

Think like a Quarterback – Deliver Projects, not fumbles

Eoin Byrne, Plus-Project, Knutsford, UK

Abstract

Leading a clinical trial demands the strategic mindset and flexible thinking of a top quarterback. Just as a quarterback reads defences, adapts to shifting plays, and leads a team under pressure, leading a clinical trial requires us to interpret complex data, adjust to regulatory and logistical changes, and guide cross-functional teams toward a common goal. Both roles require decisive decision-making, anticipation of obstacles, and effective communication. A quarterback trusts the playbook but knows when to call an audible. Similarly, when leading a clinical trial, we follow all necessary documentation but must adapt when real-world challenges arise. Success hinges on vision, leadership, and the ability to execute under uncertainty. These engaging parallels highlight the dynamic and proactive thinking required in clinical research, encouraging professionals to adopt a quarterback's blend of strategy, agility, and collaboration. Thinking like a quarterback doesn't just win games - it can accelerate innovation, improve outcomes, and drive success.

Introduction:

"I'm a little biased, but for my money, there is simply not a harder position in sports than being an NFL quarterback. I mean, think about it, as the Quarterback, every single play you are the focus. You have to know everyone else's job just as well as your own. You can't hear half the time, the weather's bad, and you've got 300lbs Line-men trying to kill you. Win or lose, you are going to be front and centre. You have to give credit when it's good, you have to take the blame when it's bad, you have to face the music when times are tough." These words from Hall of Famer Peyton Manning seem very dramatic compared to leading a clinical trial through to delivery. Still, there are some incredible similarities, even if they seem far less physically demanding.

The modern National Football League (NFL) Quarterback serves as the strategic leader on the field, coordinating a diverse team, quickly analysing the data available to them, and making high-impact decisions under intense pressure. In much the same way, the Lead Programmer or Lead Statistician of a clinical trial must take on large volumes of information, communicate with multidisciplinary teams, and ensure that each decision advances the goal of producing reliable scientific results. Both roles demand situational awareness and adaptability, which underpin the successful outcomes, whether measured in touchdowns or trial endpoints.

Manning also once said that success is about staying focused, adapting quickly, and reading the whole field and not just what's right in front of you. That mindset resonates deeply with the challenges we face in leading our deliverables. We need a clear view of the entire study landscape laid out before us. This allows us to assess, adapt, and determine the best path ahead, even as the picture continues to evolve.

This paper will explore some of these parallels between elite high-level Quarterbacks (QB) and leading a successful deliverable, not just as a metaphor, but to recognise the demands of clinical trial leadership in a relatable way. By looking through the lens of the quarterback, we can see the critical importance of biostatistical insight, team coordination, and fast, informed decision-making in driving our results forward.

Key aspects

The names Peyton Manning, Tom Brady, Patrick Mahomes and Aaron Rodgers are names that many recognise regardless of their knowledge of American Football. These Players have transcended their sport through their elite quarterback play, and while each of these players has their own style of play, they all have several common key skills. Anticipation and timing, poise under pressure, smart decision-making, and resilience are often seen as the "X Factors" in these players that set them apart. But we can all think of leaders and decision makers we have worked with that show these skills time and time again. The study lead that foresaw a delay in data transfers, due to issues that had happened during dry runs putting in the fail safes of additional time to mitigate this. The Project programmer that despite several stakeholders all requesting their piece of work first, could calmly respond with the realistic deadlines that suited all parties. The lead that even when several different unexpected issues crop up, regroup, re-evaluates and finds a way to continue towards their deadline all the while making notes on how to avoid these issues in the future.

All these skills and abilities are brilliant to have but they need to be focused and aligned with the rest of the team to pull in the same direction and aim for that collective success. While the final success is obvious how we get there is very much broken down and has many moving parts. This happens in American football too, its obvious you want to score a touchdown but how are you going to do that? This is where the playbook comes in.

