

STRONGER
TOGETHER



Stronger Together: Tech Pathways to Workforce Resilience in Pharma

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What is happening around...?



**Burnout &
Well-being Risks**



**High Turnover
& Skills Gaps**



**Hybrid &
Decentralized Trials**



**Cost Pressure
& Layoffs**



**Regulatory
Changes &
Quality Focus**



**Rapid AI &
Digital Adoption**



**CRO Consolidation
& Platforms**



WHY THIS IS **NEEDED NOW MORE THAN EVER**

Multiple signals suggest work-related stress is widespread and persistent:

41% of employees
“a lot of stress”

Gallup 2024

27% Manager
Engagement

Declined in 2024

61% Prefer
Hybrid Work

Gallup 2024

Industry surveys in 2024–2025 report **50%+** Burnout & Mental Health Strain
in Life Sciences Roles



Accelerated
Submission Cycles



Remote & Hybrid
Teams



AI & Automation
Pressures



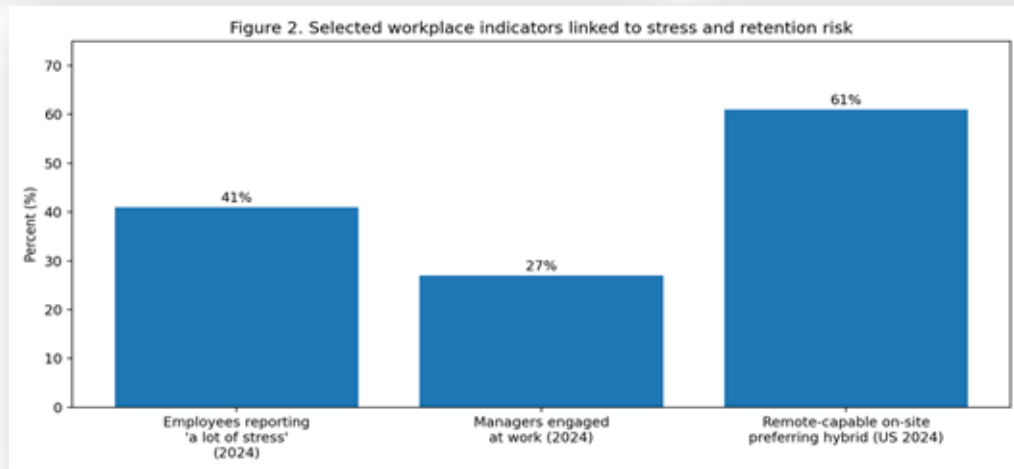
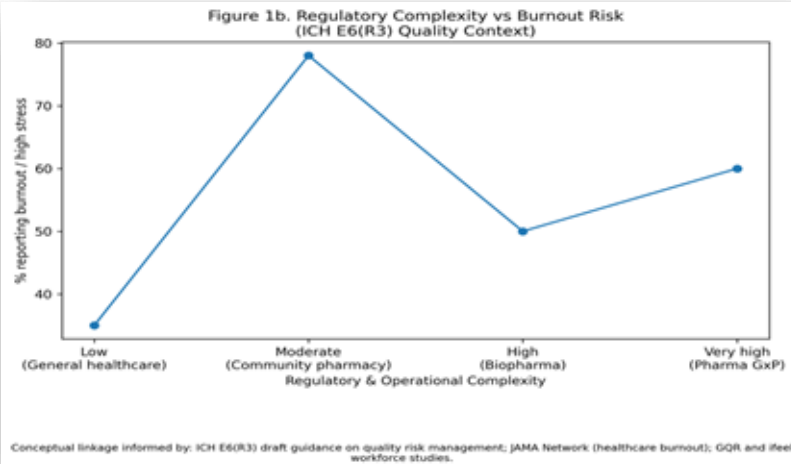
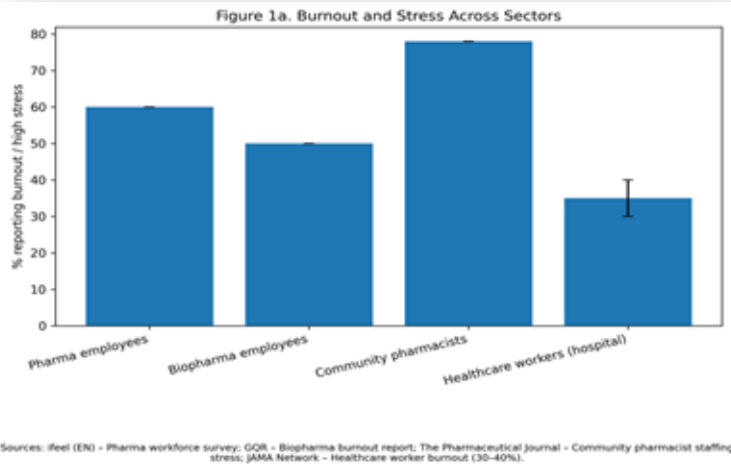
Caregiving &
Health Concerns

“Pressure Multipliers” in Pharma & CROs

McKinsey: Burned out employees are far more likely to leave their organizations.

