STRUCTURE AND OPERATIONAL MANAGEMENT IN LABORATORY ANIMAL PRACTICE

mr.spec. Iris Broman, dr.vet.med.

ABSTRACT

Biomedical research projects involve a large number of human resource profiles, multiple processes and structures, regardless that they seem to be run by individuals at first.

All research components are connected to each other and under the influence of all participants. In case that the head researcher doesn't govern the management of this process, it will reflect to it in a negative way: procurement and the paperwork concerning animals and supplies will not be available the right way; the research results will become unreliable and the whole agenda will be put to the ice.

Croatia finds herself today facing a line of accreditations and certifications in order to adjust herself to EU membership, both institution and people. Organisation, as a scientific branch, studies guidelines, advices and legislation provided by leading scientific experts worldwide, in order to implement and modify them according to her needs, in order to create stronger profile and capacity of human resources for the global labour market.

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INTRODUCTION

The work with laboratory animals had, up until now, very little approach by the standpoints of operative management, organization, social sciences methodology and finance, while it was rather strictly held within biomedical sciences.

As Croatia is facing today lines of accreditation and certification, in order to adjust itself to EU requirements, the guidelines and directives demand additional approaches by their own nature, as , for, instance, the one described in this work.

The object of this research is management and activity organisation in work with laboratory animals in Croatia.

Ministry of science took over the task to assembly numerous types and species of animals into one register. In the meanwhile, with no approach to such a register, we will consider as object of research just those animals that are prepared by Vivariums in Croatia for the biomedical research.

Methodology of research for this work is very modest, so that, besides experimental method, we'll use comparative, normative and analytical method. As to have a better overview no the issue, we divided the structure under headlines of organization, management, research teams, finances, legislation and professional regulation.

ORGANIZATION

The organization lather should be put up clearly during the planning process. It will modify through time, according to the momentary operative demands. However, a good organizational skeleton will, at the certain time, when the work overload becomes so intense, that it turns out impossible for the leader, as a one person, to have an overview, never the less to lead all the organizational aspect related to the project, present a hallmark for the concept maintenance. Therefore, it is necessary to post an optimal organization that will fulfil the demands of domestic market and an efficient adjustment to the EU standards. Organizational form, set up in that manner, will create niches for management application, enabling this profession to offer its production capacities to the world market.

„The aims of organization can be perceived as:

- general and special
- simple and combined
- temporary and permanent

The general ones present structuring the certain organizational state for the certain time frame. The special ones present efficient solving of certain organizational problems. " (Turkalj; 2008, 10)

Organizational structure in work with laboratory animals can be observed completely globally, at the regional or state level, or micro level, institution or laboratory, whose activities and results provide a reflection of primary concepts, with expression of all its faults and virtues. This approach enables the maximal use of virtues.

The organizational hallmark that influenced today's approach in work with the laboratory animals and made it as uniformed as possible, is the scientific request that every experiment, done anywhere in the world, has to be reproducible.

When the European Council declared its requests regarding the work with laboratory animals, built according to American and European guidelines, that was also accepted by many countries and was implemented in their legislative systems, the request for reproducibility of experiments made the organizational structure, regarding the issue, specific and uniform.

The animal, or the animal model, has to live in the exact same environment as it would live anywhere in the world, that also means that the human resources that participate in this line of work, have to have approximately the same level of knowledge, approach and do exactly the same things.

This organizational equality provides the whole line of advantages, amongst which we can underline the general information approachability, but also the fact that it's tying down creativeness and autonomy of new organizational, managerial and research approaches.

Work with laboratory animals in Croatia seems to be of special social interest and is, therefore submitted to control of lines of Ministries. So, for instance, Ministry of Agriculture regulates the zoo hygienic measures, transport, ethical aspect and the whole lot of other issues concerning the welfare and care for the animal as a subject.

Ministry of Science encourages and funds activities, programs, counselling, science Congresses, gatherings and the palette of activities of organizational unites, that do research work on animal models. Additionally, there are organized societies that deal and discuss different aspects of scopes of work with the laboratory animals.

One successful leader, head of facility, researcher or manager uses the positive forces within the organization and anticipates, limits and redirects the potentially hazardous ones, horizontally and vertically. In order to do so, the manager has to

understand the structure (organization) and the process itself (management) and their relevance while conducting the research. Organization draws us the ladder of responsibility, while management describes their operability.

MANAGEMENT

„Management is an activity within the organization that enables efficiency free of dispersion and forcing the resources.