The Quarterback Mindset: The New Leadership Playbook

At first, an American Football playbook looks massively overwhelming with dozens of diagrams, arrows, and routes that must be memorized. But when you break it down, every play has a sequence of steps that build on one another. Clinical trial milestones work in a similar fashion; the creation of the protocol is like sketching out the play we are just trying to decide where the ball should go and what success looks like. The setting up of the database, our CRF and SAP gives a more final look to our playbook determining the concepts we want to run and how exactly we want to execute these.

Regulatory approvals and guidelines are the equivalent to checking that every play is legal within the laws of the game. This means that when the live data come in we are able to execute the play, this is the moment the ball is snapped, and the play goes live for QB. From there every member of your team has a role as you march down the field to provide your deliverable. This requires us as quarterbacks to clearly communicate the correct play to everyone involved but also requires everyone on our team to know the playbook as well, so we need to ensure that we give everyone enough of a chance to see it, digest the play and clarify any questions. As, if one person misses an assignment, the timing is off, and the whole play risks breaking down.

The real skill in all of this is in the communication to ensure complete coordination. Success isn't about one hero move, but about executing a gameplan where every step matters. In football, that means a touchdown. In clinical research, it means reliable results that can change patient lives. Our gameplan as Clinical Trial QBs is a deliverable timeline, each step a different task. Our gameplan doesn't have the answers to each step we need to take but shows when certain things are to happen. For example, it doesn't really matter what safety datasets we create first, but we know ADSL must be made first. Now we can look at this in two ways holistically or algorithmically.

Communicate the Play: Ensuring Team Alignment and Execution

No matter how good we are our pre-snap reads or our ability at recognising the blitz, without clear communication we don't stand a chance. Besides the quarterback the huddle is one of the most recognisable aspects of American football. It is where our personnel group learns their role, timing, and adjustments before we start anything else.

This same principle applies to us as Clinical Trial Quarterbacks, clear, concise and structured communication is what allows all the strategy to be executed. Our "huddle" as Clinical Trial QBs should be used as our way to align priorities, clarify expectations, and share crucial information.

Building a Common Language

Within the huddle the Quarterback calls the play, "Trips right, bunch Z short, 76 double go, alert X shallow cross, Omaha" to the players, everyone knows what this means, Trips right is the formation, bunch Z short will be how the receivers need to align. 76 double go will tell them where they need to go, and alert X shallow will be the adjustment if required. Not every team in the NFL might run this exact same play however how the play is called may differ so within our teams we need to ensure we are building a common language, so we all know what we need to do to execute the required play. The best way to cut down on possible miscommunication is to set out clear communication plans early on:

- **Defined Methods:** Set expectations for different types of communication requirement, instant message or informal calls for real-time collaboration, email and scheduled meetings for formal updates, version control or code-related communication on an appropriate platform like JIRA or GitHub.
- **Shared Vocabulary:** Maintain a common language for deliverable milestones, and validation processes. Trying to avoid acronyms or at least explain what acronyms mean, avoiding ambiguity and assumptions being made.
- **Documentation Discipline:** Required and formal documents need to be appropriately filled in as per requirements, however if we can ensure that whenever changes occur, decisions are made, or milestones are met we keep non-regulatory documentation consistent, this will ensure that when we look back on our progress its clear where we are.

Clarity and Feedback

A successful play depends on each player knowing their exact role and executing, it also requires them to trust that others will do the same. For us, a team member not knowing their role or not trusting them to execute can manifest as huge inefficiencies or concerns in data derivation, QC, or reporting that can ripple across the entire delivery. To avoid this, one method we can consider is to promote role clarity, through transparent accountability and continuous feedback.

- Defined Roles, Clarify the responsibilities for programmers, statisticians, and data managers at the outset of a request or project to guarantee each function understands how their input and task connect to the next stage in the study life cycle.
- Planned Check-ins, Regular but brief stand-up calls to highlight potential roadblocks early and maintain visibility across team and functions
- Everyone has a Voice, set up processes that enables feedback from all team members, not just through top-down channels. For example, provide universal access for team members to Data issue logs so that not just leaders can raise data queries.