Resilience is a Delivery & Quality Risk Issue





*Note*These figures aren't exact prevalence rates — they signal systemic risk patterns.*

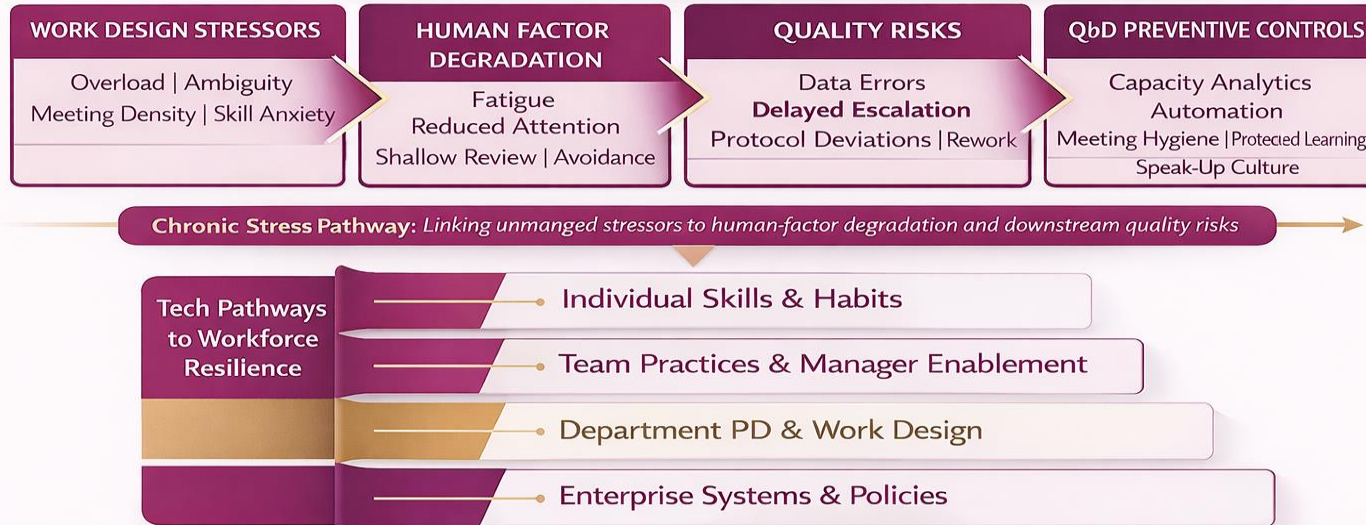
*Note** Evidence cited combines peer-reviewed research and publicly reported workforce surveys. Survey findings are interpreted as directional indicators rather than precise prevalence estimates; however, the broader conclusion that unmanaged chronic stress can affect cognitive performance, documentation quality, and escalation behavior is supported by established occupational health and human-factors literature.*



INTRODUCTION

Workforce Resilience in Clinical Development: A Quality Imperative

Regulatory guidance such as ICH E6(R3) emphasizes proactive quality management and the importance of human factors in clinical development. Sustainable performance in regulated industries depends on intentional work design, tech enablement, and workforce resilience — **align exertion, action.**



Digital tools, analytics, and automation should reduce avoidable load at every layer to boost employee-centric, sustainable performance.



EMPLOYEE-CENTRIC PRINCIPLES: **START WITH WORK, NOT WITH ‘WELLNESS’**

The U.S. Surgeon General's Workplace Mental Health & Well-Being **Essentials:**



Protection
from Harm



Connection &
Community



Work-Life
Harmony



Mattering at
Work



Opportunity
for Growth

STRESS AS A WORKFORCE QUALITY RISK

Stress Driver	Human-Factor Impact	Potential Quality Risk	Preventive Control
Chronic Overtime	Fatigue, Reduced Attention	Data Errors, Delayed Escalation	Recovery Time
High Meeting Load	Context Switching, Shallow Review	Missed Signals, Inconsistent Decisions	Capacity Limits
Tech Change Anxiety	Avoidance, Rework	Non-Compliant Tool Use, Delays	Async Norms, Meeting Hygiene
Ambiguous Priorities	Cognitive Overload	Protocol Deviations, Rework	Clear Escalation Paths
Psychological Unsafety	Under-Reporting Issues	Late Deviation Detection	Speak-Up Culture

