



## BIOMEDICAL ENGINEERING'S POSITION IN QUEBEC HEALTH NETWORK NEW STRUCTURES

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### ABSTRACT

Since April 1 2015, Quebec health network underwent a major reform as a result of the entry into action of the Law amending its organization and its governance by abolishing regional agencies (Bill 10). This law is primarily the combination of health and social services centers of each administrative region into one integrated center of health and social services (CISSS) or one integrated academic center of health and social services (CIUSSS). The old organizational structures are being revised including biomedical engineering departments (BIOMED). As a follow up of a study we made in November 2011 on the directorial affiliation of biomedical engineering departments in Quebec health network, we identified directorates to which are attached Biomedical Engineering Services in CISSS and CIUSSS. It shows that BIOMED is present in clinical, technological, medical and administrative directorates. Does this reflect a misunderstanding of the profession or is it the sign of the success of its transversal integration to a point that all the players in Quebec Health organization appropriate it? Unlike 2011, BIOMED is mainly attached in CISSS and CIUSSS to multidisciplinary services Directorate, thus favoring a counseling vision. In both cases BIOMED ended up in various directorates. Is this a sign that a clinical engineering directorate is to be considered in future organizational structures of Quebec health and social services?

**Keywords:** organizational structure, change analysis, clinical engineering directorate.

### INTRODUCTION

The reform of Quebec Ministry of Health and Social Services (MSSS) has classified BIOMED as a clinical service while Information Technology (IT) and physical facilities operation services were ranked among the administrative services and underwent Quota positions' abolition under Bill 10. The creation of integrated health centers and social services (CISSS) and integrated academic health centers and social services (CIUSSS) required a profound reorganization of healthcare administrative structures merged regionally. We were interested to directorates from which is related biomedical engineering in these new structures.

### MATERIALS AND METHODS

On August 12, 2015, four months after the effective date of Bill 10, we downloaded from MSSS's website all charts of the CISSS and

CIUSSS. Then we recorded all directorates to which BIOMED and other clinical services are related.

On February 5, 2016, we collected BIOMED structures to determine the predominant structural trend.

### RESULTS

Unlike other departments such as radiology, respiratory therapy, nuclear medicine, operating room, and emergency room which are found in the same directorate in CISSS (Fig. 1) as well as in CIUSSS (Fig. 2), BIOMED is in various directorates from an organization to another.

BIOMED structures that were completed as of February 5, 2016 showed an organization mainly distributed in an advisory team separated from the maintenance of medical devices (Fig. 3).

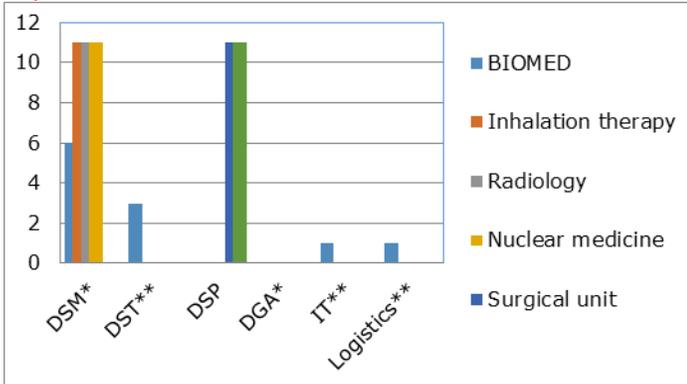


Figure 1: BIOMED Directorates in Quebec CISSS (n=11) as of August 12, 2015. \* Counselor Vision, \*\* Maintenance Vision.

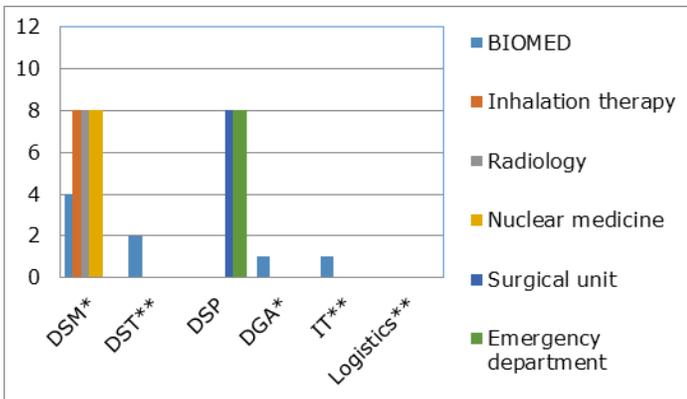


Figure 2: BIOMED Directorates in Quebec CIUSSS (n=8), as of August 12, 2015. \* Counselor Vision, \*\* Maintenance Vision.

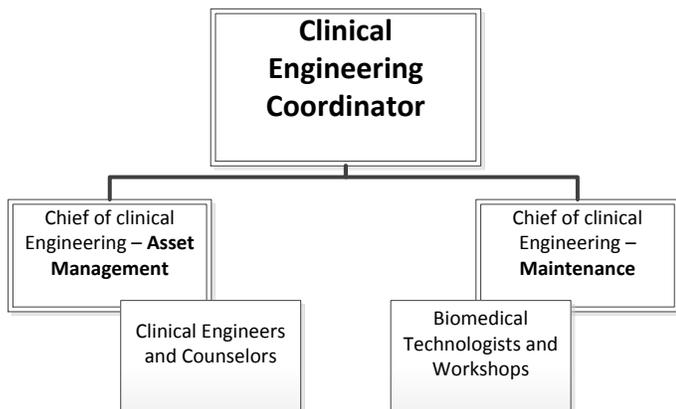


Figure 3: General BIOMED chart in CISSS or CIUSSS. In some regions, it is without a coordinator or with only one manager for asset and maintenance.

