

Ethical and Regulatory **Challenges of Stem Cell Research** **and Applications at Health Care** **System in UAE**





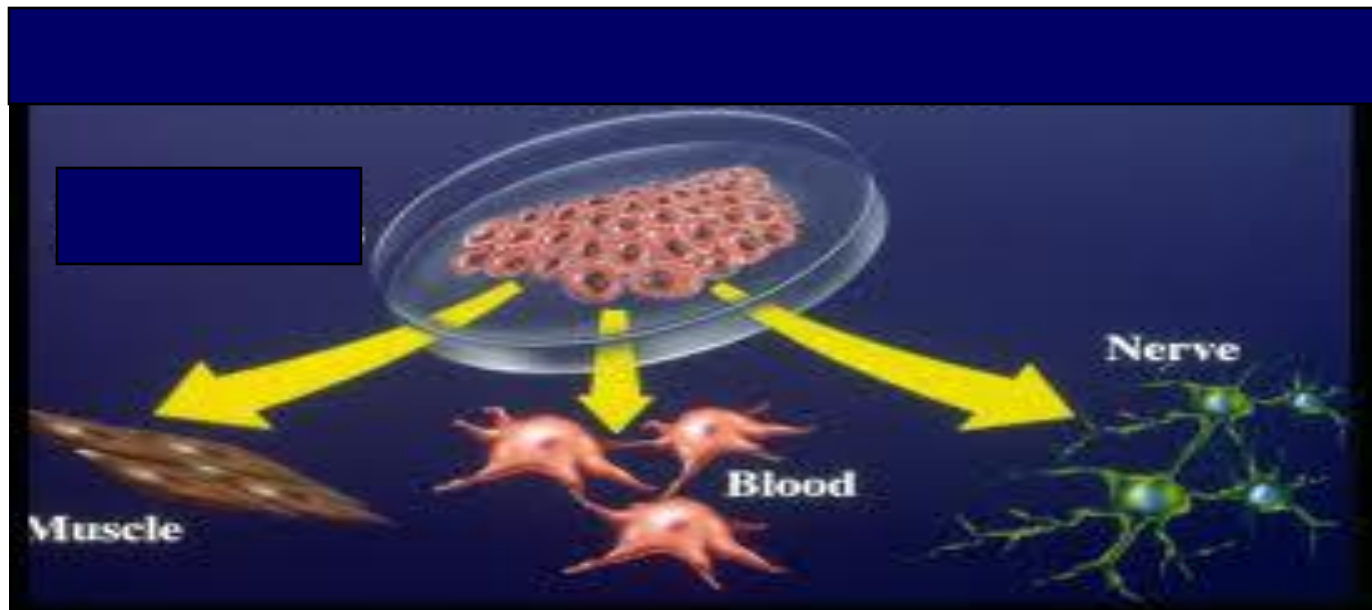
Contents

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Stem Cell

- Stem cells are the basic building blocks of life that are capable of developing into various types of cells.





Sources

- Embryonic: approximately four to five days old in humans and consisting of 50–150 cells.
- Fetal, amniotic
- Adult: bone marrow, the bloodstream (peripheral blood), and umbilical cord blood from newborns.

Research and Applications



- Stem cell research is picking up these days, and it gives many patients new hope of recover from their diseases.
- Stem cell therapy has proven to be effective for organs and tissues restoration, and for fight against the incurable and obstinate diseases.



- Investment in stem cell is extremely effective and productive in terms of cure of more than 70 serious illness



Background

- As the most advanced technology, Stem Cell Transplants is performed by countries all over the world.
- In China, various kidney diseases are treated, such as Diabetes Mellitus, Nephritis, Renal failure, etc, with stem cells.
- .



- More than 85% of the patients treated by stem cell can get obviously improvement



Background

- Stem cell research and applications is quite debatable area due to:
 - Religious and ethical issues
 - Inadequate regulation and standards governing this vital and rapidly expanded trend



Objectives

- To describe stem cell research and applications status in UAE health care system
- To address ethics and regulations issue in UAE health care system
- To identify gaps in ethics and regulations (Challenges)



Methods

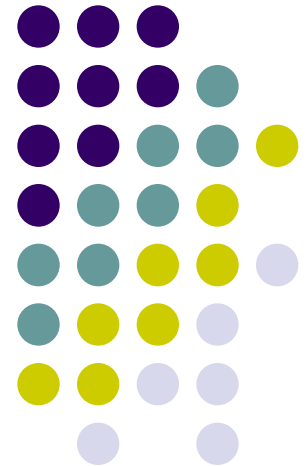
- Current situation analysis of the status of stem cell research and applications through reviewing stem cell literature in UAE.
- Assessing religious and ethical debates



- Assessing ethical protocols of stem cell functioning facilities
- Revising currently operating standards and guidelines regulating stem cell in health care system in Dubai