3 Design Rules:



Reduce Avoidable Load First

Simplify & Streamline Tasks



Support at Highest Strain

Assist at Critical Moments



Build Skills & Community

Empower & Connect Employees



STRESS AS A WORKFORCE QUALITY RISK: Practical Mapping

Stress Driver	Human-Factor Impact	Potential Quality Risk	Preventive Control
 Chronic overtime	 Fatigue, reduced attention	 Data entry errors, delayed issue escalation	 Capacity monitoring, protected recovery time
 High meeting load	 Context switching, shallow review	 Missed signals, inconsistent decisions	 Meeting hygiene, async-first norms
 Skill anxiety during tech	 Avoidance, rework	 Non-compliant tool use, delays	 Structured PD, protected learning time
 Ambiguous priorities	 Cognitive overload	 Protocol deviations, rework	 Clear escalation paths, manager triage routines

Table 2 maps common stress drivers in pharma and CRO environments to downstream quality risks and recommended preventive controls, reinforcing the alignment between wellbeing and **Quality by Design**.

An employee-centric model uses three design rules:

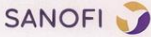
- ✓ **Reduce avoidable load first** (meetings, rework, manual tasks).
- ✓ **Add support at the moments of highest strain** (handoffs, releases, inspections).
- ✓ **Build skills and community** so employees feel capable, connected, and in control.

Technology becomes a pathway when it removes friction and creates time for **deep work** and recovery. it becomes a **risk** when it adds monitoring without trust or adds new tools without removing old ones.



WHAT PHARMA COMPANIES ARE DOING: PUBLICLY REPORTED EXAMPLES

Public sustainability and wellbeing reports show consistent structural elements across large pharmaceutical organizations: **confidential support** (EAP/counseling), **manager enablement**, stigma reduction, digital access, a model of psychosocial risk management.

Company	Publicly Reported Initiatives	Structural Focus	Distinctive Element
 Roche	LiveWell@Roche , global counseling access, psychosocial risk reporting	Universal access + risk-based monitoring	Tracks maturity of psychosocial risk assessments (beyond benefits to measurable risk management)
 NOVARTIS	Mental Health First Aiders , academic partnerships, wellbeing surveys	Training + data-informed improvement	Research collaborations (e.g., LSE, Univ. Zurich) to strengthen program design
 gsk	Global EAP, manager mental health training, resilience	Manager enablement + confidential support	Resilience and energy-management program pilots
 SANOFI	Sanofi "Healthy Minds" program,	Psychological safety + structured risk review	Formal emphasis on speak-up culture and mutual trust
 AstraZeneca	Flexible work models, mental health services, leader training	Flexibility + technology-supported wellbeing	Microsoft-based digital tools supporting employee wellbeing
 Pfizer	Growth-focused culture, external wellbeing partnerships	Culture + employee ownership	Emphasis on colleague development and self-directed wellbeing

Cross-Company Themes (Converging Patterns)



Accessible, stigma free support (EAP, counseling, digital tools).



Manager accountability and enablement (training, psychological safety, workload hygiene).



Measurement without surveillance (surveys, psychosocial risk assessments, maturity reporting).



TECH PATHWAYS THAT IMPROVE WORK-LIFE BALANCE

(AND WHAT TO AVOID)

This section explicitly includes evidence-based digital mental health tools (mindfulness and CBT apps), physiological biofeedback (HRV wearables), immersive recovery technologies (VR relaxation), and AI assistants that remove

USEFUL TECH PATHWAYS



EVIDENCE-BASED & PRIVACY-RESPECTFUL!



WHAT TO AVOID:



Extra "Wellness Homework" Apps

Monitoring Tools that Undermine Trust

Change Job Design, Workload, & Culture—Not Wellness Homework or Surveillance



Mindfulness & CBT Apps



VR Relaxation



HRV Wearables



AI Assistants

Note: AI use in regulated environments must have defined purpose, human oversight, auditable version control, risk-based validation, strong privacy safeguards, and clear accountability. With proper governance, AI reduces cognitive burden while preserving compliance and preventing risk from shifting from systems to individuals.