Adaptive Communication

Effective communication requires us to adjust the style and content based on the audience's expertise and priorities within a single Biostatistics deliverable. Clinical Trial Quarterbacks will need to communicate with a range of different stakeholders requiring different information to different levels of granularity. Within an American football team, the Offensive line needs different information than the receivers to do their job successfully and it is essential that the Quarterback shares the right information clearly concisely:

- When we talk with programmers, we often need to discuss technical precision and in granular detail, specific coding logic, derivation issues and variable specifications.
- Statisticians on the other hand are focused on analytical assumptions and often have a several reviews within our deliverable cycle, we need to highlight bigger picture issues, rather than the granular cases.
- As we move on again to sponsors and other stakeholders our language should adjust and translate our technical updates and specific data issues into possible risk mitigations, and overall impacts on study timelines.

Tailoring communication in this way ensures that information is not just delivered but absorbed. We then provide context and not chaos that can be acted upon appropriately. When every audience receives the right level of detail in the right format it allows us to align seamlessly with expectations.

Pre-Snap Read: Assessing the Field Before Executing

Survey the Entire Landscape

Before a QB ever calls for the ball, they begin with their pre-snap read, a moment of observation that transforms uncertainty into understanding. In those few moments of calm, the QB scans the entire field, checking what he is up against, how the defence is currently aligned, spotting their tendencies, and predicting how they will move once the play begins. This is all part of active step in ensuring that all parts of the team execute in unison.

Similarly, within biostatistics, the "pre-project read" determines everything that follows. This our moment of calm to mentally prepare pre-snap. How the data is collected and delivered to us, the capacity and capability within our team, and our strategic foresight. In this time, we unknowingly take on a lot of information and not only try to make judgements about visible keys (the defensive alignment), deliverable timelines, and resource allocation. We also predict how to navigate team morale, stakeholder requests, and industry shifts. Surveying the entire landscape allows us to move past the blinkered approach of planning and will make us more holistically aware of our project.

Recognize Defensive Formations

The NFL quarterback quickly learns that not all plans will survive the snap of the football. What matters is not the initial play call but their capacity to *read the defence*, this is the ability to reacting to what they see in front of them. Within clinical trials and programming projects, "defences" can be a huge number of different challenges; legacy systems, changing statistical endpoints, or Stakeholder reprioritizing studies midway through. At times the

“defence” may be within our team or ourselves, an unwillingness to take risk, miscommunication or expectation or timelines, or fatigue among programmers.

Just as a (QB) can spot the blitz or zone coverage, we can pick up on these obstacles and transform it into information for us to adapt our strategy. Anticipating potential disruptions allows us to not panic at the sight of complexity; instead, we *adjust the playbook* in real time.

If moving to open source is part of our company objectives yet we are working with legacy SAS studies, maybe continuing to use SAS for these projects allows us to work more efficiently utilizing previously produced code allowing us to meet more aggressive timelines. Adapting our approach to how we document information during busy times can ensure that even the sceptical stakeholder can be reassured that our results are reproducible. Like a quarterback changing the play just before the snap (calling an audible), we need to recalibrate under pressure and be proactive rather than reactive.

Know Your Personnel Package

For a QB a personnel package is not about the whole roster but knowing the individual's precise skillset, who can handle the low percentage pass, who thrives in traffic with so many moving parts, and who needs clear space to operate at their pace. This awareness allows a QB to distribute the ball where it needs to go to get the best outcome.

Each programmer, statistician, and analyst brings with them their own unique skill set, not just the technical ability but the skill set of where they are most likely to succeed. The leader's role is to *understand these skillsets* and align them with project demands.

- Who has deep regulatory experience in CDISC standards and can navigate complex define.xml outputs?
- Who thrives in agile R workflows, crafting dynamic R Shiny applications for exploratory analyses?
- Who has the communication skills to bridge the gap between clinicians, data managers, and programmers, turning scientific questions into coding logic?

Knowing the “personnel package” allows you to assemble your team not by hierarchy but by *complementary abilities*. You're not merely assigning tasks you're choosing the play that will allow the team to succeed. When team members are placed where they are most efficient, leading a project becomes less about micromanaging individual tasks and more about allowing our players to make plays. The right personnel, in the right role means we turn analytical drives into touchdown worthy outcomes.