The job title of BIOMED manager varies according to the region. We found Coordinator, Deputy Director, Chief BIOMED or two separate managers for engineering and maintenance, respectively.

## DISCUSSION

November 2011 portrait showed a tendency to DST for CSSS now merged in CISSS (Fig. 4) and a trend toward technological leadership for the academic centers now included in CIUSSS (Fig. 5). This concept of technological leadership is not in any chart of the present organizational reform. Instead, we witnessed affiliate changes depending on the leadership of the directors in place. Thus, in most flowcharts, changes were made to transfer BIOMED to DST as in most of 2011 situations.

We believe that the dispersal of BIOMED in various directorates denotes more a misunderstanding of the profession than its successful integration. It will therefore be beneficial to know well the clinical engineering profession in order to suggest a most appropriate affiliation. Recognition by MSSS as clinical service is an important factor denoting a (in)direct participation of BIOMED to the patient care episode.

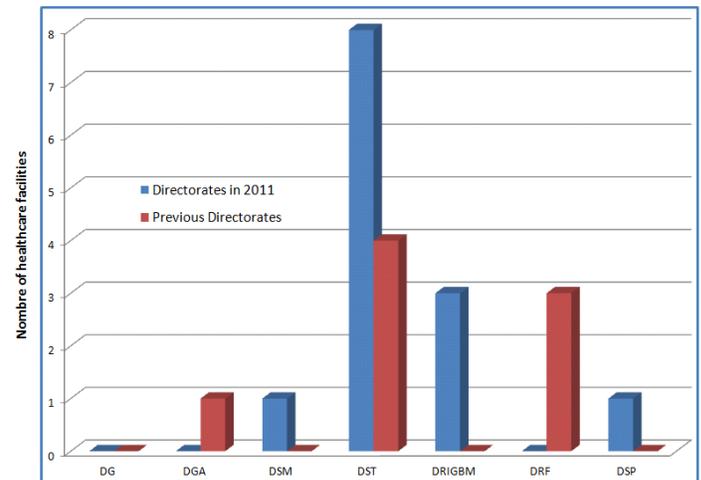


Figure 4: BIOMED Directorates in November 2011 in non-university hospitals (now CISSS)

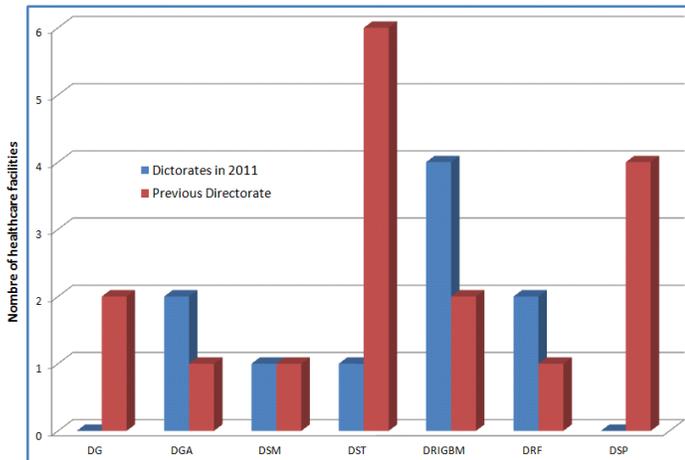


Figure 5: BIOMED Directorates in November 2011 in university hospitals (now CIUSSS)

Since it is difficult to attach BIOMED to a clinical service (DSM, DSP) while maintaining its impartiality and independence of action and to preserve any political influence (DGA, Logistics), we suggest the creation of a clinical engineering directorate for the comparable management of biomedical technology in healthcare facilities. The growing technological complexity and the resulting evolution of medical and clinical practices justify such emergence. Another point of view in favor of the creation of a clinical engineering directorate is the difficulty in finding to current BIOMED a unique directorate connection. A clinical engineering directorate would be mandated to coordinate all technological activities related to the planning, diagnosis, care and safety of the medical and clinical act. A first step toward the creation of a clinical engineering directorate would be to gather all BIOMED departments under only one directorate. For now, DST (with 'T' for technological) is the most neutral transversal directorate with service properties closer to clinical engineering. By being solely under DST, comparable management indicators would be possible for all CISSS and CIUSSS, making feasible the benchmarking of technological performances for these institutions.

## ABBREVIATIONS

- BIOMED:** Biomedical engineering department
- CISSS:** Integrated center of health and social services
- CIUSSS:** Integrated academic center of health and social services
- CSSS:** Center of health and social services
- DG:** Director General
- DGA:** Deputy Director General
- DRF:** Director of finance
- DRIGBM:** Director of Information technology and biomedical engineering
- DSM:** Director of multidisciplinary services
- DSP:** Director of professional services
- DST:** Director of technical services
- IT:** Information technology
- MSSS:** Ministry of Health and Social Services