DEPARTMENT-WISE PROFESSIONAL DEVELOPMENT (PD) PLAN FOR PHARMA AND CROs

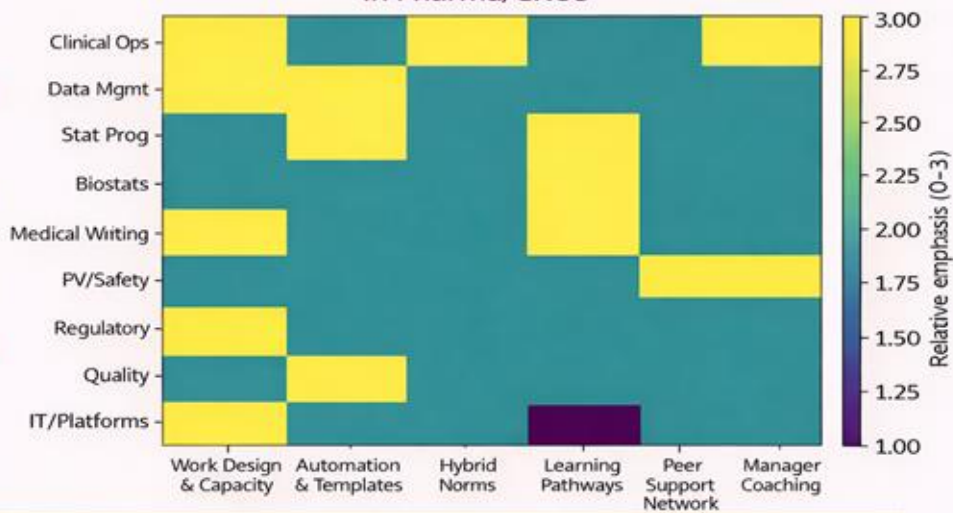
Each PD pathway explicitly blends technical upskilling with stress-prevention mechanisms (e.g., protected learning time, biofeedback-supported recovery, AI-assisted drafting and QC, and right-to-disconnect norms) so development does not become **an additional stressor**. This section provides a practical PD blueprint organized by function. Each plan combines:

- (a) role-based capability building,
- (b) workload reduction levers, and
- (c) team routines that protect balance.

The objective is to make PD a stress-reducing force rather than an added **burden**.



Illustrative Heatmap of PD Levers Addressing Burnout Drivers in Pharma/CROs



Illustrative Heatmap of PD Levers Addressing Burnout Drivers in Pharma/CROs



CROSS-FUNCTIONAL PD COMPONENTS

(RECOMMENDED FOR ALL DEPARTMENTS)

- ✓ **Core skills:** prioritization, stakeholder management, conflict resolution, and boundary-setting.
- ✓ **Manager enablement:** coaching, psychological safety, workload triage, and inclusive leadership.
- ✓ **Digital fluency:** data literacy, prompt literacy, automation basics, and validation-aware AI use.
- ✓ **Healthy work norms:** meeting hygiene, focus time, clear handoffs, and recovery practices.
- ✓ **Access to support:** EAP, peer networks, mental health first aiders/champions, and crisis pathways.

 Core skills:
  Manager enablement:
  Digital fluency:
  Healthy work norms:
  Access to support

Department	(Pharma/CRO)	Stress Drivers	Tech + Process Levers	PD Modules (90-day starter set)
 Clinical Ops / PM	Time zone meetings, rapid re-plans	Time zone meetings; rapid re-plans	Workflow automation; risk dashboards; standardized	Adaptive planning; escalation hygiene, async collaboration; psychological-safety
 Data Mgmt	Query surges, late changes	Metadata-driven checks, automated listings	Metadata-driven checks; automated listings, standardized	Root-cause query mgmt; automation basics, handoff protocols, focus routines
 Data Mgmt	Data Management	Versioned analysis environments	Versioned analysis environments, automated report generation	Decision frameworks; influence; timeboxing; handoff protocols; focus routines
 Biostatisticians	High-stakes	Parallel reviews; comment, triage; He	Case volume; periodic reporting; reuse, libraries	Fatigue risk mgmt; incident debriefs; peer support; micro-learning
 Medical Writing	PV / Safety	Submission peaks, cross-functional dependencies	Submission trackers; controlled templates; eCTD automation	Negotiation; priority trade-offs-stakeholder alignment; calm communication
 IT / Platforms	IT / Platforms / Data Science	Interruptions, incident response, tool sprawl	Digital QMS analytics; automated evidence gathering	Inspection storytelling; resilience in crises; manager coaching

Note: For smaller CROs, combine roles but keep the same logic: reduce avoidable work, protect focus, and invest in capability + protected time.