Efficiency and effectiveness achievement: efficiency of a certain organization can be measured by responsible precision (correctives) how certain processes develop, meaning, for ex. do they produce by the lowest unit expenses (efficiency) followed by its ability to do the right thing – to choose the right goals and methods and how to achieve them(effectiveness)." (Barković; 2009, 14)

Administrative aspects, quality control (meaning precision and accuracy) and quality surveillance (meaning retrospectives and follow up's) form the structure axis that enable the further operativeness.

„Managerial skill is an executive process of gaining the organizational goals with people, other organizational resources and through them" (Certo & Certo; 2008, 16)

If the process seems to flow with a sense of ease that means it has a high quality professional management. That feeling of easiness also depends on the good organization and well think – trough operative part, that serves to the manager to swiftly "tune" sudden negative impacts, that might happen in the process, regardless if somebody gets ill, there are legal changes, difficulties in logistics, or, simply, unexpected global changes.

Prognostics, as a method, or a simple creative anticipation together with a valid information flow, can save the entire project from closing, or redirect it in another direction, that has a capacity to compensate the losses. The duty allocation helps in forming the organization and operative part, as well as in their disburdening. One person can be delegated for placing orders and keeping the log on procurement, not only for one but for a group of teams. That task will be assigned to people who have suitable education and are involved in the operational part of the project in the manner that they can follow, combine and foresee the requirements. As one person gets delegated and accepted the duty, he/she becomes competence responsible.

As for resource allocation, there are two familiar ways.

„The first way is establishment of necessary coordination, cooperation and in relation, resource allocation presents, largely or not, a forcing. We are talking about centralized resource allocation-socialistic economy.

The other way, the other economy, mediates its activities throughout voluntary cooperation.

We are talking about decentralized resource allocation – capitalistic economy – market method. "(Ferenčak; 2003, 6)

Duty allocation, according to competence, and the level of responsibility, requires respect of the term „procedural discipline", by all the participants. Everybody needs to know what they are supposed to do and when to do it. All participants have to respect legal regulations; they will come up in the benchmarks of different activities.

It is quite clear that the previously arranged fixed processes prevent a line of mistakes and lower the frustration level. Task delegating pulls a need for joint decisions and simultaneous work on different tasks. That all seems to produce masses of unnecessary paper and that the administrative part pushes over the limit. However, on the end of the day, those same documents will keep up the coordination, lead to higher efficiency and prevent many mistakes.

TEAM DYNAMICS

Properly set up organization in work with laboratory animals and a good management should enable a large majority of interest teams that will constantly advance the professional and academic activity.

The index of complexity is a factor that drives the need for management. Every change in operability and structure changes creates a base of a chain reaction of which the participants may or may not be aware. On those occasions certain segments are suddenly no longer required, at least not in the form as planned. Then the reorganizing has to be swift and clearly presented, because the time limit will cause pression that will reflect both to human resources and results.

Also, the amount of work can be piled up due to wrong assessments or unexpected back holds and that is the time for the quality management to show itself.

The rapid expansion of base of knowledge, new ideas, equipment and creativity are characteristics of scientific research that have their dynamic fluctuation going on at the Universities, institutes and other sources of academic forces.

Traditionally, those institutions have a „mingling"scientific profile, a large number of small projects, swift changes in the types of projects and a fast exchange of human resources.

Biomedical researches need a very demanding management.

Classic research is often characterized by individual research, that doesn't change their characteristic for a longer period of time. Hierarchy is defined in precision, decision making is lifted to the highest level, (therefore the communication gets vertical), the operative part is well defined and therefore, often, if we want to know something concerning a certain segment, we'll speak to the same person.

As opposed to that model, biomedical research is done in teams. Employees work together, coordinate tasks, and often have collateral or communicative duties. Team work presents a complex integrative mechanism. Postulates often require additional verbal communication. Authorities are often delegated within the group and are not necessarily the same people for different projects for the same group in different project types.

Science is coordinated with other duties the academic community is involved with. The jobs that researcher do perform as the base job can serve as a positive platform for research.

According to recent researches, all the teams go through same behaviouristic phases. They are encouraged by emotional states of all participants. Each new member is confronted by the same questions: can he/she actually perform the task, what is his/hers exact role in the entire process, who are his delegated and who are the actual authorities, who presents the competition and what are their characteristics.

That is the phase when the subject turns mainly to the main authority that he recognises as a manager of the process.

In order to shorten that phase, manager should introduce the subject with the structure and operability in the informative and transparent way. If the subject gets to be closer acquainted wit the co-workers, the level of possible frictions gets reduced.