Findings

Stem cell research and applications

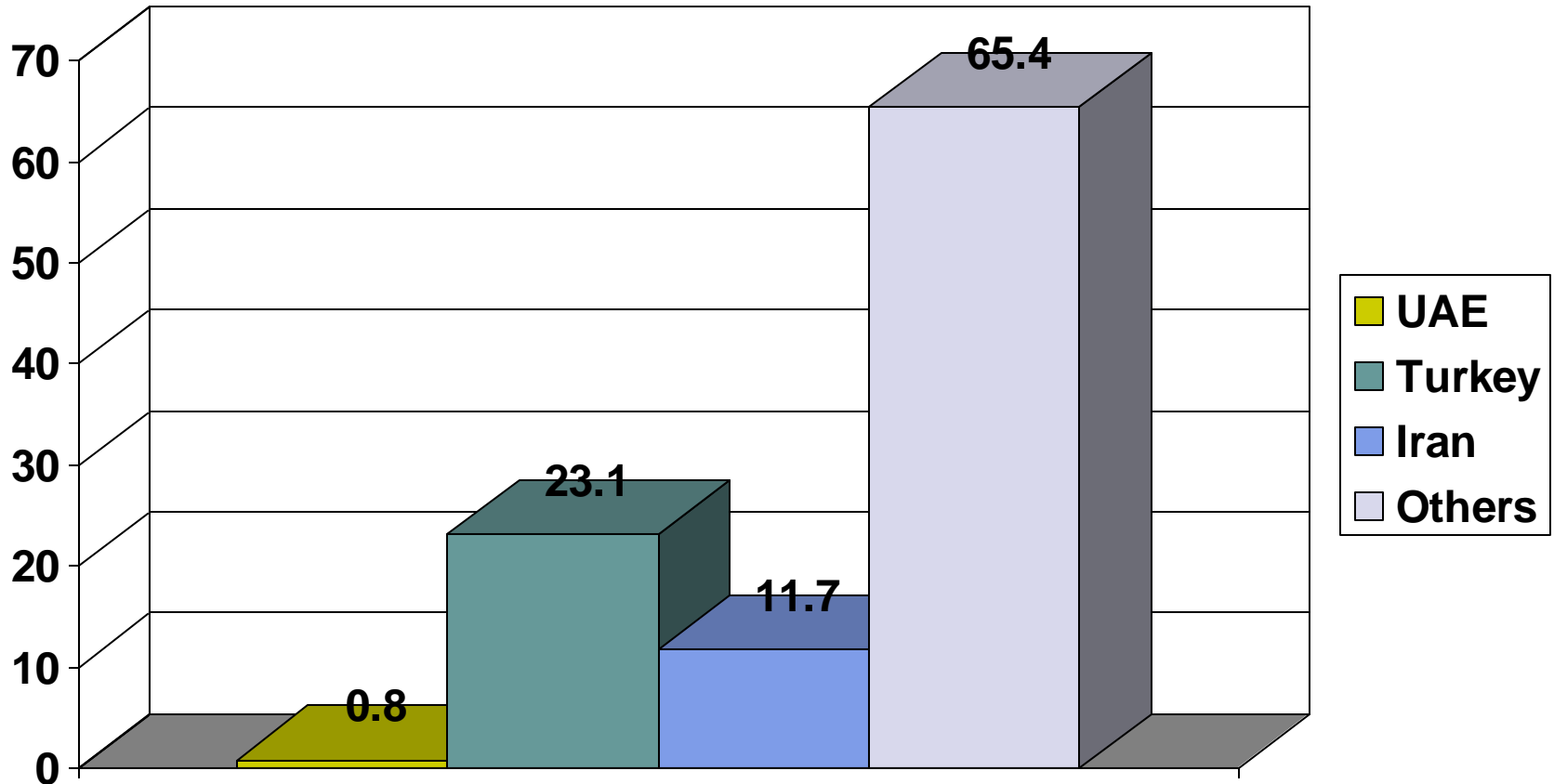




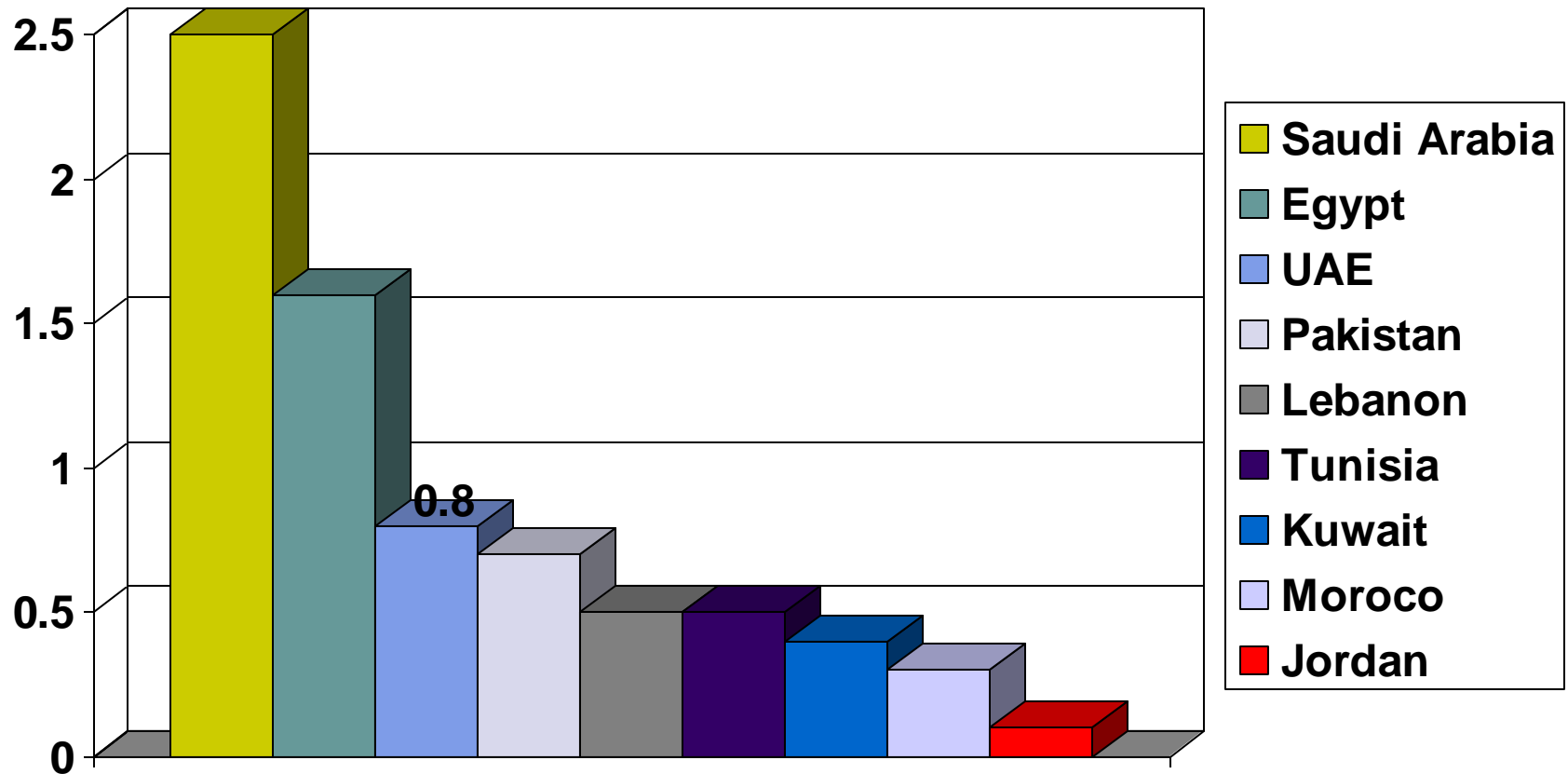
UAE contribution

- UAE produces 0.8% of the total Publications of stem cell research in the Middle East
