

My Experience and Commentary as the Head of CRU

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I accepted the appointment as the head of the Clinical Research Unit (CRU) at HSAAS Teaching Hospital, driven by an unwavering passion for the unit's overarching objective—to advance the cause of high-quality clinical research. This fervour was reaffirmed with each engagement in the multifaceted tasks and responsibilities the role entailed, never succumbing to the bitterness of exertion but rather finding invigoration in the pursuit of our mission.

The efficacy of CRU, I recognized, hinged directly on the collective prowess of its staff, fortified by the material and non-material support graciously provided by the hospital administration and its affiliated members. The same cause-effect would be seen in any academic institution. When the journey and battle is hard-fought, collaborative inter-dependence of concerned parties should communicate to resolve challenges and not (misusing re-structuring) to break-up into more independent units (refer to principles of The 7 Habits of Highly Effective People) [1]. The cultivation of the ability to produce high-quality research necessitated a comprehensive approach, involving immersion in research-related literature, participation in workshops, participation in experienced research teams, and progression into leadership roles within the clinical research domain, all under careful supervision. This process is keenly facilitated by CRU for all attendees to CRU's activities.

Amidst the myriad challenges encountered, I came to appreciate that a pivotal strategy for surmounting obstacles lay in perceiving the potential of clinical research projects as genuine contributors to positive impacts on patients and the broader population. Infusing an element of enjoyment throughout the research process and seeking guidance from experienced colleagues and research centres, such as CRU, proved invaluable in overcoming hurdles. These were always communicated to participants in

CRU's organized activities and clients to Research Design Clinic (RDC). The prevalent misunderstandings about clinical research as I came across from the RDC are shown in the Table 1 below. The main causes may include the mixing up of routine clinical practice (where flexibility is cherished) and the conduct of clinical research (where strict adherence to the research protocol is unconditionally expected), ill-founded topic selection and the unsound approach through the whole research process leading to non-feasibility, inefficiency, and careless planning. Statistical analysis strategy was poorly understood and scanty in many research protocols. This indicated that this critical part of scientific research was not taken seriously as the essential science of estimation and inference from study samples to the larger population.

The first step to high-quality research is to have the researcher to believe in and to aim for the real potential impact of research outputs on the community.

The main causes of many problematic research protocols might include the mixing up of routine clinical practice (where flexibility is cherished) and the conduct of clinical research (where strict adherence to the research protocol is unconditionally expected), ill-founded topic selection and the unsound approach through the whole research process leading to non-feasibility, inefficiency, and careless planning. Statistical analysis strategy was poorly understood and scanty in many research protocols.

Table 1: common issues encountered in clinical research protocols according to the three research phases and in the descending order of prevalence*

Theoretical Design	Data Collection Design	Statistical Design
1. Non-convincing understanding of the topic to be researched (inadequate literature review) 2. Non-engagement of the target users of the research outputs 3. Inadequate expertise in the team	1. Inefficient sampling, emphasising the label over the mechanism of the methods 2. Low quality tools 3. Sloppy measurement process 4. Low emphasis on the potential of data quality	1. Incomprehensible and down-sized sample size estimation risking underpowered study 2. Severe omission of the right statistical tests for the dataset created from specific study designs 3. Serious lacking in data quality control measure 4. Non-application of models diagnostic and sensitivity analysis to confirm statistical robustness of the effect estimation/findings 5. Ignorant of advanced statistical strategies to overcome data issues
1. Feeble ability to stay coherence and consistent in the whole research designs for the research objectives decided 2. Lack of transparency in making publicly available of the research protocols missing the many benefits of Open Science such as early opportunity of collaboration, sharing of resources, verifiable of results and expedited/enhanced dissemination of research outputs 3. Academic writing that is not close to the scientific writing, lacks clarity and readability		

*based on the author experience

The attainment of "High-quality Research, True Academics, Real Experts" could be materialized through a sequential evolution, stemming from an ingrained culture emphasizing meticulous attention to detail and accuracy, fostering respect and integrity, and nurturing a collaborative spirit in the pursuit of clinical research objectives. This metamorphosis will extend beyond the individual, with an ardent commitment to knowledge-sharing and the responsible mentorship of younger generations, thereby collectively influencing and guiding society toward a brighter future. This encapsulates the core-essence of an academic centre. Ploughing the ground-up in the mentioned sequence would return desired crops in both short- and long-term, multiplying as the time pass. Forgoing this vision for short-term gain is slow suicide for any academic centre.

