with scalability designed to adapt to changing organizational needs.

Speed that holds up remotely. Unparalleled remote image loading — including mammography studies — with real-time cloud access that improves workflow orchestration. eUnity effectively handles network latency and optimizes image loading without specialized hardware.

Easy to adopt, easy to collaborate. An intuitive universal viewer streamlines training and adoption, with presentation states for annotations and markers and real-time collaboration tools that enhance operational efficiency and patient care.



For the past four years, DocPanel has utilized eUnity to provide an advanced viewing platform that is fast, reliable, and intuitive, designed with the flexibility and independence to expand across facilities, geographies, and provider groups.

Nirish Mathias — CEO, DocPanel

Prepare yourself for the future — today.

Burnout is a persistent issue that will not disappear soon. It is likely to become more pervasive as imaging demand grows with an aging global population.

The World Health Organization reports that people aged 60 and older represent **12% of the world's population** — a proportion projected to jump to **22% by 2050**. Older populations require more medical imaging procedures.

It is imperative, then, that health systems begin to consider technology solutions that can meet such a dramatic increase in demand. There is no one-size-fits-all fix for burnout; every organization faces its own circumstances.



The demand for imaging is outpacing what we're doing on the training side. The number of radiologists in the workforce is not growing as fast as the population and the demand for imaging.

Vahid Yaghmai, MD — Professor and chair of radiological sciences, University of California, Irvine

With the right strategy in place, and the right guidance from your IT vendor partners, you can lay the foundation that will prepare you for the future — today.

As a provider of innovative imaging technologies, Mach7 is continuously focused on delivering products and services that enhance the provider experience — giving clinicians the tools, access, and performance needed to take complexity and frustration out of everyday workflows. eUnity supports enterprise viewing for all clinicians while providing complete diagnostic interpretation for radiologists, including subspecialties like mammography — an essential piece of a vendor-neutral enterprise strategy. — **Mike Lampron, CEO, Mach7 Technologies**



LET'S TALK

Build a workforce strategy that lasts.

Together, Mach7 and DocPanel give radiology the flexibility, performance, and independence to address burnout and shortages head-on — without re-engineering the infrastructure you already have.

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FROM PIXEL TO POINT OF CARE.

CR23-001

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