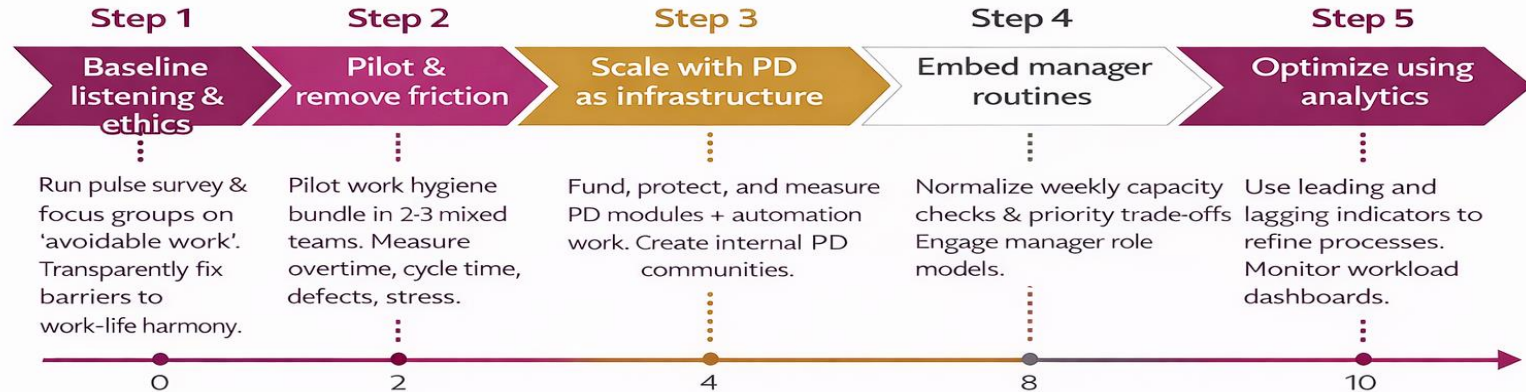
IMPLEMENTATION PLAYBOOK

(12-MONTH MODEL)

Inspection Readiness Implications (ICH E6(R3) Lens)

From an inspection-readiness perspective, workforce stress represents a human-factor risk that can manifest as delayed issue escalation, incomplete documentation, inconsistent application of standards, and reduced critical thinking under time pressure.

ICH E6(R3) explicitly emphasizes proactive quality management, human factors, early risk detection.



Successful resilience programs behave like continuous improvement systems: they start with listening, pilot with teams, scale what works, and measure outcomes.



WHAT INDIVIDUALS CAN DO TO REDUCE STRESS AND MAINTAIN WELLNESS

Practical skills to increase control and recovery

Boundary-Setting Micro-Practices



- 'Default No' Windows
- Response Time Norms



- Convert Requests into Trade-offs

Stress Regulation at Work

- Box Breathing
- 90-Second Reset
- Micro-Journaling



Sustainable Performance Habits

- ▶ Timeboxing
- ▶ 'One-Tab' Focus
- ▶ Weekly Review



Build Connection & Meaning

- ▶ Join Peer Community
- ▶ Seek Support Early
- ▶ Celebrate Progress



Use Support Early

Employee Assistance Programs & Professional Help

- ▶ Act Early to Prevent Chronic Strain





LIMITATIONS AND ETHICAL CONSIDERATIONS

This paper presents a synthesis framework rather than empirical intervention data. The proposed models should be **adapted** to local regulatory, labor, and privacy contexts.



Workforce analytics must avoid surveillance perceptions and ensure voluntary participation where feasible.



Technology adoption should not replace structural workload corrections nor shift responsibility for systemic stress onto individuals.



Ethical implementation requires transparency, aggregated reporting, and active employee voice in solution design.



CONCLUSION

Workforce resilience in the Pharmaceutical ecosystem is achievable when stress prevention is intentionally embedded within work design and professional development, rather than treated as a peripheral wellness initiative.



Accessible Support



Manager Enablement



Stigma Reduction



Psychosocial Risk Focus

Integrating Foundations with Technology for Growth



Save Time



Enhance Focus



Create Opportunities

Stronger Together

Humans & Technology Co-Creating
a Resilient & Humane Pharma Environment





Stronger together is not just a slogan; it is an operating philosophy for how humans and technology can co-create a more sustainable, innovative, and humane pharmaceutical ecosystem.





CONTACT INFORMATION

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