- It is the third ranking among Arab countries in stem cell research after Saudi and Egypt.

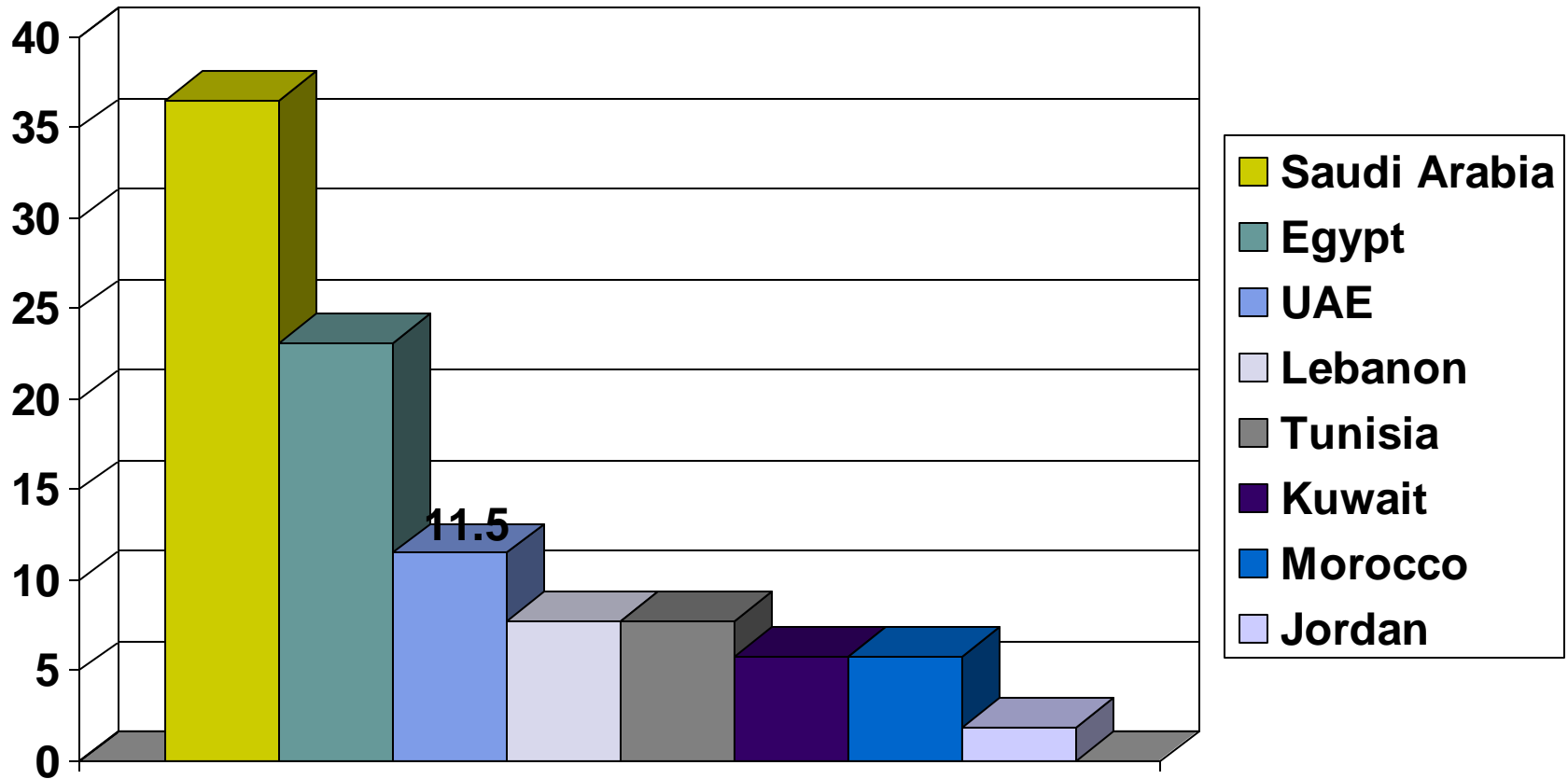
Publications of UAE compared to Middle east countries having high numbers of publications