The birth of the RECRUS Research Newsletter marked a significant milestone—a watchtower and lighthouse guiding us toward the best practices in clinical research. It served as a vigilant beacon, calling attention to the latest positive trends and cautioning against detrimental behaviours within the intricate landscape of clinical and biomedical research.

In the realm of disseminating completed research within HSAAS, the Research Colloquium emerged as a platform, not merely for sharing findings but also as an opportunity for researchers to translate actionable research evidence into clinical practice, either directly or indirectly. This dynamic forum aimed to bridge the gap between research and its practical applications.

Beyond these forums, various research-related services, workshops, webinars, and hybrid seminars were strategically deployed as educational mechanisms. These initiatives aimed not only to rectify misconceptions but also to instil confidence in the arena of clinical research, achieving this through both general and personalized empowerment approaches.

Nurturing a culture of high-quality research instilled a great hope in the emergence of excellent researchers and academics. These individuals, presently constituting the core and capital assets of HSAAS and UPM, harbour a higher potential for impacting society, nations, and beyond with research outputs that are not only relevant and credible but also genuinely useful. Clinical research is done for its purpose of finding out the true states of issues, to examine phenomenon or to test out new interventions. If research is rightly done, the discovery and problem solving will be a matter of scales and should not be as chance occurrence. Research should not be done for the sole sake of achieving the annual personal KPI. This distorted objective has bred questionable research practices and would kill academic spirit of the individuals and the reputation of academic centres [2].

Academic healthcare professionals' primary duty is research and teaching in knowledge generation and sharing, secondarily about application of proven skills.

In contemplating the essence of an academic centre's distinction from other ordinary medical or teaching establishments, it became evident that the true differentiators lay in the possession of genuine knowledge, superior skills, and a profound concern for society (Table 2). Essentially, the former understands why certain practices are the standards, while the latter know what are the standard practices required and expected of them. Consequently, our focal points — research and education—became not only the defining characteristics but also the foundational pillars upon which the edifice of service to society rested. In this delineation, universities found their primary product in the cultivation of values within individuals, while innovation, collaboration, and wealth generation pertained to the industries and government/politics, respectively. Innovation should also be seen in active finding of solutions for day-to-day challenges not ignoring the smallest problems in the institution, to only recognising commercialisable products. When these two groups function appropriately in their respective roles and responsibilities, and their uniqueness is recognised by stakeholders, much synergy could happen in collaborative projects leading to higher quality clinical research and outputs for every person and institution involved, not to mention achieving all important KPI [3], and the economic or social agenda of the country could also be attained.

Table 2: Differentiating characteristics between academic and non-academic healthcare professionals in the descending order of primacy of the characteristics*

	Academic Healthcare Professionals	Healthcare Professionals in Non-academic Medical Centres
1	Research-driven and scientific evidence-based in daily duty exploring effective and efficient solutions to problems, and frontiers of knowledge laying the foundation of innovation.	Providing services according to field of expertise based on the authority-based recommended guidelines, and market demand
2	Leading clinical research and projects, and become evidence-producers	Income-generation mainly from the clinical/medical services
3	Teaching and training of students preparing them for present and future markets with general and specific skills	Health campaigns in the public according to planned celebrative events, or as needs arise due to emerging circumstances

4	Providing services according to field of expertise according to the latest appraised scientific evidence	Updating knowledge and skills based on published clinical practice guidelines, scientific symposiums and workshops
5	Bringing cutting-edge expertise to the communities at large as an effort to expedite public progress and appreciation of clinical science	Collaborate in research projects and clinical trials as site-investigators
6	Innovation in collaboration with other academic colleagues or relevant industry players	Evidence-based practitioners according to documents from authorities
7	Income-generation come from teaching and training programs, and research and innovative products, and clinical/medical services	Collaborate in clinical supervision and practice apprenticeship of clinical students