The next phase is competition, conflict of authority with the manager or with other team members. In that phase the subject uses his previous knowledge and experiences, builds his own niche, place under the sun and expresses the need for affiliation.

Manager should encourage discussions that must include problem solving propositions. The subject has to prove himself, so the discussion has to include explanations of personal attitudes.

After that, a team starts to get coherent. Starts to measure itself. It measures itself against the manager (in some joint attitude) and/or in relation to another group.

They observe similarities and differences, followed by comparing their results compared to other teams.

„Communication skills present an area where a lot of people face a lot of difficulties. Some people have a problem to speak to strangers, some don't find silence as a particularly pleasant thing and some simply find it stupid to discuss irrelevant topics"(Lamza-Maronić & Glavaš; 2008, 13)

Manager should describe the joint problem from different angles and request a feed-back for problem solving. It is also time to delegate and re-delegate.

The final phase is productivity. We have all proved ourselves, we are aware of our approximate capabilities and that effected finding our own niche on the task and within the team.

Manager follows the coordination quality and defines new goals.

It is suggested that teams, that are formed to do scientific projects done on laboratory animals and are approaching development or realization of a certain project, accept these suggestions.

In the academic environment, researchers are used to high level of freedom, as for the research topics and aims, as well to the scientific approach. Teams should not only discuss common goals, but also the style and manner how something is done. The right timing in coordination can depend on the style of one person.

Last but not least, changes and prompt analysis in non commercial research institutions depend on finances. Changes on that field lead to operative changes that involve surveillance and planning.

EXPENDITURE IN SCIENTIFIC RESEARCH

„One of the central questions of contemporary societies, as well as our state, is a question how to organize scientific research activities, or how to incorporate it within activities of other professions, namely commerce and how to procure its finances. Science development, application of research findings, integration of science to commerce and other professional aspects of social structure, introduction of modern technologies into work processes present a benchmark to production, well being, work liberation and progress of the modern society.

In order to express its social function, scientific research, amongst other, requires adequate financing.

Throughout that aspect, scientific research should not be observed as a common public trade. In our country, scientific work has a special public interest, but a problem is that the majority of scientific employees reside at the universities or institutes whose scientific activity is, partially or in total, financed by means collected through taxes, or some other instrument of public income.

Interest in scientific research is also present from the aspect of solving some existential problem that concerns human survival in general (finding new sources of energy) "(Srb & Čulo; 2005, 73)

Changes in national budget allocation lead to the result that the academic research is conducted on the basis of long-term plans with a time assessment of many years. In 1980's large reforms in structuring the scientific research took place on many Universities. More than ever before, the survival of research teams depends on research finances that, on the other hand, depend on their output, scientific and qualitative.

Research projects are designed in the manner that their failure is nearly impossible. These changes have a feed-back. Planning and rigidness are opposed to flexibility and creativeness of new ideas and find themselves in disposition concerning otherwise useful accidental findings and results. This situation is non-stable. There will always be a pressure on research organizations that will continuously be forced to adjust organization, methodology and management of research.

REGULATIONS

Ethical committees are formed in many countries and should be in all of those that conduct research. Their purpose is to define necessities and justification on

animal experiments. As well as the assessments of how much the animal suffers. Protocols on animal experimentation have to be presented and authorized by such committees in advance.

The project manager has to be aware of relevancy of the same legislation and have in account all the ethical aspects while planning the experiment.

There is a world wide trend in increasing those demands and it embraces all the people who are in any way connected to the work with laboratory animals on any given level.

CONCLUSION

All above leads to the conclusion that in Croatia hasn't been achieved the necessary organization in management of laboratory animals. Organization we have today oppresses creativity and autonomy of new organizational, managerial and research potentials.

Management, as an activity, has to enable maximal efficiency of each organizational form, with no dispersion and forcing the resources, so the space in the promotion of work with laboratory animals is large. That space is observed by professional management, the thoroughly thought through operational activities, legislative changes, logistics and the long line of accreditations and certifications that lead to lining up to the EU guidelines. Each professional development is relied upon multiple science research teams, so the approach of Vivarium should be the same.

Team forming in the work with laboratory animals demands a multidisciplinary managerial approach. Management is facing the task of forming multiple team profiles and other participants. Scientific research and its financing are eternal topics of contemporary states. Our approach is that the scientific research work should not be understood as a common public expense, because good organization, management and their teams bring profit and income, not expenditure.

Legislation in work with laboratory animals is set-up in Croatia, but this regulations need refinement, follow up of new organizational forms, cooperation with EU regulations, so, that it total, legislation and professional regulations become a rolling stone of the development in the work with laboratory animals.

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