Publications of UAE compared to other Middle east and Arab countries



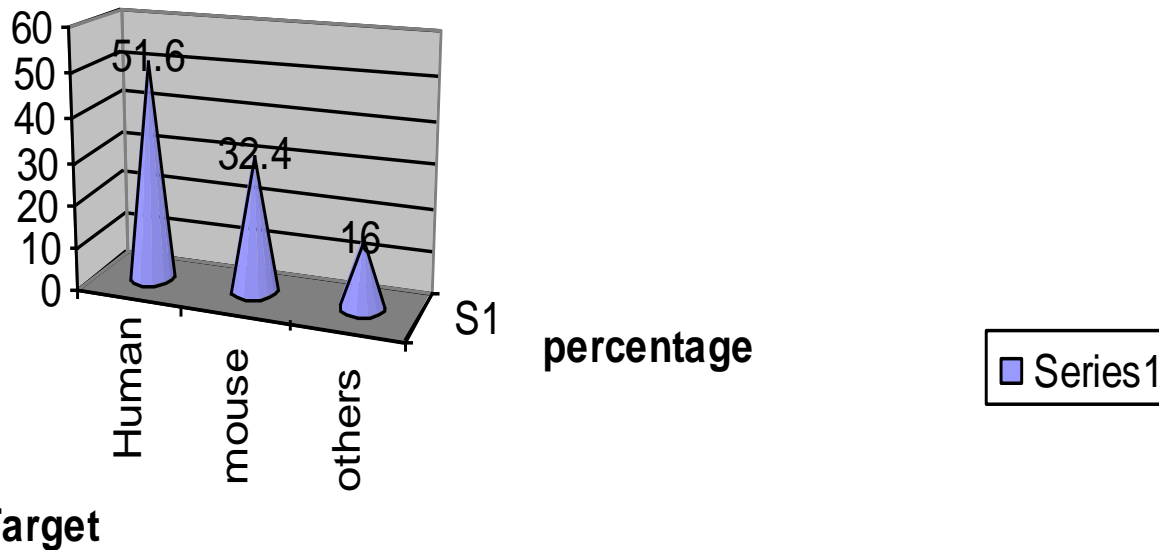
Publications of UAE compared to other Arab countries