*based on the author experience

This academic haven, far from being an escape from the worldly 'heat,' emerged as a battleground—a crucible where the best cure is experimented, best solution is tested so that the impoverished and ailing found alleviation in both learning and physical care. Rather than a refuge for wounded souls seeking solace, it is manned by those who are brave and kind to bring about transformation to those who are feeble in spirit, broadening visions for the future, and casting a luminous glow of enlightenment. Therefore, it is not the right place for those with escapism, narcissism, lame motivation, slow mental power, weak curiosity, unable to take criticism, ambitious for luxury lifestyle, gamers for self-gain and personal achievement over patient collaboration for the goods of others. In the reverse, when the academic centres have not the aforementioned academic spirit in the environment for the majority, they would stop functioning as torchbearers of a nation, risk inappropriately assessed and judged as under-perform, turning a profession into a vocation, and worst to have their roles shabbily fulfilled.

Recognition and awards systems of a research university only fair and right when the true qualities are given their due. This must emphasise on the real substance of all work and not just the convenient metrics of outputs, treatments or interventions that are based on sound scientific basis and fully validated or tested and not rushed through the proper development (including deployment and monitoring) process [4,5]. Oh, how great is the effect of the recognition and awards system on everyone's behaviour! The presence states of any organisation and country are a testament of utility of this system. With regards to measuring every task a person/unit is undertaking in order to judge its efficiency or effectiveness, I perceive it to be not an absolute necessity and has to be wise on the timing and measures used. If we are depositing a net amount of saving into a bank account on a regular basis, would it require us to check on the balance just to ensure it increases? This kind of evaluation if unfairly scrupulous and consuming resources is psychogenic and wasting time.

A research unit like CRU is typically staffed by experienced researchers and well-trained managers if not people with post-doc qualifications. Of course this is provided the function of it is to promote investigator-initiated clinical research which require active researchers to initiate the research process, to promote high-quality research culture whereby relevant topics for research is identified and conducted with robust methodology and integrity as compared to functioning as a clinical trial centre that coordinating already planned research according to the industry agenda and waiting passively for their choice of us as one of the sites. Academic value of the former far surpasses the latter. Naturally, academic healthcare professionals should strive for investigator-initiated clinical research which are motivated by problem-solving their professional practices, and becoming experts in those areas.

I wish CRU to continue its good work, and able to grow into a mature research unit that high-quality clinical researchers seek after for support and guidance, true academicians cherished with their scholars, and real clinical experts look up to as evidence co-producers for their practice. A sincerest thank you to the newsletter editorial board members for your superb services to the newsletter! I will always cherish your excellent effort and really hope RECRUS continue to bear the torch of cultivating high-quality research culture.

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References

1. <https://www.franklincovey.com/the-7-habits/>
2. Banks GC, Rogelberg SG, Woznyj HM et al. Editorial: Evidence on Questionable Research Practices: The Good, the Bad, and the Ugly. J Bus Psychol 31, 323–338 (2016). <https://doi.org/10.1007/s10869-016-9456-7>
3. Chew BH. A response to pushing publication in journals on JCR JIF Q1-Q2. Res.Newsl.Nov 2023;Vol. 3, Issues 25:Page 828. <https://cstr.cn/33294.43.032523.RECRUS.4>
4. Recognition & Rewards. Res.Newsl.Nov 2023;Vol. 3, Issues 25:Page 833. <https://cstr.cn/33294.43.032523.RECRUS.6>
Edwards MA, Roy S. Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition. Environ Eng Sci. 2017 Jan 1;34(1):51-61. doi: 10.1089/ees.2016.0223. Erratum in: Environ Eng Sci. 2017 Aug 1;34(8):616. PMID: 28115824; PMCID: PMC5206685.