When we master the “pre-project read” through, surveying alignment and perceiving what is going to develop in front of us, we grow from game managers into cerebral quarterbacks, we no longer just run plays blindly. However, we need to ensure that our personnel group is right for what we want to run, so that when the ball is finally snapped the entire team moves not by command, but by knowing the play.

Handling the Blitz - Navigating High-Pressure Situations

We mentioned before about recognising the blitz. In the NFL facing, the blitz means the opposing defence sends extra defender to disturb the quarterback before the play can develop. How a leader responds in those instances reveals not just their skill, but their composure.

In biostats, a blitz will take many forms, and we will all face at least one if not multiple through our study's life cycle. A sudden regulatory revision from the FDA or EMA, a data integrity issue, the unexpected departure of a team member, or non-negotiable timeline compression. These moments test us and our team's technical ability but our ability to adapt under pressure, ensuring we can remain agile, decisive, and protective of our team. As stated previously we must try and anticipate and prepare for these moments and transform them into opportunities to progress.

Pre-Blitz Preparation

While it sounds obvious, elite QBs don't wait for the blitz to happen in the game to determine how they would respond, they study defensive patterns, tendencies and scheme allowing them the best opportunity to counter long before they step on a pitch, so how can we prepare in a similar fashion? One of the main ways we can combat this is ensuring our projects have a level of built-in adaptability, ensuring that when the unexpected happens, we can redirect quickly and avoid “taking the oncoming hit”

Practical strategies include:

- Ensuring that programming is flexible this allows for quick changes in variable definitions, metadata, or derivation logic. Code should be readable, reuseable and adaptable where possible so that when SAS macros or R functions change there is minimal downstream disruption.
- Identify programming backups early to safeguard against unexpected absence. Also encourage shared code ownership through version control systems like GitHub, ensuring any team member can step in without hesitation.
- Scenario Planning: During project kick-off meetings it may be worth highlighting common “blitz scenarios” and how the team would mitigate the situation. For example, if there are delays in data transfers, or system outages how would the team respond?
- Cross Functional Collaboration: Maintain strong working relationships with data management, clinical, and regulatory teams as collaboration can help accelerate the solution.

Spot the Clues that a Blitz is on its way

As we touched on quarterbacks read the defence pre-snap, detecting subtle cues that might tell them a blitz is on its way. So a Biostats QB we must be aware of patterns before they become problem, this requires we are both technical aware and culturally transparent to identify emerging threats early.

- Early Warning Signs: With proactive monitoring of progress and resource allocation we can try to anticipate upcoming issues, as deviations from the norm can point towards upcoming challenges.
- Build a Culture of Empowerment: Promoting principles whereby our teams feel safe raising concerns without a fear of blame, accelerates issue escalation and resolution.
- Proactive over Reactive: Encourage proactive reporting of risks, not just retrospective summaries.

These are just a few of the steps to ensure as leads we have a whole picture, the more information we have the less likely we are to be blindsided by a blitz we didn't see coming. The earlier you recognize a blitz, the more options you must respond to it.

Quick Decision-Making

When the defence does blitz, hesitation can be the difference between winning and losing. The quarterback must process information in a split second and throw the ball decisively and accurately. We in clinical trials also need to make decisive choices despite the uncertainty, working with our team or across to provide quick coordinated responses even when not all the information is available to us. One of the ways we can make these decisive calls is by having a predefined escalation protocol, this would mean that when something does happen each member will already know who they need to contact. For example: if data issues threaten the delivery timeline, someone may take on the adjustment of workflow, while another team member handles communicating the issue to stakeholders.

Having something like this demonstrates confidence within your own ability as a lead calming teams in these stressful situations. Confidence is also infectious and can also ensure the rest of the team feel more confident in their ability as you lead this project.

As Peyton Manning once said, *“Pressure is something you feel when you don't know what you're doing.”* I think this is more we feel pressure when we aren't fully prepared for what a situation throws at us. In biostats those who handle pressure the best are often those who prepare studiously, recognize challenges early and make quick decisions. By approaching every blitz, no matter what it is, as an opportunity we can turn defensive pressure into offensive opportunity.