Distribution of stem cell applications at UAE

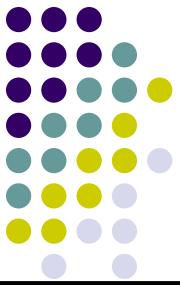


Application of stem cell activities targets in UAE

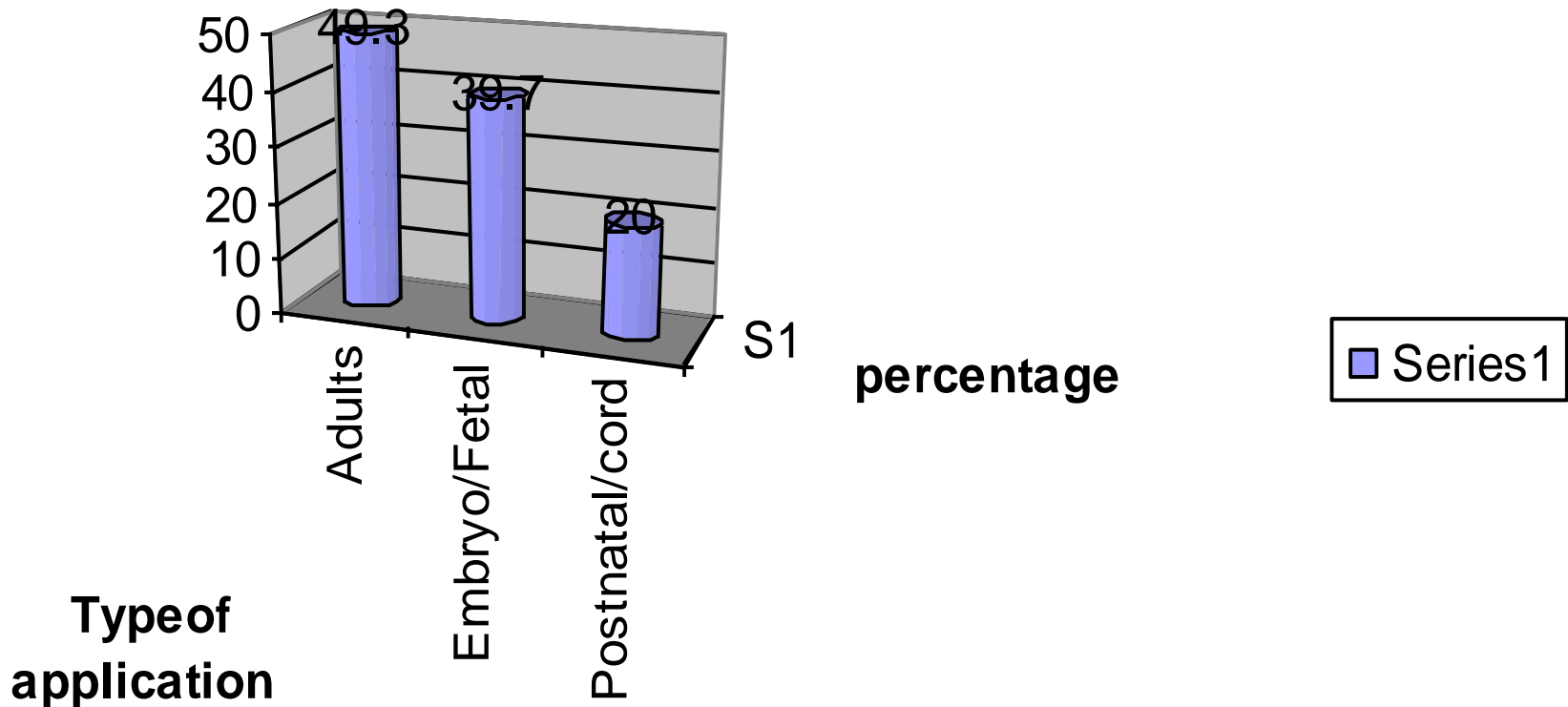


	Human	mouse	others
Series1	51.6	32.4	16

Distribution of stem cell applications according to the target population in UAE



Distribution of stem cell applications and research in UAE





- Stem cell applications are still restricted to minor issues in Dubai and have no major applications as due to barriers of ethical origin.



UAE stem cell bank

- The UAE Department of Health and Medical Services is creating a stem cell bank to harvest cells from UAE nationals and expatriates for a variety of clinical applications, according to the organisers of Arab Health 2006.



- The cell bank could be used to treat conditions such as heart disease, anaemia, Hodgkin's disease and thalassemia, which is particularly prevalent in the UAE.

DHA



- Dubai Cord Blood and research center



Treatments

- The first Stem Cell Treatment centers of the Middle East is set up in Dubai, and it focus on treatments such as plastic surgery, while other center based in Abu Dhabi mainly conduct major surgery and research into the treatment of diseases such as [Diabetes](#).

Laws and Ethics



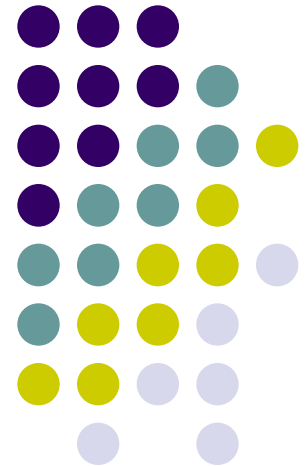


In the Middle East

- In the majority of the region, there is no legal framework regulating stem cell research
- Scientists often rely on religious decrees outlining acceptable practices

