

Accreditation of Professional Statisticians: Current Perspectives and Challenges

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ABSTRACT

There is increasing interest and discussion within the industry relating to accreditation to demonstrate professional skills within the chosen discipline. This paper provides an overview of the current status in the established markets for accreditation of professional statisticians, the challenges in qualifying such an accreditation and some considerations for PhUSE and its members. We need to be able to maximize and demonstrate our expertise and continued worth as a profession, particularly in the current economic climate and with the backdrop of the resource potential in the emerging markets.

INTRODUCTION

The purpose of this paper is to provide an overview of the current status for accreditation for professional statisticians, both in Europe and the US. Accreditation of professional statisticians represents a vital acknowledgment of specific statistical techniques and methodologies that could potentially provide the framework to demonstrate our expertise to: employers, peers and outside agencies such as regulatory authorities. Accreditation is standard in many professions and, indeed, in many skill-based trades in order to ensure a minimum level of competence. Accreditation in the pharmaceutical sector is most evident for clinicians with rigorous continuous professional development adherence to maintain medical licenses.

As incoming Chair (May 2011 - May 2013) of Statisticians of the Pharmaceutical Industry (PSI), my focus is both on PSI's efforts as part of the 2010-2012 PSI Business Plan and my personal viewpoint. This paper does not represent PSI position or policy.

PSI

There is increasing discussion world-wide on the requirement for Accreditation of Professional Statisticians. Given this change in focus over recent years, PSI has made it a goal of the 2010-2012 Business Plan to explore the benefits and costs of such a scheme, as it will be of potential benefit to its members. PSI does not perceive at this time that they would administer such an accreditation scheme: such a scheme would have a high administrative workload and would severely stretch the voluntary PSI resources available. A discussion poster was presented at the 2010 PSI Conference on this topic, and a plenary session at the 2011 PSI Conference is in the planning stages.

CURRENT STATUS

EUROPE

UK: The Royal Statistical Society (RSS), the largest professional body of statisticians of any discipline in the UK, created the Chartered Statistician status in 1993. The Chartered Statistician (CStat) award represents the RSS's highest professional award and is available by application: completion of a 10 page application form with details of academic qualifications, professional development, statistical skills and requirement of 2 referees of a senior status to the applicant to vouch for the experience, including the duration, level and type of experience.

The RSS requirement is for an approved statistical qualification (or equivalent) and approved professional development and experience for minimum of 5 years. Qualifications are verified with the awarding body and the appropriateness and content of the course meets the minimum standard required. The award of CStat includes a commitment to both the RSS CPD policy and the RSS code of conduct. However, there is currently no mandatory requirement to renew or demonstrate continuous professional development (CPD), although CPD policy was

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launched in 2004 and CStat holders are expected to comply. A voluntary Maintained Professional Certificate (MPC) is available to formally document CPD as an addition to the lifetime CStat award which can be retained with RSS membership renewal. The CStat award is not formally recognized by any regulatory authority as an approved status. Holders of CStat can apply for Chartered Scientist (CSci) status, which is governed by the Science Council, on the basis that RSS is recognised as a Licensed Body for the award of CSci status. CSci requires CPD recording and a formal annual re-validation of CPD to retain the award. The introduction to the Science Council website states the following: "The Chartered Scientist qualification (CSci) reflects best practice in science and is set at a benchmark level throughout the science professions. With increasing focus on the interdisciplinarity of science it is vital for scientists to have professional recognition that is applicable across a range of scientific disciplines".

Within mainland Europe, some of the societies do have established accreditation available. The ones known to me are listed below:

Germany: The German Society for Medical Informatics, Biometry and Epidemiology (GMDS) and German Region of the International Biometric Society established criteria for the certificate in Biometry (1981). This certification received recognition by the German Federal Institute for Drugs and Medical Devices (BfArM) as proof of qualification of the responsible biometrician.

Netherlands: The Dutch Society for Statistics and Operational Research (VVS) set up accreditation for biostatisticians (in medical, biological, agricultural and environmental applications) and has been available since 2002. Their requirements closely follow those set out by the RSS.

EFSPi, the European Federation of Statisticians in the Pharmaceutical Industry, is an umbrella organization and open to constituted groups of statisticians (currently 10 national organizations). The EFSPi Qualification Working Group has reviewed the status of accreditation twice in the last 11 years - Morgan (1999) and Williams (2009).

USA

The American Statistical Association (ASA) has announced their intent to provide individual voluntary accreditation (see below).

CURRENT INITIATIVES

UK

The RSS Professional Affairs Committee is engaging with employers in different sectors to explore their thoughts on professionalism. A meeting was held (5 Feb 2010) with Pharma representatives, including the PSI Chair and a wide range of views (advantages and disadvantages) were shared at this meeting. A meeting is in the planning stage with the Government sector. Discussion thus far has focused on increasing the value to employers of CStat, and making it more internationally recognised. Current insights indicate that CPD (via the MPC) is likely to become mandatory at required intervals in order to maintain CStat.