Calling the Audible: Adaptive Leadership in Real time

Some of the most memorable plays in football history have often been the result of an audibles, those split-second adjustments when the original plan won't work. While leading a project, your ability to “call audibles” separates good leaders from great ones.

For example, you are several weeks into your ADaM dataset programming timeline and there is a revision of the endpoint definitions. Suddenly, the statistical analysis plan (SAP) no longer aligns with your programming deliverables. What would you do? Panic? Assign blame? Now is time to call an audible.

Calling an effective audible in a programming requires three things, recognition of the problem, communication of the adjustment, and execution of the solution. These are all the same things we need to communicate our play initially but without the opportunity to “huddle”.

For us to pull off an effective audible we first need to recognise that the current strategy, process, or toolset will not achieve the intended outcome. Taking the same scenario as before, rigid adherence to the original plan creates inefficiencies, rework, and frustration. As mentioned, when diagnosing the defence, we want to develop an environment where all team members feel empowered to raise early warnings signs they see. This recognition of possible mismatches then becomes a shared responsibility, not a top-down observation.

For a Quarterback, an audible can be just a few words to a specific play that everyone knows, for us we need to provide clear and context driven information. We are not only trying to announce a change but make sure everyone within the team understands the reasoning, the new objectives and their responsibilities.

“We need to adjust to align with the updated endpoint definition. The Datasets team will revise the ADaM derivations. The output team will adjust the corresponding outputs that have already been completed to reflect the changes where necessary. The next deliverable will shift by two business days. The impact summary and the amended timeline can be found in the Link below”

Once the audible has been called we must commit fully to executing it. Half-measures erode momentum and dents confidence. Ensuring we stay disciplined while adherence to regulatory standards with creative problem-solving is key. This shows not only our technical credibility but gives us the means to enhance the project long-term robustness

The Check Down: Smart Risk Management and Incremental Progress

In American football, a check down is a short, safe pass to an open receiver when deeper routes are well-defended, or pressure is closing in on the quarterback. It's not flashy, but it keeps the offense moving, avoids costly turnovers(mistakes), and maintains control of the game.

In biostatistics the same philosophy applies we understand that sustainable success often comes not from dramatic breakthroughs, but from steady, calculated progress. When project timelines compress, data delays arise, or priorities shift, we need to avoid the temptation to chase perfection at the expense of momentum. This is where we need to know the difference between pre-emptively calling an audible and instead take the strategic “check down”, looking at intelligent risk management, and consistent forward movement.

Keeping the Chains Moving

In American football, a team has four attempts to move the ball ten yards, success isn't about scoring every play but moving the chains and consistently moving toward our goal of scoring that touchdown. We also should consider ways that we can keep moving the chains and making measurable advancements towards our delivery rather than all or nothing milestones:

- Sharing draft SDTM domains or preliminary ADaM datasets early to confirm structure and content before finalization.
- Delivering interim statistical tables or listings for key study populations while more complex outputs (e.g., biomarker analyses, PK/PD results) are still under development.
- Providing mock-up reports or visual prototypes using R Markdown or Shiny dashboards to gather feedback on format and usability.

Check Downs, Not Just Touchdowns

The ultimate goal in football is to score a touchdown, but teams only reach the end zone by stringing together successful plays. Leadership in biostatistics is no different.

If completion of a project is our “touchdown”, then we often require numerous smaller wins to progress towards that, clean interim outputs, early review and approvals. Waiting until everything is perfect before sharing progress introduces unnecessary risk and potential delays.

For instance:

During Late Dry Runs, many populations like study-population and safety may have been reviewed multiple times and are ready early. Meanwhile, biomarker or pharmacodynamic data may be delayed in their delivery, with limited review cycles. Rather than delaying the entire package, our “checkdown” can be to send the populations that are ready first, allowing reviewers to begin their assessments while the remaining analyses is worked on and completed. This staggered delivery model not only mitigates risk but also extends the team’s effective working time on later outputs keeping the team ahead of the chains.