Code of Ethics

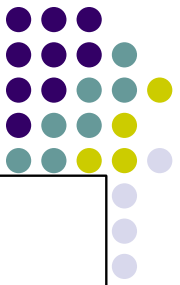
Healthcare Professions
UAE, MoH



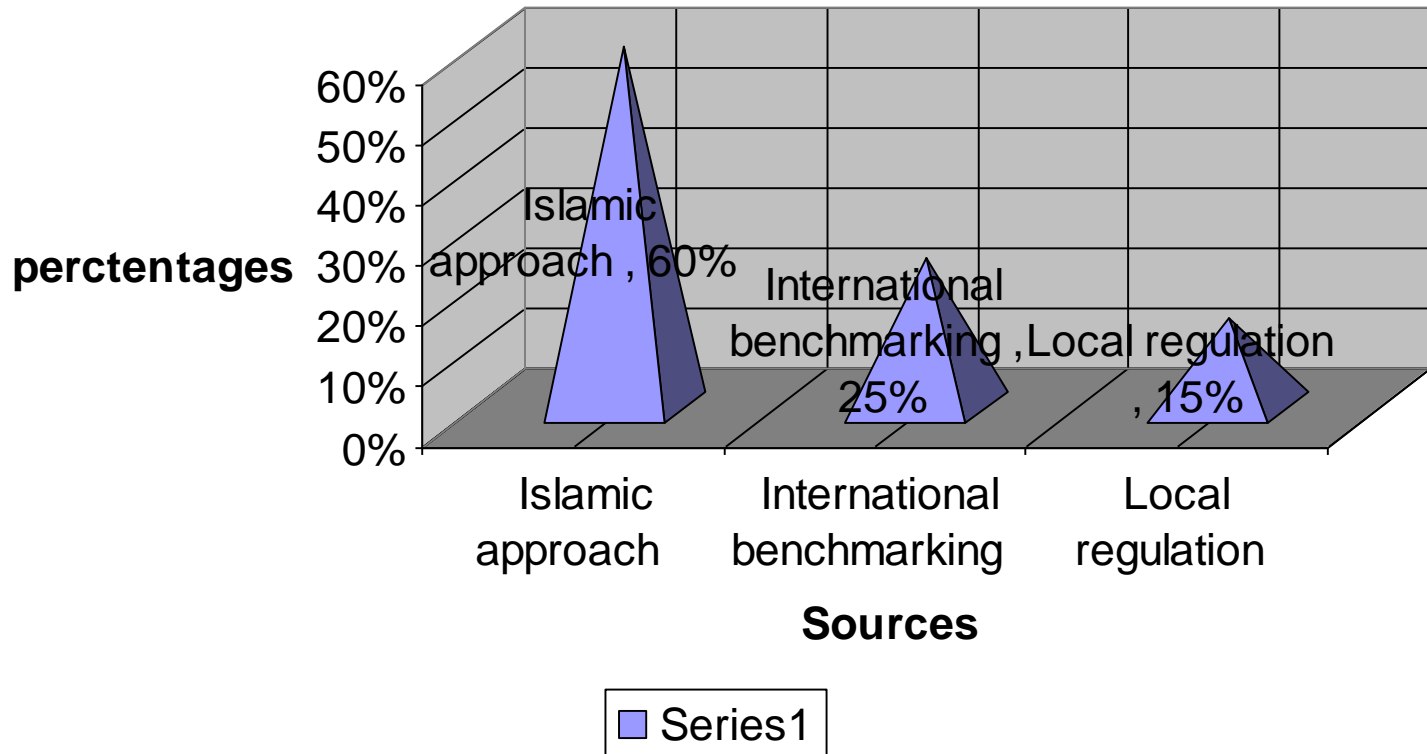
Medical Professionals

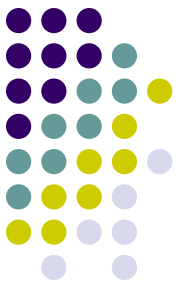


- Engage in research activities consistent with the particular health care needs of the community.
- Ensure that any research activity participated in is:
 - Evaluated for scientific soundness.
 - Approved by the appropriate ethics committee.
 - Is sufficiently planned and supervised to protect subjects from harm.
 - Anonymity of subjects is protected in the reporting of research results.
 - Results of all research are reported truthfully and published when possible.



Sources of ethical cods of stem cell in UAE





- more than 60% of ethical approach derived from Islamic approach,



Stem Cell codes of Ethics in UAE:



- **1. Islamic approach**

It comes within the Islamic philosophy context which always encouraged scientific research, particularly research directed toward finding cures for human disease.





- Based on the expectation of potential benefits, Islamic teachings permit and support human embryonic stem cell research. The majority of Muslim scholars also support therapeutic cloning.



- The early pre-embryos are considered in Islamic jurisprudence as worthy of respect but do not have the full sanctity offered to the embryo after implantation in the uterus and especially after ensoulment



- This permissibility is conditional on the use of supernumerary early pre-embryos which are obtained during infertility treatment in vitro fertilization (IVF) clinics.

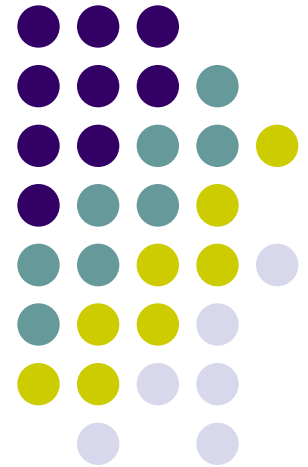
2. other sources of ethical codes



- only 25% from international benchmarking
- and 15% from National regulations.