USA

The ASA has been considering Accreditation over the last 15 years, and in the last year has made a positive move towards setting up Accreditation. ASA are currently developing a similar professional award to RSS for its 16,535 members (PStat) that will require ongoing CPD and revalidation. The individual Accreditation Proposal Review Group issued a report in July 2009 to summarise the poll results of their members and PStat proposal. The poll of 1000 members indicated a "sizeable fraction" of ASA membership want PStat or similar accreditation. The focus on "Voluntary Individual Accreditation" will "reach out to underserved groups while continuing to serve our traditional constituencies". An implementation Group has been set up to look into formally implementing PStat and updates on progress are regularly published on the ASA website.

The PStat is modeled on the UK (RSS), Australian and Canadian statistical society's mechanisms for accreditation. The PStat accreditation will be a combination of formal qualifications in statistics, relevant practical experience, demonstration of professional competence and 2 references. Applications will be reviewed by the Accreditation Board (to be created) to oversee the entire process. Accreditation will not be for life, but for 5 years, then a renewal process will be required. Recent developments include the "intent-to-apply" form on the ASA website to gauge the continued interest of the ASA members, and that PStat and CStat will have mutual recognition by the 2 organisations.

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ADVANTAGES OF ACCREDITATION

Below is a bullet point list of advantages (although not exhaustive) as indicated in discussions and meetings of interested parties.

Recognition:

- Professional recognition
- Mandatory CPD alongside CStat could raise the profile of such an accreditation and motivate statisticians to retain it
- Positive response to some unquantified real or perceived problem
- Greater visibility for accredited statisticians: this can support initiatives relating to supporting smaller companies without employed statisticians (specific PSI goal in 2010-2012 Business Plan)
- Mutual recognition of accreditation across organisations worldwide provides a minimum global competency level

Standards:

- Establish a minimum competency level
- Provides a mechanism for filtering poor performers
- CStat Code of Conduct includes the option to evict from RSS if not adequately followed
- Increasing the quality of statistical input within submissions to authorities, by requirement of minimum competency levels (based on the perception of poor quality submissions still received by regulatory authorities)

DISADVANTAGES OF ACCREDITATION

Such an accreditation and management thereof is likely to have disadvantages that will need to be circumvented or managed appropriately for the worth of such an accreditation to be valued.

Professional need:

- The only other profession with such an accreditation in our industry that requires regular review and mandates such scrutiny is the medical profession. Do we really require this level of scrutiny and review?

Professional worth:

- Would it provide a clear benefit to the individual?
- Current CStat accreditation is not hard to get and straightforward to retain

Measurement:

- Assessment of qualifications worldwide – difficult to assess the different country/affiliation/type and level of qualification. The potential to 'partner' with country-specific (where in existence) associations to provide lists of approved institutions, qualifications and levels of qualification would mitigate this somewhat.
- Measurement of achievement is not completely transparent: Should it be by attending a course or practical assignment or monitored application? The level needs to be appropriate, measurable and achievable
- Needs to distinguish between difference of opinion and minimum expected standard

Cost/Administrative burden:

- Introduces a level of bureaucracy
- Training course fees will increase with the requirement for courses to be accredited
- Removal of accreditation for individuals ("struck off") may invoke legal procedures

CONSIDERATIONS FOR PHUSE

- What value would you give to having an Accredited Programmer status?
 - As a programmer/developer?
 - As an employer?
 - As a regulator?
- What measurements are the most important to you?
 - Formal qualifications? (Such as SAS Certification?)
 - Practical applications?
 - Documented evidence of applications?

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- Pharmaceutical applications?
 - Peer acceptance?
- What level should the accreditation be at?
 - National level / EU level / Global level?

CONCLUSIONS

Accreditation for professional statisticians exists in a number of countries, including the UK (via RSS), but this qualification (CStat via RSS) is a lifetime award and does not include any mandatory CPD elements. Indeed, the accreditation is voluntary and is not prevalent in the pharma industry, nor is it a requirement to employers or governing bodies such as regulatory authorities. The ICH guidelines (E9) indicate “....an appropriately qualified and experienced statistician ...” but has not stipulated any further competency levels to enable us to provide statistical input.

With both RSS and ASA reviewing accreditation for professional statisticians, we have an opportunity to engage with the relevant committees to provide input into any revisions or enhancements to such a scheme.

REFERENCES

ICH Guidelines:

ICH (www.ich.org) E9 “Statistical principles for Clinical Trials”

EFSPi papers:

Morgan (1999): DIJ “Qualified Statisticians in the Pharmaceutical Industry” .

Williams (2009): DIJ “Qualified Statisticians in the European Pharma Industry: Present and Future Directions”.

USEFUL LINKS

Acronym	Society	Website
PSI	Statisticians in the Pharmaceutical Industry	www.psiweb.org
EFSPi	European Federation of Statisticians in the Pharmaceutical Industry	www.efspi.org
GMDS	German Society for Medical Informatics, Biometry and Documentation	www.gmds.de
VVS	Netherlands Society for Statistics and Operational Research	www.vvs-or.nl
ASA	American Statistical Association	www.amstat.org

CONTACT INFORMATION

Your comments and questions are actively encouraged. It is important that accreditation is widely discussed to ensure any decisions are based on informed opinion.

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