The best teams win not because they take the biggest risks, but because they are smart in the way they play the game. In biostatistics, that means recognizing when to change the process and when to rely on steady, methodical progression. Prioritizing small gains, and balancing risk vs reward is the marks of strategy. These “check downs” keep things moving, protect timelines, and create safeguards within tight timelines when it matters most. Ultimately, great biostatistics leaders know that progress is made one smart play at a time.

Building Your Offensive Line: Team Development

Quarterbacks may receive the spotlight, but their success depends on the strength of the team protecting them. In football, the offensive line is the unsung unit that creates the pocket of safety and stability, allowing the quarterback time to read the field and execute the play. In biostats our “offensive line” is the rest of our team as they protect timelines, safeguard data quality of the deliverable, and absorb the operational pressure that enables leads to think strategically rather than reactively. Neglecting this foundation, no matter how experienced or talent we are we will spend the project in survival mode. Investing in your “offensive line” means investing in technical excellence, team cohesion, leadership depth, and recognition.

Invest in Technical Excellence

An Elite Quarterback behind a weak Offensive line will face a higher amount of pressure from the defence, will be hit by the blitz more often and won't be able to perform at their best. This is why you will see teams invest in their offensive line and why teams with the strongest offensive line often make it to the Superbowl, as a Quarterback is only as good as his protection. We should therefore ensure that we are constantly investing in our Offensive Line.

- Offer targeted training in SAS macro-optimization, R package development, CDISC implementation updates, and statistical programming methodologies.
- Encourage programmers to become multilingual across additional languages (R, SAS, Python) and environments, reducing single-tool dependency.
- Promote lunch-and-learn sessions, sharing documentation repositories to embed best practices within the team.
- Request dedicated professional development funds, many believe that training slows delivery, but this is a long-term investment to accelerate innovation in the future by expanding your team’s knowledge base.

Great offensive lines aren’t built on starters alone, they ensure they have depth within their unit, so backups can jump in seamlessly. In biostatistics, strong leaders should work the same way. Our success depends on developing future leaders who are ready when changes happen.

That means:

- Spotting high-potential talent early, team members that demonstrate technical excellence and show growth and accountability within their work.
- Challenge emerging talent with stretch goals, giving small project or delivery leadership roles, Complex QC or Oversight work
- Including them in strategic conversations increasing their exposure to more of the decision-making processes. This will also provide additional guidance in both technical and soft skills like communication with stakeholders.

Quarterbacks rely on their linemen so they can do their job, biostatistics leaders thrive when they recognize the team supporting the deliverable. Public praise, thoughtful reviews, and celebrating team wins build trust, motivation, and loyalty. When teams feel seen, they stand strong together. Investing in our team

our “offensive line” becomes stronger, and we gain time and confidence to look downfield to make and execute our play. If we neglect the development of our Offensive line every challenge becomes a scramble.

Film Study: Learning from Wins and Losses

All quarterbacks at every level study their game tape, not for self-congratulation of the stuff that went right, but for growth in the areas where things didn’t quite work out. Every snap, every throw, every missed read becomes a learning opportunity. Success on the field is built not only on executing a plan based on your instinct but on reflection and looking to continuously improve. Within Biostats this same “film study” is the process of turning past project

experience into future process improvements. Every study, every deliverable, every review provides us with data on our *performance* as the QB. How teams collaborate with one another, where bottlenecks occurred, and how the decisions we made impacted the outcome outcomes. So how can we capture this information and insure we provide a better insight into our next game.

Encourage Retrospective Learning

Every project tells a story of strategy, execution, and adaptation. Too many teams, however, rush to the next engagement without documenting lessons learned, allowing valuable knowledge to fade.

- After Action review Meeting to highlight where things went well, but also the things that didn't and what we learned from that.
- Capture Alternatives: During these meeting we should encourage team members to share ideas or approaches that could have worked better in the future or highlight opportunities missed.
- These meeting and how the notes are documented should take a standardised form and layout, meaning that we can collate several of the these together and see if we are learning from our past studies and if not, we can recognise what process is causing teams the issue.

The ultimate test of film study is whether it improves the next game. This means that we should try and incorporate the retrospective insights into our next project planning and potentially to our standard operating procedures. If we can encourage that learning becomes a habit, organizationally we continually keep moving forward.