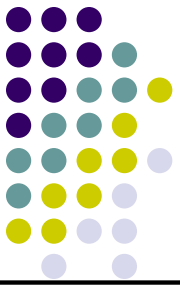
Regulations



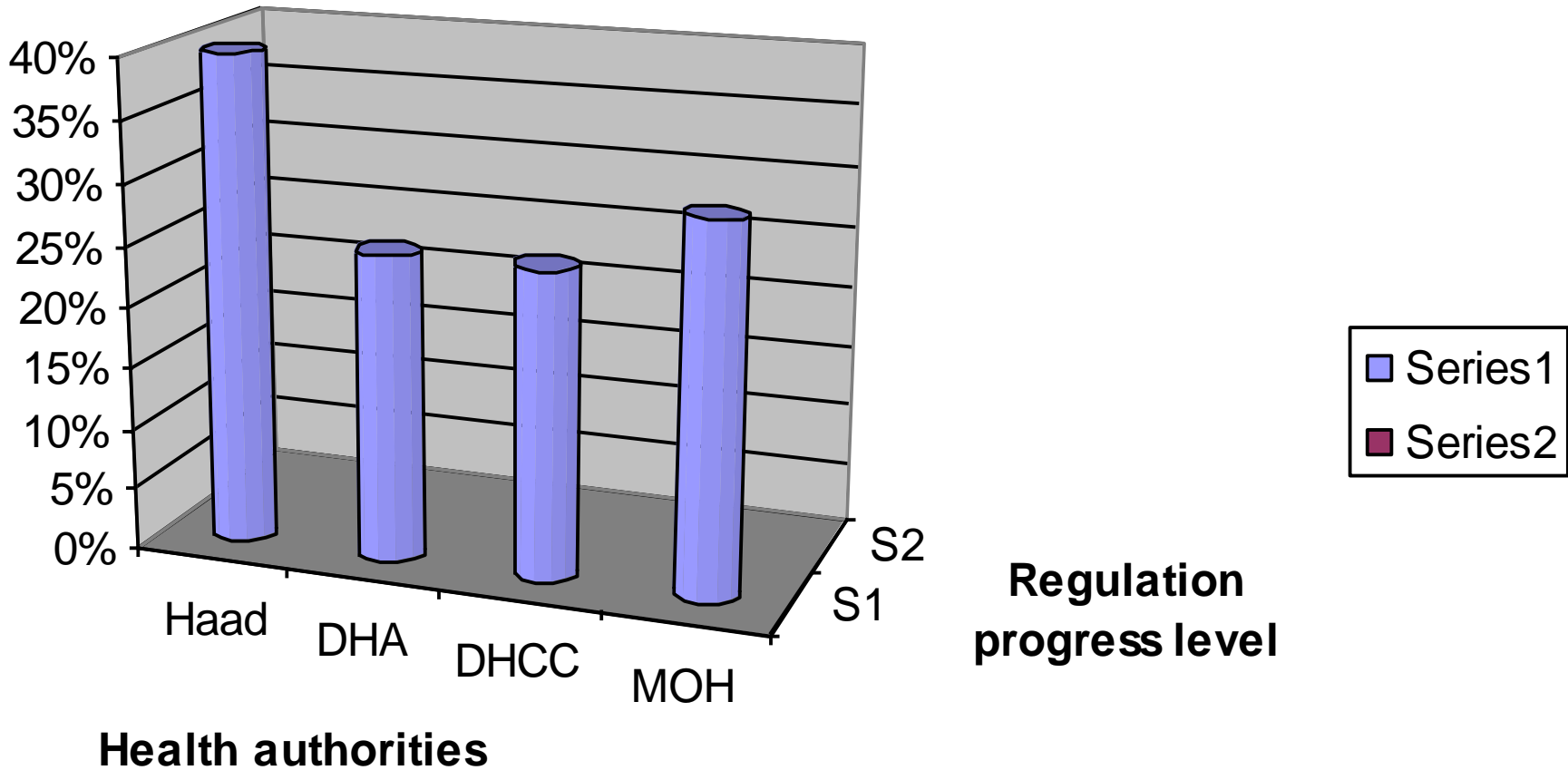


- there is still significant challenges in setting up proper approaches, attitudes as(4)regulatory bodies available in UAE (HAAD, DHA, DHCC, MOH) as they all: achieve less than 30% of regulation development

Figure (7) Distribution of stem cell regulatory bodies in UAE.



Regulatory bodies of stem cell in UAE

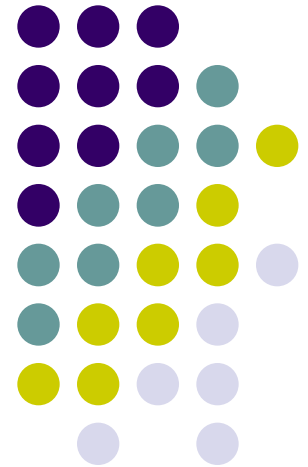




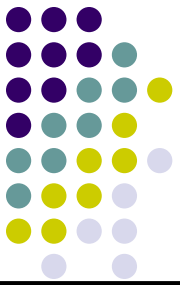
3.Regulation Codes

- Regulation policy of stem cell is on the agenda of regulation body in health care system in Dubai, and it was given a priority within short term goals to be fully developed within the coming two years,