Celebrate Wins, Own Losses, Build Trust Through Accountability

"Film Study" is like any form of feedback and its effectiveness is determined by whether the team engage with it honestly or defensively. We need to promote a safe environment for the team by owning mistakes publicly and giving credit generously when it is due, As mentioned in the introduction "...You have to give credit when it's good, you have to take the blame when it's bad, you have to face the music when times are tough." If we can credit the team, own our errors and highlight our vulnerabilities and imperfections in our approach, then our teams know they can reflect on mistakes without fear allowing progress and learning to accelerates.

An American football team is not just the 11 guys on the pitch at one time it's the whole organization, from the owner, the coach, right through to the fans. So when the team wins on Sunday everyone wins, So when we win on our projects, our stakeholders, our organisation and hopefully the patients as a whole win, this means that what we learn in these film sessions shouldn't just remain within our team but be shared for our organisations to also benefit from the knowledge your team has gained.

Film study transforms experience into wisdom. It highlights and gives a platform to celebrate the win and what worked well. It also gives the opportunity for growth when we identify the walls we ran into during the project. We all deal with complex derivation and trial designs, internal and external pressures, along with a constant sense of change in an industry that refuses to keep still. To be Innovative leaders we should encourage all our team to debrief, adapt, and improve continuously, not simply deliver.

Great quarterbacks don't just react to the next game; they learn from the last one

Conclusion

Leadership in biostatistics mirrors the role of a quarterback demanding quick thinking, adaptability, and seamless coordination under pressure. The best leaders read the field, anticipate challenges, and adjust strategies in real time, turning data complexity into actionable progress.

As Biostats QBs, we should take our time to call the huddle, communicate the play to the entire team, when the huddle breaks. The team can be prepared, we can make our pre-projects reads, identify the potential tendencies and blitz. We should consider trying to move the chains consistently and if what the defence is showing us will cause us real problem, we should then call the audible to give the team the greatest opportunity to win.

After the game we need to head to the film room and as a team review the game film, highlighting the positive and how providing areas for improvement. During this time after the game and prior to the next kick off we should invest in offensive line to ensure we have even better protection next time.

We don't just innovate by adopting new tools, it requires us to foster a culture where technical ability, collaboration, and clear communication drive every successful play. Just as a quarterback relies on their team's protection and precision, we depend on our skilled programmers, statisticians, and QC specialists working in sync toward a shared goal.

Quarterbacks usually win the Most valuable player award at the end of each season, but we should remember “The most valuable player is the one who makes the most players valuable.”

REFERENCES

- Getz, K.A. and Campo, R.A., 2017. Trial complexity and performance: Lessons learned from recent clinical research practice. *Therapeutic Innovation & Regulatory Science*, 51(5), pp.606–613.
- Sully, B.G., Julious, S.A. and Nicholl, J., 2013. A reinvestigation of recruitment to randomised, controlled, multicentre trials: A review of trials funded by two UK funding agencies. *Trials*, 14(1), p.166.
- O’Leary, D.E., 2016. Team communication and coordination in clinical research: Lessons from high-reliability organizations. *Journal of Clinical Research Best Practices*, 12(4), pp.1–10.
- Moe, N. and Smite, D., 2008. Understanding a lack of trust in global software teams: A multiple-case study. *Software Process: Improvement and Practice*, 13(3), pp.217–231.
- Zucker, D.M. and Kaplan, C.P., 2018. Leadership competencies for clinical research: Developing and managing multidisciplinary teams. *Journal of Clinical and Translational Science*, 2(5), pp.273–277.

RECOMMENDED READING

- Gawande, A., 2009. *The Checklist Manifesto: How to Get Things Right*. New York: Metropolitan Books.
- Katzenbach, J.R. and Smith, D.K., 1993. *The Wisdom of Teams: Creating the High-Performance Organization*. Boston, MA: Harvard Business Review Press.

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Author Name: Eoin Byrne

Company: Plus-Project

Email: Eoin.Byrne@plus-project.co.uk