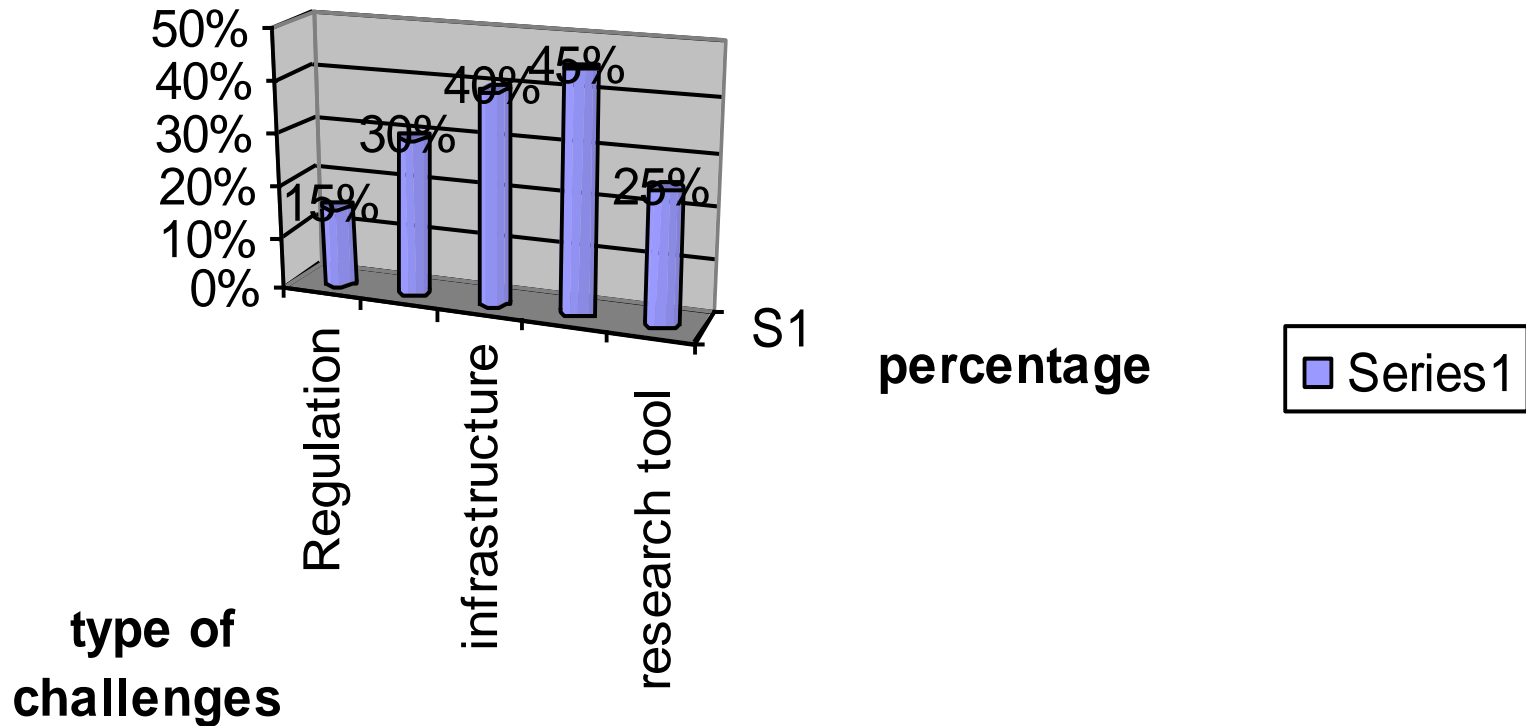
Challenges



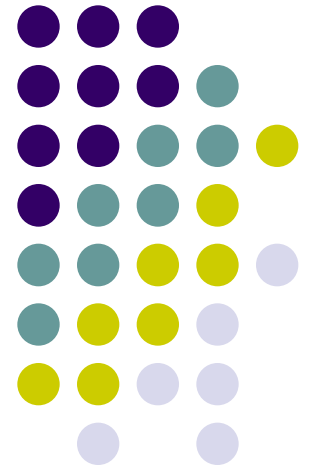
Challenges of stem cell applications and research in UAE.



Challenges for stem cell application and research in UAE



Conclusions





- Private and governmental stakeholders and effort are not yet gathering, focusing and developing major investment in stem cell applications and codes of ethical practices.



Conclusions

- Stem cell research and applications are still not institutionalized and individual base.
- The Current infra structure of stem cell applications is still primitive and not well developed, yet significant steps has been threw recently



Conclusion

- UAE health care system is still at its earlier stages in developing stem cell code of ethics
- and regulatory guideline. Clear vision, mission, objectives and values are in need to be also developed.

Recommendations



- Stem cell research in Dubai is in need for further development, calibration and quality assurance
- Stem cell research and applications are in need to be institutionalized



Recommendations

- Establishing national task force of experts for developing solid **code of ethics** and regulations, and filling major gaps.
- Developing national code of conducts tailored and oriented to the cultural specifications in Dubai



- Benchmarking with international best practice within the national context , needs and developments



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THANK YOU



Thanks

